

# दिल्ली प्रौद्योगिकी विश्वविद्यालय DELHI TECHNOLOGICAL UNIVERSITY

(Formerly Delhi College of Engineering)
(Estd. By Govt. of NCT of Delhi vide Act 6 of 2009)



ORDINANCE, REGULATIONS
&
SCHEME OF TEACHING & EXAMINATIONS
B. TECH. PROGRAM - 2025



# ORDINANCE, REGULATIONS &

# Scheme of Teaching & Examinations B. Tech. Program 2025



### **DELHI TECHNOLOGICAL UNIVERSITY**

(Estd. by Govt. of NCT of Delhi vide Act 6 of 2009) Shahbad Daulatpur, Bawana Road, Delhi-110042 www.dtu.ac.in

# TABLE OF CONTENTS

Page. No.

| About University  |    |
|---|----|
| Delhi Technological University  | 3  |
| • Vision  | 3  |
| • Mission   | 3  |
| • Core Values   | 3  |
| Quality Policy  | 3  |
| Programs offered  | 4  |
| Ranking and Rewards   | 4  |
| Campus and Infrastructure   | 4  |
| Events and Festivals  | 6  |
| • Placements  | 6  |
| Distinguished Alumni  | 6  |
| Our Glorious Past   | 7  |
| Ordinance & Regulations (ORDINANCE 1-B)   |    |
| • Ordinance   | 8  |
| • Regulations   | 9  |
| Annexure IA- Curriculum Scheme of B. Tech. Programmes                             |    |
| • Preamble  | 28 |
| Department of Applied Chemistry   | 36 |
| Chemical Engineering  | 37 |
| Department of Applied Mathematics   | 42 |
| Mathematics & Computing   | 43 |
| Department of Applied Physics   | 48 |
| • Engineering Physics   | 49 |
| Department of Biotechnology   | 54 |
| • Bio-Technology  | 55 |
| Department of Civil Engineering   | 60 |
| Civil Engineering   | 61 |
| Department of Computer Science and Engineering                                    | 66 |
| Computer Science and Engineering  | 67 |
| <ul> <li>Computer Science and Engineering (Data Science and Analytics)</li> </ul> | 72 |
| Department of Electrical Engineering  | 74 |
| Electrical Engineering  | 75 |
| Department of Electronics and Communication Engineering                           | 80 |
| • Electronics and Communication Engineering                                       | 81 |
| • Electronics Engineering (VLSI Design and Technology)                            | 86 |
| Department of Environmental Engineering   | 91 |
| Environmental Engineering   | 92 |

| • ]  | Department of Information Technology   | 97  |
|------|--|-----|
|      | • Information Technology (Cyber Security)  | 98  |
|      | Information Technology   | 103 |
| • ]  | Department of Mechanical Engineering   | 108 |
|      | Mechanical Engineering   | 109 |
|      | Mechanical Engineering with Specialization in Automotive Engineering                 | 114 |
|      | Production and Industrial Engineering  | 119 |
| • ]  | Department of Software Engineering   | 124 |
|      | Software Engineering   | 125 |
| • ,  | Ability Enhancement Courses  | 130 |
| • `  | Value-Addition Courses   | 131 |
| • ]  | Minors offered by various academic departments                                       | 133 |
| • (  | Guidelines for Implementation of Minors  | 148 |
| • ]  | Procedure for Conduct and Evaluation of DEC Mini Project                             | 148 |
| • ]  | Procedure for Conduct and Evaluation of DEC Undergraduate Research Project           | 149 |
| • ]  | Procedure for Conduct and Evaluation of DEC Entrepreneurship and Venture Development | 151 |
| • (  | Guidelines for Evaluation of Industrial/Field Training                               | 152 |
| • ]  | Procedure for Conduct and Evaluation of B. Tech. Project                             | 153 |
| Anne | xures  |     |
| • ]  | Fee Structure 2025-26  | 156 |
| • ,  | Academic Calendar 2025-26  | 171 |
| • ]  | Fee concession for Students belonging to economically weaker sections                | 173 |
| • ]  | Financial Support to Students  | 173 |
| • ;  | Scholarship Schemes  | 175 |
| • ]  | Rules for change of name of student in academic records                              | 177 |
| • (  | Ordinance 6 - Maintenance of Discipline  | 178 |
| • ]  | Forms and Formats  | 182 |
| • ]  | DTU URL: Quick References  | 186 |

## Initially established with the Name "Delhi Polytechnic" In the year 1941 at Kashmere Gate Campus

In the year 1965 Renamed as
Delhi College of Engineering
Reconstituted as
Delhi Technological University in the year 2009

Vide Govt. of NCT of Delhi Act 6 of 2009

-A Non-Affiliating Technological University

"Committed to
Foster Engineering Excellence
and
Scientism together"

#### **About Delhi Technological University**

Delhi Technological University (DTU) is a non affiliating, teaching and research university at Delhi to achieve excellence in science, engineering, technology, management and allied areas and matters connected therewith or Incidental thereto. The University enables students to face the wide-ranging changes taking place in the fields of science, technology, environment and management. This includes innovation, design, development, construction, production, managerial and entrepreneurial activities. The University lays great emphasis on assisting students in the development of national character, self-confidence, leadership and fostering an ecosystem for creativity and Imagination.

Delhi Technological University was upgraded from Delhi College of Engineering by the Government of NCT of Delhi in 2009. The University has an illustrious history spanning over 82 years. This university was initially established with the name of Delhi Polytechnic in the year 1941 to cater to the needs of Indian Industries for trained technical manpower with practical experience and sound theoretical knowledge. From academic year 2017-18, the East Campus of DTU is also functional which offers courses like Bachelor of Business Administration (BBA), Bachelor of Arts (BA) (Honours) in Economics, Master of Arts (MA) (Honours) in Economics, and Master of Business Administration (MBA).

This premier institution is globally well-known for its outstanding education, research, and Innovations. The University currently offers various Inter-disciplinary and Industry relevant-programs in science, technology, management, and allied areas at both the undergraduate and postgraduate-level. The University has established a strong academia-industry interface and has collaborations-with reputed research organizations, industries, and premier institutions.

The university has taken several initiatives in recent peat to engage the students and faculty in research and innovation like provision of funding for students' innovative projects, financial assistance to students for attending Internship overseas, Introduction of three different tracks in elective courses in B. Tech. curriculum namely (a) research (b) product development and (c) entrepreneurship.

#### Vision & Mission of the University

#### Vision:

To be a world class university through education, innovation, and research for the services of humanity

#### Mission:

- 1. To establish centres of excellence in emerging areas of science, engineering, technology, management, and allied areas.
- 2. To foster an ecosystem for Incubation, product development, transfer of technology, and entrepreneurship.
- 3. To create environment of collaboration, experimentation, imagination, and creativity.
- 4. To develop human potential with analytical abilities, ethics, and integrity.
- 5. To provide environment friendly, reasonable and sustainable solutions for local and global needs.

#### Core Values of the University

Integrity We do what we say through trust, transparency and honesty.

**Compassion** We foster civilized mindset for kindness, consideration and benevolence.

**Commitment** We dedicate ourselves completely to all our endeavours.

**Creativity** We nurture Innovation, Imagination and Ideation.

Collaboration We promote team work through togetherness, harmony and acknowledgement.

**Inclusion** We embrace diversity with respect, acceptance and affirmation.

#### **Quality Policy**

The university is committed to achieving global standards of excellence in the field of Science, Technology, Management

and allied areas by disseminating knowledge through cutting-edge research, education and Innovation. We adopt best practices to maintain high standards in the core-and allied functions through continuous evaluation and improvement of our processes.

#### **Programs Offered**

The university offers 17 undergraduate engineering programs, 26 post graduate engineering programs, an M. Tech. by Research, an MA (Honours) Economics program, 5 MBA programs, an M. Des, 5 M. Sc. programs, and Integrated B. Sc & M. Sc programs. Besides this the university offers 3 other bachelor programs namely B. Des., BBA and BA (Honours) Economics. The engineering programs include disciplines of Chemical Engineering, Mathematics & Computing, Engineering Physics, Bio-Technology, Civil Engineering, Computer Science and Engineering, Information Technology, Electrical Engineering, Electronics & Communication Engineering, Environmental Engineering, Mechanical Engineering Mechanical Engineering with Specialization in Automotive Engineering, Production and Industrial Engineering, Cyber Security, Electronics Engineering (VLSI Design & Technology), Computer Science and Engineering (Data Science) and Software Engineering.

The UG and PG programs of DTU offer most modem curricula, based on the Choice Based Credit System (CBCS), having rich mix of courses from science, engineering, management, social sciences, humanities, fine arts, liberal arts, classical music, sports, elk. The course curricula have been developed with a view to Integrate advancements in science and engineering, while also incorporating Industry relevant technologies. To provide further flexibility there is provision for credit transfer and earning credits through massive open online courses (MOOCs) from platforms such as NPTEL, SWAYAM and from any other Institute/University in online/offline mode with prior approval of Board of Studies of the respective Department. The Curriculum is regularly updated keeping in view the new technologies and changes in Industries and society.

#### Ranking and Rewards

The university is having ISO 9001:2015 certification since 27.11.2018, accredited with 'A+' grade by NAAC (National Assessment and Accreditation Council) and has been accorded 12-B status by the University Grants Commission (UGC). Many of its UG and PG engineering programmes are also-accredited by the National Board of Accreditation (NBA). The University is consistently ranked among best 10 engineering institutions as per the various independent surveys on best engineering Institutions of the country. The University has been ranked 1st by Times Engineering In Top 170-Engineering Institutions in India Ranking 2022. The 2024 NIRF rankings placed DTU at the 27<sup>th</sup> position among the engineering Institutions and at 8<sup>th</sup> in the categories of universities.

#### Faculty and Research

The university has a very talented pool of experienced, as well as young faculty members who are highly qualified in their area of specialization and have very good national and International exposure. To encourage the students and faculty for research and innovation, the university has provisions like-funding for students' innovative projects, financial assistance to students for attending internship-overseas, research project grant to all faculty members etc. To celebrate the individual's excellence in research, the university offers research excellence awards to researchers in three categories of awards annually, namely, Outstanding Research Awards, Premier Research Awards, and Commendable Research Awards. The awards are open to all the researchers of DTU. In addition, university also recognizes excellence in teaching. The university has been granted with the Technical Education Quality Improvement Program (TEQIP) project by MHRD. The project provides funds to faculty and students to organize and attend various faculty development programs, seminars, and conferences.

#### Campus and Infrastructure

DTU has 164 acres of a lush green, tech-savvy main campus, consisting of 16 academic departments, research centers, and residence for students, faculty, and staff. At present, the university has more than 15,000 students in its undergraduate, postgraduate, and Ph.D programmes. DTU has a EDUSAT studio utilized for recording of lectures, events, and talks. Besides the main campus, the university has another campus located in East Delhi, offering BA (Hons.) Economics, BBA, MA (Hons.) Economics and Executive MBA programme.

#### **Computer Centre**

DTU has a well-equipped computer centre to caller to the needs of students and faculty of the university. It is housed in a magnificent state-of-the-art building having specialized laboratories to provide variety of platforms and computing environment for UG, PO students and research scholars. The centre possesses a number of servers and over 240 Intel core i5 computer systems. In addition, the centre has more than 16 server engines hosting different applications such as websites & portals, SPSS, Mathematica, MatLab, Ansys, DNS, LDAP, proxy, E-mail services, Network Monitoring System NMS) etc. The centre is fully networked through high-end Intelligent network switches, and possesses round the dock 10 Gbps NKN leased line and a 1 Gbps backup leased line in a different pipe for the LAN wired & Wi-Fi connectivity for the academic, administrative, residential and hostel blocks of the campus providing high speed Internet facilities on all the nodes. It also has the latest versions of compillers, scientific, technical and engineering softwares for the students of various programmes.

#### Library and Knowledge Centre

Delhi Technological University library building is a four-storied, esthetically designed, centrally air-conditioned structure with a seating capacity of 450. DTU Library, with a collection of more than 2,29,155 text and reference books and a large number of e-Journals, e-books, and manuscripts in digital format, is one of the highly rich engineering libraries in the country. DTU Library provides remote access facilities to all its readers through cloud-based remote access software. The library also helps researchers to maintain due Integrity and ethics by providing the facility of similarity check to avoid instances of plagiarism. It has a very active presence on Facebook. Various current awareness services, monthly new arrivals, and user Information literacy programs are continually organized throughout the year.

#### **Outreach, Extension and Business Incubation Activities**

The university has established many centers like Center of Outreach & Extension Activities, Center of Human Resource Development (HRDC) and Equal Opportunity Cell The center of outreach & extension activities organizes a variety of activities for promoting public awareness, especially for deprived sections of society including awareness programmes on engineering for class X/XI/XII students. The HRDC center aims to upgrade and enhance the skills and knowledge of faculty at DTU. The university has also established the DTU Innovation and Incubation Foundation (DTU-IIF), pursuant to sub-section (2) of section 7 of the Companies Act, 2013 and rule 8 of the Companies (Incorporation) Rules, 2014. The center offers Incubation Infrastructure, Including space, computing resources, connectivity, common tools, and environment for co-working, collaboration, and Innovation. Currently, 57 active start ups are working in the Centre. DTU-IIF has received a project of Rs. 5 Cr from DST & a project of Rs. 4 Cr from DPIT.

#### Sports and Other Outdoor Activities

The students of DTU are facilitated by excellent sports complex for Indoor and outdoor games. DTU has 4 x 400m racing track, fields for football & hockey. A cricket pitch and courts for volleyball, basketball, tennis, badminton, along with facilities for Indoor games. A well-equipped gymnasium is-also available in the sports complex in addition to gymnasium facilities in each hostel. The university has engaged coaches in almost all the games to coach the students and nurture university teams. Students are encouraged to participate in various sporting events and tournaments held in, and around NCR of Delhi. From the academic year 2018-19, as per the revised curriculum, the university offers foundation electives / value addition electives to the students of first year and second year of UG programmes and in these sports have big share of electives.

#### Hostels for Boys, Girls and Health Centre

The University has 09 boys' and 03 girls' hostels to accommodate 1614 boy and 600 girl students. Every hostel has its own common room and gymnasium. The hostels are connected via the campus-wide Wi-Fi as well as wired network, enabling the residents to browse the Internet and access online Library resources for their academic and research-related tasks. DTU has a full-fledged health center where services of five medical practitioners and round the clock nursing facilities are available. The university has a health centre with OPD facilities in the area of medicine, ophthalmology, dentistry and physiotherapy.

#### **Events and Festivals**

The university organizes annual cultural, literary, sports and technical festivals. These festivals not only provide an opportunity to the students to connect with the professional world, but also an opportunity to display their creative and technical skills in several Interesting events and activities organized during the fests. The ENGIFEST, one of the most popular student's cultural events of northern India, is the annual cultural extravaganza of the university and offers a good mix of literary, cultural, and entertainment events. The INVICTUS is annual technical festival of the university where all technical societies of the University host various technical events and competition. The sports festival ARENA is organized annually. The festival witnesses large participation of boys and girls in various sports which Include athletics, cricket, tennis, basketball, volleyball, badminton, table tennis, carrom, chess etc.

University regularly organizes conferences, workshops and faculty development programs for Beaming through networking and academic growth of faculty and students.

#### **Placements**

DTU has been ranked among top institutes in India in terms of placement and higher studies as per NIRF data (2024) In the Engineering category. The university students are placed in reputed companies offering a promising and high profile career. Some of the top recruiters Include Google, Amazon, Microsoft, Uber, Sprinklr, Uniqlo, Goldman Sachs, Qualcomm, Texas Instruments, Synopsys, SanDisk, Nvidia, Maruti, Samsung, Bain, KPMG, McKinsey, PWC, GAIL, BEL, C-Dot etc. A major highlight of placements at DTU Is that the leading companies not only make job offers to the final year students, but they also offer paid internships to third year students. This enhances the Industry Interface further, preparing them for the technological challenges of the Industries and in turn assure better pre-placement Jobs offers for the students.

Students who have graduated from DTU are studying in various prestigious national and International Institutes such as IIMs, IITs, Carnegie Mellon University, Columbia University, Duke University, Purdue University, University of Texas and University of California.

In all the University has all the possible academic, cultural and social infrastructure and environment to develop industry relevant and socially sensitive human resource for India and Globe.

#### Distinguished Alumni

DTU has provided the nation, as well as the world at large, with some of the best and finest engineering and technology professionals. They have, with distinction, led great enterprises and corporate houses in India and abroad, bringing Immense glory to their alma-mater, all the while enhancing the pride of the engineering profession by their distinguished services performed with utmost sincerity and commitment.

The long list of distinguished alumni of this great Institution Includes Vinod Dham, 1971 EC, The Designer of Pentium Chip: Raj Soin, 1969 Mech, Chairman, Soin International, Ohio, USA; K. L. Chugh, 1960 Mech, former CMD, ITC; Ajoy Choudhury, 1968 Architecture, Eminent Architect, Dr. Durga Das Agrawal, 1967 Mech, President and CEO, Piping Technology and Products, Houston, USA; Prof. Bhuvanesh Goswami, 1959 Textile, Distinguished Alumni Professor, University of Clemson, USA; Prof. Yogi Goswami, 1969 Mech, Distinguished Professor of Solar Energy Technologies, University of Florida, USA; Yogesh Sud, 1989 Mech, NASA Gold Medalist Scientist, Surya Kant, Vice President and Head TCS America USA; A. K. Purl, 1975 Mech, Former CMD, BHEL: A. K. Baweja, Former CMD, Hindustan Aeronautics Ltd.; Sanjeev Ahuja, Former Chairman, Orange-SA; Ashwani Kumar, CMD, Bharat Electronics Ltd.; Anil Sardana, Managing Director, Tata Power Ltd.; A.K. Purwaha, CMD, Engineers India Ltd.; SJK. VIJ, former Member Railway Board and President, Indian Bullding Congress; Kamall Singh, IPS; Arun Goyal, IAS, Minister of Commerce and Industry, Indian Embassy, Tokyo, Japan; Vijay Shekhar Sharma, Founder, PayTM; Group Captain (Late) R.S Bhola, Olympic Winner, Ajay Dixit, CEO Calm Oil & Gas, Vedanta Ltd., Archana Bhardwaj Executive-Director IOCL, P. R Sheshadri, CEO and MD, Karur Vysya Bank Limited, Jayant Khosla CEO and MD VLCC, Sanjay Brahmawar, CEO, Software AG, and many more.

#### **Our Glorious Past**

"84 years of Tradition of excellence in Engineering & Technology Education, Research and Innovations" Delhi College of Engineering, (initially established with the name - Delhi Polytechnic) came into existence in the year 1941 to cater the needs of Indian industries for trained technical manpower with practical experience and sound theoretical knowledge. The institution started its functioning at the historic Kashmere Gate campus as a follow up of the Wood and Abott Committee of 1938. It comprised of a multi disciplinary and multi level institution offering wide ranging programs in engineering, technology, art and sculpture, architecture, pharmacy and commerce. The national diploma awarded by the institution was recognized as equivalent to degree level for the purpose of employment. In 1952, the college was affiliated with University of Delhi and started formal Degree level programs. The department of Architecture later became the School of Planning and Architecture, now a Deemed University and Institution of National importance. The department of Arts and Sculpture became College of Arts and the departments of Chemical Technology and Textile Technology were shifted out en-block to mark beginning of the IIT Delhi at its new campus at Hauz Khas. The department of commerce was later abolished and the faculty of management studies of the University of Delhi was established by Prof. A Das Gupta, of DCE. Delhi College of Engineering is thus the mother institution of a number of national projects including IITD, SPA, College of Arts and even the famous FMS.

Till 1962, the college was under the direct control of Ministry of Education, Government of India. In 1963, the administration of the college was handed over to Delhi Administration. Delhi College of Engineering was under the administrative control of Department of Training & Technical Education, Govt. of NCT of Delhi. For academic purpose, the college was affiliated to University of Delhi since 1952. From July 2009, the DCE has become Delhi Technological University vide Delhi Act 6 of 2009.

The erstwhile DCE has functioned from its historic Kashmere Gate Campus for almost 55 years and has shifted in 1996 to its lush green sprawling campus of 164 Acres at Bawana Road, adjoining Sector-17, Rohini, Delhi. Its shifting to new campus has added the dimension of research and caused innovations in plenty, which has received high national and international acclaim. As Delhi Technological University, it has the desired autonomy to excel and shape its elf as a world class Technological University.

#### **Delhi Technological University**

Ordinance (1-B)

#### Ordinance for the Undergraduate and Post Graduate degree programs of Delhi Technological University

(For batches 2018-19 and onwards)

#### **Preamble**

Delhi Technological University (DTU) is a non-affiliating, teaching and research University at Delhi to achieve excellence in science, engineering, technology, management and allied areas and matters connected therewith or incidental thereto. It enables students to face the wide-ranging changes taking place in the fields of technology, environment and management with confidence. This includes undertaking design, development, construction, production, managerial and entrepreneurial activities, and higher studies in their chosen or allied interdisciplinary fields of study. The University lays great emphasis on assisting students in the development of National character, self-confidence, leadership and entrepreneurial skills.

#### 1. Short title and Commencement:

- (I) This ordinance shall be called the Ordinance 1 (B) 2018 meant for the undergraduate and post graduate degree programs of Delhi Technological University for batches 2018-19 onwards.
- (ii) This ordinance shall come into force with effect from the date of Board of management approval.

#### 2. Definitions: (a) In this ordinance, unless the contents otherwise require-

- i. "AC" and "Council" shall mean the Academic Council of the Delhi Technological University.
- ii. "BoM" shall mean the Board of Management of the University.
- iii. BoS shall mean Board of Studies of the Department/ School
- iv. "CGPA" shall mean the Cumulative Grade Point Average.
- v. Department shall means a department of studies of the university.
- vi. School shall mean a school of studies of the university.
- vii. "SGPA" shall mean the Semester Grade Point Average.
- viii. "Student" shall mean a student registered for undergraduate or post graduate program.
- ix. "University" shall mean the Delhi Technological University.
- x. "UTTC" shall mean University Time Table Committee.
- (b) Words and expressions used but not defined in this ordinance and defined in the Act and Statutes, shall have the same meaning as assigned to them in the Act or Statue.

#### Note: 'He', 'Him' and 'His' implies 'he/she', 'Him/Her' and 'his/her', respectively.

#### 3. Ordinance:

- i. The University shall offer UG and PG programs as approved by the BoM on the recommendation of the AC either on its own or on the initiative of a Department/ School, and/or on the direction of the BoM.
- ii. The minimum entry qualifications and the policy and procedure of admission to the programs shall be such as may be approved by the AC.
- iii A student of a program shall be required to earn a minimum number of credits through various curricular components like lectures/tutorials/laboratory/studio courses, seminar, industrial training, project etc. at the University or at such other institutions/industry as may be specified in the Regulations.
- iv. A student shall be required to complete all the requirements for the award of the Bachelor or Master degree within such period as may be specified in the Regulations.
- v. A student shall be required normally to attend every lecture, tutorial, studio and laboratory class. However, for late registration, sickness or other such exigencies, absence may be allowed as provided for in the Regulations.

- vi. A student may be granted such scholarship/studentship/assistantship/stipend, etc. and awarded such prizes and medals as may be specified in the Regulations in accordance with the directions of the Government of India/Government of NCT of Delhi and/or the decision of the AC/BoM.
- vii. The procedure for the withdrawal from a program, rejoining the program, and all such matters as may be connected with the running of a program shall be such as may be specified in the Regulations.
- viii. The procedure of conduct of examination, evaluation, the award of grades and the SGPA/CGPA, secrecy, and declaration of result shall be such as may be specified in the Regulations.
- ix. The award of the Bachelor or Master degree to an eligible student shall be made in accordance with the procedure laid down in the Regulations.
- x. The procedure for temporarily suspending or phasing out of a program, shall be such, as may be laid down in the Regulations.
- xi. Notwithstanding anything contained in the above Ordinance, no Regulations shall be made in contravention of the decision of the AC/BoM in regard to the duration of the program, the number of studentships, the procedure of admission, the percentage of students of various categories. The Regulations for the undergraduate and post graduate degree programs can be prepared/modified/amended from time to time and the same shall be approved by the AC.
- xii. Subject to the provisions of the Act and Statutes and these Ordinances, the issues not covered in these Ordinances or in the event of differences of interpretation, the Vice Chancellor may take a decision, after obtaining the opinion of a Committee consisting of any or all the Deans of the University. The decision of the Vice Chancellor shall be final.
- xiii. In special circumstances, the Vice Chancellor may, on behalf of the BoM, approve amendment, modification, insertion or deletion of an ordinance(s), which in his opinion is necessary or expedient for the smooth running of a program, provided that all such changes shall be reported to the BoM in its next meeting for ratification.

# Regulations for the Undergraduate and Post Graduate degree programs Delhi Technological University

(To be read along with the Ordinance 1(B), 2018 meant for the undergraduate and post graduate degree programs of Delhi Technological University for batches 2018-19 onwards)

(For batches 2018-19 and onwards)

#### Preamble

Delhi Technological University (DTU) is a non-affiliating, teaching and research University at Delhi to achieve excellence in science, engineering, technology, management and allied areas and matters connected therewith or incidental thereto. The University enables students to face the wide-ranging changes taking place in the fields of science, technology, environment and management. This includes innovation, design, development, construction, production, managerial and entrepreneurial activities. The University lays great emphasis on assisting students in the development of national character, self-confidence, leadership and fostering an ecosystem for creativity and imagination.

#### R.1(B).1. Short title and Commencement:

- (i) These Regulations are meant for the undergraduate and post graduate degree programs of Delhi Technological University for batches 2018-19 onwards and to be read with Ordinance 1(B), 2018 meant for the undergraduate and post graduate degree programs of Delhi Technological University for batches 2018-19 onwards.
- (ii) These Regulations shall come into force with effect from 1.08.2018.

#### R. 1(B).2. Definitions:

- (i) "Applicant" shall mean an individual who applies for admission to undergraduate/ post graduate degree programs.
- (ii) "AC" and "Council" shall mean the Academic Council of the Delhi Technological University.
- (iii) "Academic Program" shall include a program of courses or any other component leading to undergraduate or

- post graduate degree.
- (iv) "BoM" shall mean the Board of Management of the University.
- (v) "BoS" shall mean Board of Studies of the Department.
- (vi) "CGPA" shall mean the Cumulative Grade Point Average.
- (vii) "Coordination Committee" shall mean the committee of the faculty members involved in a course.
- (viii) "COE" shall mean Controller of Examinations of the University.
- (ix) "Course" shall mean a curriculum component of the academic program identified by a designated code number, a title and specific credit assigned to it.
- (x) "Course Coordinator" shall mean a faculty member who shall have full responsibility for the course; coordinating the work of faculty member(s) involved in that course, including examinations and the award of grades.
- (xi) "CWS" shall mean Class Work Sessional.
- (xii) "Dean (UG)" shall mean the Dean Academic (UG).
- (xiii) "Dean (PG)" shall mean the Dean Academic (PG).
- (xiv) "Degree" shall mean the Bachelor or Master degree of the University as may be approved by the BoM from time to time.
- (xv) "Department" shall mean a department of studies of the University.
- (xvi) "DSW" shall mean the Dean of Students Welfare.
- (xvii) "ETE" shall mean End-Term Examinations.
- (xviii) "HOD" shall mean Head of the Department/School.
- (xix) "Faculty Advisor" shall mean a teacher nominated by the Department to advise a student on the courses to be taken by him/her and other matters related to the academic program.
- (xx) "Grade Moderation Committee" shall mean the committee appointed by the Board of Studies to moderate grades awarded by the Course Coordinators in different courses in a semester at a given level of a curriculum.
- (xxi) "MTE" shall mean Mid-Term Examinations.
- (xxii) "NRI/PIO/FN category Student" shall mean the student who is admitted against NRI/PIO/FN category.
- (xxiii) "OBC" shall mean the other backward classes as notified by the Government of India/Government of NCT of Delhi from time to time.
- (xxiv) "PD" shall mean the persons with disability as specified by the Government of India from time to time.
- (xxv) "PG" shall mean the Post Graduate.
- (xxvi) "PRE" shall mean Practical Examinations.
- (xxvii) "PRS" shall mean Practical Sessional.
- (xxviii) "Registration" shall mean registration for course or semester at the start of the semester of any program of the University.
- (xxix) "SC/ST" shall mean the Scheduled Castes and Scheduled Tribes as notified by the Government of India/Government of NCT of Delhi from time to time.
- (xxx) "Scheme of Teaching and Examination" shall mean the scheme of teaching and examination as approved by the Academic council from time to time.
- (xxxi) "School" shall mean a school of studies of the University.
- (xxxii) "SGPA" shall mean the Semester Grade Point Average.
- (xxxiii) "Student" shall mean a student registered for undergraduate or post graduate program.
- (xxxiv) "UG" shall mean the Under Graduate.
- (xvii) "University" shall mean the Delhi Technological University.

(xviii) "UTTC" shall mean University Time-Table Committee.

Note: 'He', 'Him' and 'His' implies 'he/she', 'Him/Her' and 'his/her', respectively.

#### R. 1(B).3 Board of Studies (BoS):

The Board of Studies (BoS) shall be a sub-committee of the AC, which shall consider all the academic matters related with the Department/School. It shall also consider and recommend to the AC the broad framework and policies related to the UG and PG degree programs offered by the University. The composition of BoS of the Department(s)/School(s) shall be as follows:

| (a) | Head of the Department/School                                 | Chairperson |
|-----|---|-------------|
| (b) | All Professors of the Department/School                       | Member      |
| (c) | Two Experts appointed by the Vice Chancellor                  | Member      |
| (d) | Two Associate Professors of the Department/School by rotation | Member      |
| (e) | One Expert from Industry                                      | Member      |
| (f) | One Alumni Expert   | Member      |

<sup>\*</sup>The Associate/Assistant Professors of the Departments/School shall be by rotation for a period of two years. In case of non-availability of Associate Professor(s) in the Department/School, the senior most Assistant Professor(s) in the Department/School will be the member for two years or till the joining of Associate Professor whichever is earlier. In the absence of adequate faculty in the Department/School, Vice Chancellor can constitute the BoS with faculty from other relevant disciplines.

#### R. 1(B).4 Undergraduate and Post Graduate Programs:

(I) The University offers Undergraduate and Post graduate programs of different durations in different disciplines as given in Table 1. The scheme of teaching and examination of these programs is given in Annexure IA-IM respectively. The scheme of teaching and examination of a program may be amended/modified in accordance with the approval of the AC.

Table 1: Broad Structure of UG and PG Programs

| S. No. | Program                             | Annexure    |
|--------|-------------------------------------|-------------|
| 1.     | B. Tech.                            | Annexure IA |
| 2.     | B. Tech. under Continuing Education | Annexure IB |
| 3.     | BBA                                 | Annexure IC |
| 4.     | BA/B.Sc.                            | Annexure ID |
| 5.     | B. Des.                             | Annexure IE |
| 6.     | M. Tech.                            | Annexure IF |
| 7.     | M. Tech (Part Time)                 | Annexure IG |
| 8.     | MBA                                 | Annexure IH |
| 9.     | EMBA                                | Annexure II |
| 10.    | M.A.                                | Annexure IJ |
| 11.    | M.Sc.                               | Annexure IJ |
| 12     | M. Tech. by Research                | Annexure IK |
| 13.    | Integrated B. Sc. & M. Sc.          | Annexure IL |
| 14.    | M. Des.                             | Annexure IM |

(ii) The normal and maximum duration of the UG and PG programs is given in Table 2. The maximum duration for all the programs shall be counted from the date of initial registration. The maximum duration of the program shall include the period of withdrawal, absence and different kinds of leaves permissible to a student, but it shall exclude the period of rustication. The duration of these programs may be altered in accordance with the decision of the AC/BoM.

Table 2: Duration of UG and PG Programs

| S. No. | Program                             | Normal                 | Maximum                |
|--------|-------------------------------------|------------------------|------------------------|
|        |                                     | <b>Duration (Year)</b> | <b>Duration (Year)</b> |
| 1.     | B. Tech.                            | 4                      | 7                      |
| 2.     | B. Tech. under Continuing Education | 4                      | 7                      |
| 3.     | B. Tech. (Lateral Entry)            | 3                      | 5                      |
| 4.     | BBA                                 | 3                      | 5                      |
| 5.     | B. A. / B.Sc.                       | 3                      | 5                      |
| 6.     | B. Des.                             | 4                      | 7                      |
| 7.     | M. Tech.                            | 2                      | 4                      |
| 8.     | M. Tech. (Part Time)                | 3                      | 5                      |
| 9.     | MBA                                 | 2                      | 4                      |
| 10.    | EMBA                                | 2                      | 4                      |
| 11.    | M. A.                               | 2                      | 4                      |
| 12.    | M. Sc.                              | 2                      | 4                      |
| 13.    | M. Tech. by Research                | 2                      | 4                      |
| 14.    | Integrated B. Sc. & M. Sc.          | 5                      | 7                      |
| 15.    | M. Des.                             | 2                      | 4                      |

#### R. 1(B).5 Admissions:

- i. The policy of admissions, the eligibility thereof, admission criteria and other issues pertaining to admission shall be such as may be approved by AC from time to time.
- ii. NRI/PIO/Foreign national either residing in India or abroad may be admitted to the UG and PG programs in accordance with the policy guidelines laid down by the AC from time to time.

#### R. 1(B).6 Starting a New Program:

I The University may start a new UG or PG program as approved by the BoM on the recommendation of the AC either on its own or on the initiative of a Department/School, and/or on the direction of the BoM.

#### R. 1(B).7 Semester System:

- I. The academic programs in the University shall be based on semester system; Odd and Even semesters in a year with winter and summer vacations.
- ii. A number of courses shall be offered in each semester. Each course shall have a certain number of credits assigned to it depending upon the academic load of the course assessed on the basis of weekly/semester contact hours of lecture, tutorial, studio and laboratory classes, assignments or field study or self-study.
- iii. The courses offered in a semester shall be continuously assessed and evaluated to judge the performance of a student.

#### R. 1(B).8 Course Code:

Each course offered by the University shall be identified by a course code, normally consisting of a string of five alpha-numeric characters followed by a course title. The first two characters in a course code shall be capital letters identifying the responsible Academic Department/School offering the course. The next three characters are numerical digits: the first one normally specified the year of study and the last two digits specify the course

number and the semester in which the course shall be offered. Normally odd number in the course code will indicate that the course will be offered in the odd-semester and the even number will indicate that the course will be offered in the even-semester of the year.

#### R. 1(B).9 Course Credits:

Each course shall have an integer number of credits, which reflects its weight. The number of credits of a course in a semester shall ordinarily be calculated as under:

- i. Lectures/Tutorial: One lecture hour per week shall normally be assigned one credit. One hour of tutorial per week shall be assigned one credit. However, the credits may be adjusted further by taking into consideration the quantum of work required to be put in by a student for learning the course having two/three hours of contact every alternate week shall have one credit only.
- ii. Practical and Design Studio: One laboratory or Design Studio hour per week shall normally be assigned half a credit. The courses having two/three hours of contact every alternate week shall have one credit only.

#### R. 1(B).10 Academic Registration:

- i. Every student shall be required to register in each semester on the scheduled date as per academic calendar of the University till the completion of the degree. If the student does not register on scheduled date he/she has to pay late registration fee notified from time to time up to a maximum of 10 working days. Registration in absentia may be permitted by the Dean (UG)/Dean (PG). In absentia registration may be allowed only in rare cases such as illness or any other contingencies, at the discretion of the Dean (UG)/Dean (PG).
- ii. In case, a student is proceeding on industrial training/internship, late registration may be allowed only up to a maximum of 10 working days after the scheduled registration date without late registration fee by the Dean (UG)/Dean (PG).

#### R. 1(B).11 Course Registration:

- I. Every student shall be required to register for the courses that he/she wants to study for earning credits and his/her name will appear in the roll list of each of these courses. No credit shall be given if a student attended a course for which he or she has not registered. The performance of a student in all the courses, for which he/she has registered, shall be included in his/her grade card(s).
- ii. Student should first register for the courses in which he/she has been declared failed in the previous year/semester and then register for the remaining courses of the semester to make up the total required credits for that semester. However, a student of a program of more than 2 years duration shall not be allowed to register for the courses offered to students of third year, if he/she has not cleared all the courses offered to students of program of more than 3 years duration shall not be allowed to register for the courses offered to students of fourth year, if he/she has not cleared all the courses of second year.
- iii. All students of UG/PG program shall complete the registration procedure on a specified registration date as per academic calendar/ schedule notified from time to time.
- iv. A student is advised to register the courses as specified in the scheme of teaching and examination of the program in each semester. In case the student is not allowed to register the courses of current semester due to backlog of course(s) of previous year(s), he/she may register for credits less than minimum credits depending on number of backlog of course(s) of previous year(s). However a student can register for a minimum and a maximum of credits as given in **Table 3**.

**Table 3: Minimum and Maximum Permissible Credit** 

| S. No. | Program                             | Minimum | Maximum |
|--------|-------------------------------------|---------|---------|
|        |                                     | Credit  | Credit  |
| 1.     | B. Tech.                            | 16      | 32      |
| 2.     | B. Tech. under Continuing Education | 12      | 24      |
| 3.     | B. Tech. (Lateral Entry)            | 16      | 32      |
| 4.     | BBA                                 | 16      | 32      |
| 5.     | B. A.                               | 16      | 32      |
| 6.     | B. Des.                             | 16      | 32      |
| 7.     | M. Tech.                            | 12      | 24      |
| 8.     | M. Tech. (Part Time)                | 12      | 16      |
| 9.     | MBA                                 | 16      | 32      |
| 10.    | EMBA                                | 16      | 32      |
| 11.    | M. A. / M. Sc.                      | 16      | 32      |
| 12.    | M. Tech. by Research                | 16      | 24      |
| 13.    | Integrated M. Sc.                   | 16      | 32      |
| 14.    | M. Des.                             | 16      | 32      |

- v. A student shall have the option to add or delete courses from his/her registration during the first ten days of the semester as per Academic Calendar.
- vi. A student shall have the option to obtain a Minor in a specific discipline. A Minor shall be awarded to a student along with his/her major discipline if he/she has earned requisite credits (courses) from the prescribed basket of Courses for that Minor.
  - a. A student who wishes to pursue a Minor from other discipline shall earn 24 credits (out of the total 48 credits to be earned from elective courses) from the basket prescribed for that particular Minor. The remaining 24 credits shall be earned from the departmental elective courses of the discipline to which the student is pursuing his/her UG degree.
  - b. A student who wishes to pursue a Minor from the own discipline shall earn 20 credits (out of the total 48 credits to be earned from elective courses) from the basket prescribed for a particular Minor. The remaining 28 credits shall be earned from the department elective/general elective courses.
  - c. A student not keen to purse a Minor shall earn atleast 24 to 28 credits (out of the total 48 credits to be earned from elective courses) from the department elective courses of the discipline in which the student is pursuing his/ her UG degree. The remaining credits (24 or 20) shall be opted from the departmental elective/general elective courses
- vii. A student shall have the option to do course work and/or project work for one semester at any University that is ranked in first 500 by Times Higher Education or QS ranking in last five years, under Semester away Program. The other Universities may also be considered where DTU has signed a Memorandum of understanding under the student exchange program. The detailed guidelines of Semester away Program are given in **Annexure-I.**

#### R.1(B).12 Minimum Number of Students Required for an Elective Course:

An elective course in the department/school shall run if a minimum of 20 numbers of students register for it in a semester. However, the minimum number of students shall be decided as per guidelines laid by BOS for programs where the strength of batch of students is below 30.

#### R.1(B).13 Program Advisor:

A Program Advisor shall be appointed by the Head of the Department who shall advise the students for registration.

#### R. I(B).14 Course Coordinator:

Every course offered by a Department/School shall be coordinated by a Course Coordinator appointed by the Head of the Department/School. The Course Coordinator shall have full responsibility for the course. He/she shall coordinate the work of other faculty members involved in that course in respect of their participation in various activities related to the course including continuous evaluation of the students through tests, quizzes, assignments, mid-term and end-term examination and the award of the grades.

#### R. I(B).15 Course Evaluation:

- i. A student shall be evaluated for his/her academic performance in a course through tutorials, practicals, design studio work, homework, assignments, term papers, field work/industrial training, seminars, quizzes as CWS and PRS, MTE, ETE and PRE as specified in the Scheme of teaching and examination. The distribution of weightage/marks among various components of continuous evaluation is given in Annexure-II.
- ii. The distribution of weights for each component shall be announced by the course Coordinator at the beginning of the course, subject to such stipulations as are given in the Scheme of Teaching and Examination for a given program.
- iii. The courses offered in a semester shall be continuously assessed and evaluated to judge the performance of a student.
- iv. The criteria for continuous evaluation of any subject shall be declared in the very first week of commencement of the classes.
- v. Answer sheets of the test(s) and examination(s) cannot be written in pencil.
- vi. Evaluation of Answer sheet(s) should not be in pencil.
- vii. A student can see his/her answer sheet(s) of MTE and the ETE and point out any discrepancy in its evaluation on a day fixed by the Course Coordinator/Chairman, Grade Moderation Committee. Objections will be entertained right then, and not even on the next day.
- viii. The answer sheets be disposed off by the Examination Branch after preserving them for six months only, except those which have some pending matter.
- ix. The answer sheets of the End-Term Examination shall not be shown to a student after finalization of the grades by the Grade Moderation Committee.
- x. The industrial/field training shall normally be evaluated through the quality of work carried out, the report submission and presentation(s) as specified by the Department/ School from time to time. The project shall be evaluated normally by Mid-Term seminar(s), quality of work carried out, project report submitted and the vivavoce examination.

#### R. I(B).16 Conduction of Examination:

- (i) The examinations of various programs shall be conducted in a manner as prescribed and approved by AC.
- (ii) Mid -Term Examination will be conducted by course coordinator and the faculty members concern during the slot notified by the COE.
- (iii) While the paper is set, the Mid-Term Examination papers will not have any alternative, however 20-30% alternatives may be admissible in the End-Term Examination paper.
- (iv) The End-Term Examination will be conducted by the COE.
- (v) Evaluation process should be concluded within specified days from the end of the schedule of examination:
  - Mid-Term Examination One week
  - End-Term Examination Two weeks
- (vi) A notification of slot/date/venue be issued by concerned faculty member under intimation to COE for showing answer sheets to the students. Both Mid-Term & End-Term answer sheets should be shown to the students by the concerned faculty member(s)/Evaluator(s).
- (vii) Policy adopted by individual faculty member/ evaluator for evaluation of answer sheets should be uniform and consistent, and in case any moderation is done for the marks the same should uniformly be applied under intimation to CoE.

#### R. I(B).17 Grading System:

(I) The academic performance of a student shall be graded on a 10-point scale. For the award of grades in a course, all component-wise evaluation shall be done in marks. The marks of different components shall be reduced to relative weights of each component as per Scheme of teaching and Examinations and shall be added. Marks so

obtained shall be out of 100 and the same shall be converted to grades. However, the following criteria shall be applicable for passing a course.

| S.  |                                      | Rela | Relative Weights (as per scheme of teaching and examination) |     | Passing Criteria |             |   |                              |
|-----|--------------------------------------|------|--|-----|------------------|-------------|---|------------------------------|
| No. | Course Type                          | CWS  | PRS/<br>STS/<br>CMS  | MTE | ETE/<br>EME      | PRE/<br>STE | Evaluation Component                            | Minimum<br>Marks<br>Required |
|     | Theory<br>Course                     |      |  |     |                  |             | 1. (MTE) + (ETE/EME)                            | 26                           |
| 1   | (Without<br>Laboratory<br>Component) | 25   |  | 25  | 50               |             | 2. (CWS) + (MTE) + (ETE/EME)                    | 35                           |
|     | Theory<br>Course (With               |      |  |     |                  |             | 1. (MTE) + (ETE/EME)                            | 21                           |
| 2   | Laboratory Component)                | 15   | 25   | 20  | 40               |             | 2. (CWS) + (PRS/STS/CMS) + (MTE)<br>+ (ETE/EME) | 35                           |
|     | Practical                            |      | 50   |     |                  | 50          | 1. PRE  | 17                           |
| 3   | Course                               |      | 50   |     |                  | 50          | 2. (PRS/STS/CMS) + (PRS/STE)                    | 35                           |

(ii) The mean  $(\bar{x})$  and the standard deviation  $(\sigma)$  of marks obtained of all the students in a course shall be calculated and used to convert the marks obtained (m) by a student into grades. The structure of grading will be as given in **Table 4.** 

**Table 4: Structure for Grading of Academic Performance** 

| Letter grade       | Numerical<br>grade | Formula  | Computation of grade cut off   |
|--------------------|--------------------|--|--|
| O<br>(Outstanding) | 10                 | $m \ge \overline{x} + 1.5 \sigma$                                      | The value of $\overline{x}+1.5\sigma$ to be taken into account for grade computation. The grade cut off will be $\overline{x}+1.5\sigma$ or 91% whichever is lower         |
| A+<br>(Excellent)  | 9                  | $\overline{x} + 1.0 \sigma \le m < \overline{x} + 1.5 \sigma$          | The value of $\overline{x}+1.0\sigma$ to be taken into account for grade computation. The grade cut off will be $\overline{x}+1.0\sigma$ or 82% whichever is lower         |
| A (Very Good)      | 8                  | $\overline{x}+0.5 \sigma \le m < \overline{x}+1.0 \sigma$              | The value of $\overline{x}+0.5\sigma$ to be taken into account for grade computation. The grade cut off will be $\overline{x}+0.5\sigma$ or 73% whichever is lower         |
| B+<br>(Good)       | 7                  | $\overline{x}$ + 0.0 $\sigma$ $\leq$ m $< \overline{x}$ + 0.5 $\sigma$ | The value of $\overline{x}+0.0\sigma$ to be taken into account for grade computation. The grade cut off will be $\overline{x}+0.0\sigma$ or 64% whichever is lower         |
| B (Above average)  | 6                  | $\overline{x}$ -0.5 $\sigma \le m < \overline{x}$ +0.0 $\sigma$        | The value of $\overline{x}$ -0.5 $\sigma$ to be taken into account for grade computation. The grade cut off will be $\overline{x}$ -0.5 $\sigma$ or 55% whichever is lower |
| C<br>(Average)     | 5                  | $\overline{x}$ -1.0 $\sigma \le m < \overline{x}$ -0.5 $\sigma$        | The value of $\overline{x}$ -1.0 $\sigma$ to be taken into account for grade computation. The grade cut off will be $\overline{x}$ -1.0 $\sigma$ or 46% whichever is lower |
| P<br>(Pass)        | 4                  | $35 \le m < \overline{x} - 1.0 \sigma$                                 | The lower grade cut off will be 35%  |
| F<br>(Fail)        | 0                  | m < 35   | Less than 35%  |

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16

In those subjects, where the total number of students is upto 30, the results in Grades shall be prepared on the basis of the actual performance of the student in the percentage scale and not on the basis of the formula approved for computation of grades.

- (iii) The following are the general guidelines for the award of grades:
  - (a) All evaluations of different components of a course shall be done in marks for each student. The marks of various components shall be reduced to approve weights as given in Scheme of teaching and examination and added up to get total marks secured on a 100-Point scale. The rounding off shall be done only once and on the higher side.
  - (b) The method suggested in Table 4 shall be used for the award of grades with or without marginal adjustment for natural cut- offs.
  - (c) The provisional grades shall be awarded by the Coordination Committee of the course consisting of all the teachers involved in that course. The course coordinator shall have full responsibility for this purpose. The grades so awarded shall be moderated by grade moderation committee of the respective Department/School.
  - (d) For a student to get passing grade, he/she will have to appear in End-Term Examination.

#### (iv) The award of 'F' Grade

- a) The 'F' grades denote poor performance, i.e. failing course. 'F' grade is also awarded in case of poor attendance (see attendance Rules). 'F' grade secured in any course stays permanently on the grade card. The weight of 'F' grade is not counted in the calculation of the CGPA however, it is counted in the calculation of the SGPA.
- b) In case a student is awarded 'F' Grade in a Core paper, the student has to repeat the course either in the summer semester or in subsequent semester, when it is offered.
  - The students having 'F' grade in a subject in either or both odd and even semesters, at the end of current Academic Year shall be allowed to register for summer semester. This provision shall also be applicable to those students who have been detained from appearing in final examinations due to shortage of attendance/ whose results have not been declared due to their involvement in use of unfair means during the examinations. The detailed guidelines for summer semester are given in **Annexure-III**.
- c) In case a student is awarded 'F' grade in an Elective paper, the student may take the same course or any other course from the same category in the subsequent semester.
- d) In case a student is awarded a failing grade in the major / minor project, he/she shall have to repeat the course in the form of a new project. Such a student will have to work full time on the project for a minimum period of four months.

#### (v) The award of 'I' grade

This refers to an 'incomplete' grade which is required to be converted into a regular letter grade. The guidelines for the award of 'I' grade is as follows:

- a) If a student is absent during End-Term Examination of a course due to medical reasons or other special circumstances, he / she may apply for the award of 'I' grade to the COE through the Course Coordinator, provided that he / she has not been disqualified due to shortage of attendance. The concerned course coordinator shall have to be convinced about the extraordinary circumstances and shall have to certify the attendance record before this rarely used option to award 'I' grade is recommended.
- b) The 'I' grade so awarded shall be notified by the COE.
- c) The 'I' grade shall be converted into a proper letter grade and shall be sent to the COE after make-up examination is over and the requirements of the course are completed by the student.
- d) In extra ordinary circumstances, the period of conversion of 'I' grade may be extended to the next semester, with the approval of the Dean (UG)/Dean (PG) on his own or on the recommendation of the Course Coordinator and the Head of the Department(s)/School(s).
- e) In extra-ordinary circumstances, on the recommendation of the Dean (UG)/ Dean (PG), the Vice-Chancellor

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may order the award of 'I' grade to a student/ class or a batch of students taking a particular course. The conversion of 'I' grade into a regular grade or any other action shall be as per the approval of the Vice-Chancellor.

(vi) The letter grades awarded to a student in all the courses shall be converted into a semester and cumulative performance index called the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA), to be calculated as given below:

$$S.\,G.\,P.\,A = \frac{\sum_{i=1}^{n} Ci \, x \, Pi}{\sum_{i=1}^{n} Ci}$$

where,

Ci=Number of Credits of the ith course of a semester for which SGPA is to be calculated

Pi=Grade Point obtained in ith course.

 $i=1,\ldots,n$ , represent the number of course in which a student is registered in the concerned semester.

C. G. P. A = 
$$\frac{\sum_{i=1}^{m} \text{Ci x Pi}}{\sum_{i=1}^{m} \text{Ci}}$$

where,

- Ci = Number of Credits of the ith course of a semester. iP = Grade Point obtained in ith course. A grade lower than 'P' (i.e. grade point < 4) in a course shall not be taken into account.
- *i*=1, m, represent the number of courses in which a student was registered and obtained a grade not lower than 'P' upto that semester for which CGPA is to be calculated.
- (iv) At the end of the program, a student with CGPA of 8.0 and above shall be awarded 'First Division with Distinction' and a student with CGPA between 6.0 and 8.0 shall be awarded "First Division".
- (v) All the passing out students of a class shall be given ranks as "Rank XXX in a class of YYY Students".

#### R. I(B).18 Grade Moderation Committee:

The BoS of academic department(s)/School(s) will constitute the Grade Moderation Committee for all the Academic Courses under its purview. The Head of the Department/School shall be the Chairman of the committee, and other members shall consist of two Professors, two Associate Professors and two Assistant Professors of the department. This committee shall be responsible for adherence to the guidelines for the award of grades and shall include all the concerned Course Coordinators. The Chairman, Grade Moderation Committee shall be responsible for the display of grades in the department and for forwarding the final grades to the COE. The Chairman, Grade Moderation Committees shall also send the record-copies of the marks and the grades along with the statistical parameters for all the courses moderated to the COE. One copy of distribution of marks shall be sent to the COE along with grades by the Chairman, Grade Moderation Committee. The general guidelines for the moderation of grades are as follows:

- a) The date of moderation shall be made a part of the Academic Calendar of the University.
- b) Two-tier moderation be adopted, both for the subject and for the Semester (SGPA, CGPA), Minor adjustment shall be possible during moderation, particularly in the marginal cases. The Chairman, Grade moderation committee shall invariable retain a copy of the grades sent to Examination Section so that CGPAs may be calculated without having to make a reference to the Examination Section for this purpose.
- c) All concerned faculty members should invariably be present for the moderation committee meeting. In case a faculty member is going out on University duty, he/she shall hand over his/her inputs for moderation with a colleague, who shall present it, in the meeting.

#### R. I(B).19 Scrutiny of Grades, Tabulation and Declaration of Results:

(i) A student may apply for scrutiny of grades to the Head of the Department/School, within three days from the date of display of grades. The Grade Moderation Committee and the Course Coordinator may check the entry of the weights from different components of evaluation and their addition. The results of scrutiny may lead to either a

18

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change in grade due to mistake(s) in any of the aspects scrutinized by the committee or the grade may remain unchanged. The results will be intimated to the COE within three days from the date of receiving the application in the department/school as per academic calendar.

- (ii) In exceptional circumstances the grade(s) of a student or a number of students may be scrutinized by a committee constituted by the VC.
- (iii) The COE shall organize the tabulation of grades and declaration of results. COE shall be the custodian of records related to examinations and results.

#### R. I(B).20 Earned Minimum Credits and Minimum CGPA for the Degree:

The credits for the courses in which a student has obtained 'P' (minimum passing grade for a course) grade or higher shall be counted as Credit Earned by him/her. A student, who has earned the required number of credits as specified in the curriculum he/she is registered for, is eligible for the award of the respective degree.

#### R. I(B).21 Unfair Means

In case a student is found adopting or suspected of adopting unfair means before, during or after the examination, or lifting or copying of work(s) of someone else and inserting it in his class work submissions, Project, Dissertation etc. without proper acknowledgement, credit and reference, such penal action shall be taken by the University against the student as may be necessary and adequate to uphold the sanctity and integrity of the examination system and the credibility of the University. The instruction for penalty for use of unfair means shall be prescribed at **Annexure-IV**.

All the cases regarding use of unfair means practices in the examinations shall be reported and placed before the "Unfair Means Scrutiny Committee". The composition of the Unfair Means Scrutiny Committee shall be as follows: Dean (UG) (Chairperson), Dean (PG), DSW, Head of the concerned Department/School, Associate Dean/DR Academic (UG), Associate Dean/DR Academic (PG) (Members) and COE (Convener).

The COE shall convene the meeting of Unfair Means Scrutiny Committee from time to time as per requirement.

#### R. I(B).22 Attendance, Absence, Leave and Withdrawals:

- (I) All the students of UG/PG programs are expected to attend every lecture, tutorial, practical or design studio class scheduled for them.
- (ii) The students of IJG/ PG program must have a minimum attendance of 75% of the total number of classes including lectures, tutorials and practicals, held in a subject in order to be eligible to appear at the End-Term Examination for that subject.
- (iii) The Dean (UG)/ Dean (PG), authorized by the Vice Chancellor for this purpose may relax the minimum attendance upto 10% for reasons to be recorded. This relaxation may be granted on production of documents showing that the student was either busy in the authorized activities or suffering from any disease. The student should submit these documents to the Dean (UG)/ Dean (PG) through Chairman, BOS within seven days of resuming the studies.
- (iv) Under exceptional circumstances, the Vice Chancellor may further relax the minimum attendance upto 5%.
- (v) Attendance of the students shall be monitored and displayed during a semester as per the guidelines issued by the Dean (UG)/Dean (PG).

#### R. I(B).23 Make-up Examinations on Medical/Extra Ordinary Ground:

Students who have missed the Mid-Term Examinations and/or End-Term Examinations of a course(s) due to medical reasons or other special circumstance may be considered for a Make-up Examination on the clear cut recommendations of HOD considering the merit of the case. In case of End-Term Examinations Make-up Examinations will be allowed only if a student has not been disqualified earlier, due to shortage of attendance. The student shall make an application to the HOD, within ten working days from the date of the examination missed, explaining the reasons for his/her absence. Applications received after this period will not be entertained. The HOD shall forward all applications with his/her recommendations to COE who in turn shall seek approval from Dean (UG)/ Dean (PG). Further, there will be no make-up of the Make-up Examinations.

#### R. I(B).24 Withdrawal

#### (a) Withdrawal from Course

A student who wants to withdraw from a course shall apply through the HOD to the COE within one week from the end of the Mid-Term Examination under the advice of his/her Program Advisor. If his/her request for withdrawal is granted, it will be recorded in the registration record of the student and the concerned Course Coordinator will be informed about it. The student will be awarded a withdrawal grade at the end of the semester.

#### (b) Semester Withdrawal:

In case a student is unable to attend classes for more than four weeks in a semester he/she may apply to the COE through HOD, for withdrawal from the semester, which shall mean withdrawal from all the registered courses in the semester. However, such application shall be made under the advice of the Program Advisor, as early as possible and latest before the start of the End-Term Examination. Partial withdrawal from the semester shall not be allowed.

#### R. I(B).25 Termination of Enrolment:

#### (i) Due to Absence:

If a student registered in the first year of the program is continuously absent from the classes for more than four weeks without informing the Course Coordinators, the Coordinator shall immediately bring it to the notice of HOD of the concerned department/ school for informing the COE. The names of such students shall be removed from the University rolls and such absence during first year will render the student ineligible for re-admission.

#### (ii) On Academic Grounds:

- a) The enrolment of a student in a program shall stand terminated if he/she fails to earn 30% of prescribed credits in first year, as specified in the Scheme of teaching and examinations, at the end of first year.
- b) The enrolment of a student shall stand cancelled on completion of maximum duration from the date of initial registration in the program.
- c) A student whose enrolment has been terminated may appeal to the Vice Chancellor for reconsideration within fifteen days from the date of issuance of the communication of termination. If the appeal is allowed, his/her registration and enrolment shall be restored.

#### R. I(B).26 Scholarship, Prizes, Medals and Merit Certificate:

- (I) The University shall award the merit-cum-means (MCM) scholarships, University free studentship, SC/ST category University scholarship and other scholarships, award and prizes to the student of UG programs as may be approved by the AC/BoM. Other scholarships may be awarded by the University from the grant from individuals, trusts, organizations and the Governments with a view to provide financial assistance to needy students under the terms and conditions specified by the University. Announcements on these scholarships stating eligibility and the value of scholarships etc. shall be made by the University while inviting applications from time to time.
- (ii) Those students, who have been punished for unfair means during MTE or ETE or in Seminars/project/etc. or for serious act of indiscipline shall not be awarded Merit-cum-Means Scholarship and other trust scholarship or Medals, Prizes and awards for that academic session only.
- (iii) Student may draw scholarships from outside sources only if permitted by Dean (UG)/ Dean (PG).

#### R. I(B).27 Phasing out of a Program:

The phasing out of a program may be considered by the AC on the recommendation of the BOS. Also, a program may be phased out by the AC if, consecutively for three years, the number of students registering for the program is less than 40% of the sanctioned intake of the students.

#### R. I(B).28 Interpretation of Regulations:

In case of any dispute, difference of opinion in interpretation of these Regulations or any other matter not covered in these Regulations, the decision of the Chairman, AC shall be final and binding.

#### R. I(B).29 Emergent Cases:

Notwithstanding anything contained in the above Regulations, the Chairman of the AC may, in emergent situation, take such action including insertion, suspension or modification of any Regulation(s) on behalf of the AC as he/she deems appropriate and report it to the next meeting of the AC for its approval.

Annexure-I

Guidelines for semester away program for course work/project work involving mobility of DTU students (UG/PG/PhD).

#### Program wise Eligibility:

| UG programs of 4 Year duration | <ul> <li>(i) Complete 4 Semester stay at DTU</li> <li>(ii) CGPA ≥ 7.0 (At the time of application) without any backlog</li> <li>(iii) No Disciplinary Action initiated OR should not be within the Disciplinary Action period.</li> </ul> |
|--------------------------------|---|
| UG programs of 3 Year duration | <ul> <li>(i) Complete 2 Semester stay at DTU</li> <li>(ii) CGPA ≥ 7.0 (At the time of application) without any backlog</li> <li>(iii) No Disciplinary Action initiated OR should not be within the Disciplinary Action period.</li> </ul> |
| PG programs of 2 Year duration | <ul> <li>(i) Complete 2 Semester stay at DTU</li> <li>(ii) CGPA ≥ 7.0 (At the time of application) without any backlog</li> <li>(iii) No Disciplinary Action initiated OR should not be within the Disciplinary Action period.</li> </ul> |

#### **Selection of Host Institution:**

Dean International Affairs (IA) DTU will be the nodal officer for selection of the host institution with the approval of Vice Chancellor.

#### Subject Selection:

- i. Students shall be allowed to register equivalent credits ranging over 8-20 (upper and lower limits)
- ii. Student shall prepare a table showing subjects to be registered in the host institution and their equivalent subjects at Delhi Technological University. Subjects at host institution can be selected against elective courses (DEC/GEC/OEC). The above Table must also list the remaining subjects of the curriculum, belonging to the semester planned under the program, along with a timeline plan for completing these remaining subjects.
- iii. Students shall register the courses in semester away program against the quota of courses from Department Electives, General Electives and Open Electives. All the core courses should be completed within their prescribed schedule at Delhi Technological University.
- iv. The equivalent subjects may be chosen from the subject list belonging to the semester planned for mobility under the program as well as to the subsequent semester of the Academic Curriculum being followed at Delhi Technological University, without violating the prerequisite condition.

#### **Financial Support:**

DTU shall not provide any financial support for the Program. Student shall have to obtain a letter of Financial Support for the Program from Parents/Funding Agency.

**Procedure:** A Student shall submit the application to the office of Dean International Affairs (IA) in the prescribed format available on Delhi Technological University website along with all the attachments.

- i. Application Deadline: 31st July for Even Semester and 31st January for Odd Semester.
- ii. Further details of the procedure may be
- iii. Dean IA will send the application to respective HoD of the departments to evaluate the courses, their equivalence and other parts of the application. The HoD may appoint a faculty coordinator for this purpose.
- iv. Dean IA will call the meeting of the Equivalence Committee to consider the applications and make recommendation.

The Equivalence Committee shall consist of

(a) Pro VC or Dean nominated by the Vice Chancellor

- (b) Dean (IA) Member Secretary
- (c) Dean UG
- (d) Dean PG
- (e) HoD of the concerned Department

The Equivalence committee shall also decide the credit which shall be credited to students on successful completion of semester abroad.

- v. Office of International Affairs will extend the support to:
- (a) Help student in formal application process.
- (b) Help in identifying a mentor in the Host Institution
- (c) Communicate and finalize the process of grade submission by the Host Institution and
- (d) May issue "No Objection Certificate (NOC)" for Visa Application.
- vi. On acceptance by the Host institution, student will formally informed by the Office of International Affairs about the exact date of the commencement of the program.
- vii. Dean IA will report the cases to the academic council.
- viii. While at the Host institution, the student will inform the Dean IA of any deviation from the approved subject list, and get the changes approved by Dean IA. Dean IA may refer the matter to Equivalence Committee, if needed.
- ix. Remain in touch with the Mentor at the Host institution.
- x. Adhere to the approved schedule for reporting back to DTU.

For doing project/research work at a Host institution the onus of finding a guide rests with the student. It also needs the concurrence of the project guide at DTU if they wish to submit their work done abroad towards their degree and get credits for it. Miscellaneous

| Special Selection Criteria | In the cases where MoU between DTU and the Host Institution limits the number of applications, the decision will be based on the CGPA. i.e the applicant with a higher CGPA will be given preference.  |  |
|----------------------------|--|--|
| Tuition Fee                | <ul> <li>a) The student has to pay Full Fee here at DTU only if she/he is travelling to a Host Institution with which DTU has a MoU, under which the tuition fee is waived/subsidized at the Host Institution.</li> <li>b) The student has to pay 50% of the tuition fee (for that semester) in addition to other components of fees here at DTU if the student</li> </ul> |  |
|                            | pays Tuition Fee at the MoU/Non-MoU Host Institution. A payment certificate from the Host Institution will be needed for the purpose of claiming the reimbursement of the said 50% tuition fee.  |  |
| Hostel and Mess Fee at DTU | <ul><li>a) The student need to pay Hotel Charges for the period of absence from DTU provided he/she is allowed to retain the hostel room.</li><li>b) The student need not pay Mess Charges for the period of absence from DTU.</li></ul>   |  |

#### For M.Tech students with AICTE/other fellowship(s):

The student may continue to draw AICTE/other fellowship if the stay is not fully funded by the Host Institute/Funding Agency.

#### Generic Scheme of Evaluation for the course of all Programme

|           |                           | Course Type   |   |  | Examination |           | Relative Weights |                  |     |                     |                     |
|-----------|---------------------------|---|---|--|-------------|-----------|------------------|------------------|-----|---------------------|---------------------|
| S.<br>No. | Cours<br>e<br>Credit<br>s | L   | Т   | P/ST   | ТН          | PR/<br>ST | CWS              | PRS / STS / CM S | МТЕ | ET<br>E/<br>EM<br>E | PRE<br>/<br>ST<br>E |
| 1.        | 2                         | 2   | 0   | 0  |             |           |                  |                  |     |                     |                     |
| 2.        | 3                         | 3   | 0   | 0  |             |           |                  |                  |     |                     |                     |
| 3.        | 3                         | 2   | 1   | 0  | Yes         | No        | 25               |                  | 25  | 50                  |                     |
| 4.        | 4                         | 4   | 0   | 0  | 1 03        |           |                  |                  |     |                     |                     |
| 5.        | 4                         | 3   | 1   | 0  |             |           |                  |                  |     |                     |                     |
| 6.        | 6                         | 5   | 1   | 0  |             |           |                  |                  |     |                     |                     |
| 7.        | 2                         | 1   | 0   | 2  |             |           |                  |                  |     |                     |                     |
| 8.        | 4                         | 3   | 0   | 2  |             |           |                  |                  |     |                     |                     |
| 9.        | 4                         | 2   | 1   | 2  | Yes         | No        | 15               | 25               | 20  | 40                  |                     |
| 10.       | 4                         | 2   | 0   | 4  |             |           |                  |                  |     |                     |                     |
| 11.       | 4                         | 1   | 0   | 6  |             |           |                  |                  |     |                     |                     |
| 12.       | 4                         | 0   | 1   | 6  |             |           |                  |                  |     |                     |                     |
| 13.       | 2                         | 0   | 0   | 3  |             |           |                  |                  |     |                     |                     |
| 14.       | 2                         | 0   | 0   | 4  |             |           |                  |                  |     |                     |                     |
| 15.       | 3                         | 1   | 0   | 4  | No          | Yes       |                  | 50               |     |                     | 50                  |
| 16.       | 3                         | 0   | 0   | 6  |             |           |                  |                  |     |                     |                     |
| 17.       | 4                         | 0   | 1   | 6  |             |           |                  |                  |     |                     |                     |
| 18.       | 2                         | 1   | 1   | 0  | Yes         | No        |                  | 50               |     | 50                  |                     |
| 19.       | 2                         | 1   | 0   | 2  | 1 65        | 110       |                  | 30               |     | 30                  |                     |
| 20.       | 2/4/6/8/16                | Minor Project/ Major<br>Project/<br>Design Project/<br>Thesis/ Dissertation |   |  |             |           |                  |                  |     |                     |                     |
| 21.       | 2/3/4/5                   | Indu<br>Co<br>Viva<br>Do<br>S<br>Work                                       | mer Inter<br>strial Tra<br>Seminar<br>ompreher<br>/ Term P<br>esign De<br>Show/ Sk<br>ashop/ Ca<br>oject/ Ac<br>Learnin | nining/ r/ nsive Project/ gree still apstone | No          | Yes       |                  | 40               |     |                     | 60                  |
| 22.       | 4                         | 0   | 1<br>Jury   | 6  |             |           |                  |                  |     |                     |                     |

#### **Detailed guidelines for Summer Semester**

- 1. A student will be allowed to register a maximum of 16 credits inclusive of odd and even semester courses.
- 2. Only common courses (First year), departmental core courses (DCC) and allied engineering courses (AEC) will be offered in summer semester.
- 3. The duration of the summer semester will be 45 days. Each course will be given contact hours (LTP) as prescribed in syllabus for that course.
- 4. Regular class room teaching will be conducted only for those courses where minimum number of registered students is 5% of approved intake or 15 whichever is less.
- 5. Examinations will be conducted as per summer semester calendar.
- 6. A student will be allowed to appear in the end semester examinations of summer semester, for the course(s) registered, only if s/he fulfils the attendance criterion for appearing in examination as per regulation R.1(B).22 sufficient percentage of attendance.
- 7. Registration cum examination fee will be Rs. (5000/- + 500/-) per course. Students will be allowed to register for courses only after depositing the requisite fee.
- 8. Registration in summer semester course(s) will be offered only w.e.f AY 2020-21 batches and the provision of supplementary exam will be dropped.
- 9. Power to remove difficulties: If any difficulty arises in giving effect to the provisions of these guidelines, the Vice Chancellor may, make such provisions, not inconsistent with the provisions in these guidelines, as appear to be necessary or expedient for removing the difficulty

Annexure - IV

#### **Instruction for Penalty for Use of Unfair Means**

- 1. The main instruction for the conduct of a student in the examination hall shall be printed on the cover page of the answer sheets. Any contravention of these instructions and the use anyunfair means will render the student liable for punishment.
- 2. As soon as student is suspected by the invigilator having resorted to unfair means, his/her answer-book shall be seized. The paper etc. duly signed by the invigilator found in possession of the student shall be attached with answer-book in his/her present. The student shall then be asked to complete Part II of the prescribed form and sign it. This form shall than be endorsed by the Invigilator.
- 3. After completing all the above formalities, a fresh answer-book shall be given to the student for completing the examination.
- 4. After a particular examination is over, these answer-books (duly marked I, II) shall or delivered separately to the COE together with the report form duly completed in all respects.
- 5. All the cases reported in the category of unfair means shall be forwarded to the unfair means scrutiny committee which will inquire into them and submit its recommendation after laying down clearly the nature of the offence listed below to the Vice-Chancellor for consideration and necessary orders.
- 6. The action as given in table may be taken for different categories of offense under these Regulations.

#### **Penalty for use of Unfair Means**

| CATEGO<br>RY | NATURE OF<br>ACT   | PUNISHMENT TO<br>BE IMPOSED   |
|--------------|--|---|
| I            | <ul> <li>Found talking to another student during the examination hours.</li> <li>Found talking to a person outside the examination hall.</li> <li>Changing seat in the examination hall without permission.</li> <li>Committing any breach of any direction given to the student.</li> <li>Attempt to influence the examiner by an appeal in the answer-</li> </ul>  | Warning with undertaking by the Student that S/he will not repeat such act during entire duration of the programme.   |
|              | <ul><li>book.</li><li>Writing either the questions or solutions thereof on the question paper.</li></ul>   |   |
|              | <ul> <li>Possession of cell phone or any other item of such type of communication in examination hall.</li> <li>Intentionally tearing off the answer Book/a part thereof or a continuation sheet.</li> <li>Misbehaving with the Superintendent / Invigilator/staff on duty or with any other candidate in or around the Examination Centre before, during or after the examination.</li> </ul>   | Mid Term Examination  The Examination of the concerned paper to be cancelled and to be awarded ZERO marks in the concerned paper.   |
| II           | <ul> <li>Leaving the examination room without the permission or without handing over the answer book or without signing the attendance sheet.</li> <li>Found in possession of any written or Xerox notes or any printed materials or notes written on any part of the body/clothing or instruments or electronic device etc. or having notes written on University Furniture or drawing board or cover of the calculator etc which could be helpful to him/her in answering the paper or could be helpful to another candidate in that Examination Hall.</li> <li>Using abusive or obscene language in the answer book.</li> <li>Copying or copied from any paper, book or note written on any part of his/her clothing or body or Furniture or instruments or Mobile phone or any other Electronic gadgets etc.</li> <li>Consulting notes or books while being outside the examination hall during examination hours.</li> <li>Allowed any other candidate to copy from his/her answer-book.</li> </ul> | End Term Examination  The Examination of the concerned paper to be cancelled and to be awarded 'F' grade.  The student shall be allowed to reregister for the cancelled paper in next academic year only. |

| III | <ul> <li>Smuggling in an answer-book or part of it, taking out or arranging to send out an answer-book or part of it.</li> <li>Communicating or attempting to communicate directly or through someone else with the examiner or anybody connected with the University examination for influencing them regarding the award of marks.</li> <li>Replacing his / her answer book or any page or continuation sheet with any other unauthorized book, page or continuation sheet during the course of examination.</li> <li>Found in possession of an answer- book of some other student</li> </ul>          | Mid Term Examination  All the papers of the Mid Term Exam to be cancelled and to be awarded ZERO marks in all the papers.   |
|-----|--|---|
|     | <ul> <li>On being challenged /searched by the Superintendent, Invigilator or a staff on duty, swallows a note/ paper or runs with it or is guilty of causing disappearance or destroying any such material possessed by him/her.</li> <li>Guilty of Writing deliberately another students' roll no. in his/her answer book.</li> </ul>   | End Term Ex amination  All the papers of the End Term Exam to be cancelled and to be awarded 'F' grade in all the papers & shall re-register for all papers in next academic year only.   |
| IV  | <ul> <li>Gross misbehavior i.e. threatening with physical force to Superintendent, the Invigilator/ staff on duty working at the Examination Centre with any other candidate in or around the Examination Centre, before, during or after the Examination.</li> <li>Disturbs the examination or attempts to do so</li> <li>Impersonating for any other candidate in any examinations</li> <li>Student is accused of Impersonation i.e. he /she managed to send somebody else in his / her place to take the examination.</li> <li>Found guilty of serious misconduct in the examination hall.</li> </ul> | All examinations of that Semester to be cancelled.  The Student is not allowed to register in the immediate succeeding semester.  The student shall register for the cancelled semester in the next academic year only.  e.g. if a student is booked for UFM in 3rd semester  • All papers of 3rd semester to be cancelled.  • S/he can not register for 4th semester.  • S/he shall re-register for 3rd semester in the next academic year only. |
| V   | Cases not covered under Category I to Category IV.   | To be decided by the Vice Chancellor on the recommendation of UFMSC   |

#### Note:

- (a) These Rules shall be applicable w.e.f. the date of notification to all the students of the University irrespective of the year of admission to which he/she belongs.
- (b) In these Regulations the year means the academic year
- © In case of extenuating circumstances, the above punishment may be reduced by the Vice Chancellor depending upon the merits of the case.
- (d) If student repeats any of the act as prescribed in various categories the act, the level of punishment may be raised to next level.

# **Annexure 1A**

**Curriculum Scheme of B. Tech. Programmes** 

#### **Preamble**

The University offers B.Tech. programs leading to Bachelor of Technology degree in 17 disciplines (Table-1A.1). The Academic Departments offer courses to the students of various disciplines. Academic curricula are so devised that a student of one discipline can take some courses of other disciplines offering choice based credit system (CBCS). Such flexibility helps a student to develop his core competence together with the interdisciplinary skills in the area of his/her interest.

Table-1 A.1 B.Tech. Programs

| Table-1 A.1 D. Tech. 1 Tograms |  |   |      |  |  |  |
|--------------------------------|--|---|------|--|--|--|
| S. No.                         | Department                                   | Academic Program  | Code |  |  |  |
| 1.                             | Applied Chemistry                            | B. Tech. Chemical Engineering   | СН   |  |  |  |
| 2.                             | Applied Mathematics                          | B. Tech. Mathematics and Computing  | MC   |  |  |  |
| 3.                             | Applied Physics                              | B. Tech. Engineering Physics  | EP   |  |  |  |
| 4.                             | Biotechnology                                | B. Tech. Biotechnology  | BT   |  |  |  |
| 5.                             | Civil Engineering                            | B. Tech. Civil Engineering  | CE   |  |  |  |
| 6.                             | Computer Science & Engineering               | B. Tech. Computer Science and Engineering                                     | CS   |  |  |  |
| 7.                             | Computer Science & Engineering               | B. Tech. Computer Science and Engineering (Data Science and Analytics)        | DA   |  |  |  |
| 8.                             | Electrical Engineering                       | B. Tech. Electrical Engineering   | EE   |  |  |  |
| 9.                             | Electronics and Communication<br>Engineering | B. Tech. Electronics and Communication Engineering                            | EC   |  |  |  |
| 10.                            | Electronics and Communication<br>Engineering | B. Tech. Electronics Engineering (VLSI Design and Technology)                 | VL   |  |  |  |
| 11.                            | Environmental Engineering                    | B. Tech. Environmental Engineering  | EN   |  |  |  |
| 12.                            | Information Technology                       | B. Tech. Information Technology (Cyber Security                               | CY   |  |  |  |
| 13.                            | Information Technology                       | B. Tech. Information Technology   | IT   |  |  |  |
| 14.                            | Mechanical Engineering                       | B. Tech. Mechanical Engineering   | ME   |  |  |  |
| 15.                            | Mechanical Engineering                       | B. Tech. Mechanical Engineering with specialization in Automotive Engineering | AE   |  |  |  |
| 16.                            | Mechanical Engineering                       | B. Tech. Production and Industrial Engineering                                | PE   |  |  |  |
| 17.                            | Software Engineering                         | B. Tech. Software Engineering   | SE   |  |  |  |
|                                |  |   |      |  |  |  |

#### Structure of four year B. Tech. program

The four year B. Tech. program compromises of courses divided in eight distinct areas, namely: Basic Sciences (BSC), Engineering Science (ESC), Departmental Core (DCC), Departmental Elective (DEC), Generic Elective (GEC), Ability Enhancement (AEC), Skill Enhancement (SEC) and value Addition Courses (VAC).

#### **Basic Sciences and Mathematics Courses (BSC)**

The Basic Sciences and Mathematics Courses consist of courses considered essential for a B.Tech. program to build the

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foundation for learning of engineering core courses.

#### **Engineering Science Courses (ESC)**

The students are required to complete a minimum number of engineering science courses offered by engineering departments other than his/her parent department. These courses expose the student with wide spectrum knowledge of allied engineering domain connected to the main engineering stream of the course of study of the students of concerned departments.

#### **Discipline Specific Core Courses (DCC)**

The departmental core consists of mandatory courses considered essential for a chosen engineering/science discipline including, engineering design, seminar, industrial training and project. The industrial training of duration 6-10 weeks shall be undertaken by every student in the summer vacation after sixth semester.

#### **Skill Enhancement Courses (SEC)**

Skill Enhancement Courses (SEC) are skill-based courses in all disciplines and are aimed at imparting hands-on-training, competencies, skills, etc to enhance the employability of the students.

#### **Elective Courses**

The students are required to complete a specific number of elective courses. Every department offers a wide variety of elective courses to students providing them opportunity to discover their academic interest and enhance their engagement in learning process. The elective courses are categorized as Departmental Elective Courses (DEC), Generic Elective Courses (GEC), Ability Enhancement Courses and Value Addition courses (VAC).

#### **Discipline Specific Elective Courses (DEC)**

A wide range of elective courses is available with each program. When a student opts elective courses offered in his/her program it will be termed as DEC.

#### **Generic Elective Courses (GEC)**

When student of a particular branch opts for a DEC/DCCs being offered by other departments this elective will be termed as Generic elective (GEC) for him/her.

To promote research, innovation and entrepreneurship among the undergraduate students three different tracks in elective courses are also offered namely (a) Research Project (b) Mini Project (c) Entrepreneurship and venture development.

#### Research Project (Elective)

A Student may register for the Research Project Elective Course of 04 credits in Fifth Semester against a DEC/GEC. The idea of this course is to develop analytical skills and critical thinking among the students. The outcome of the research would be considered for the award of credits based upon published work in journals as listed in details Guidelines. On successful completion of Research Project (Elective) a student shall be eligible for direct admission to Ph.D program after obtaining B.Tech degree provided he/she fulfils all the conditions outlined in notification no.F...105/Acad-PG/Admission/2020-21IRD/2818(A) regarding direct admission to Ph.D program for DTU full time B.Tech students.

#### Mini Project (Elective)

The aim of the mini project is to enable the students to apply knowledge to address real-world situations problems and find their solution. A student may register for a mini project elective in the fifth semester against DEC/GEC courses. The students will be required to produce and present a working prototype at the end of the course.

#### **Entrepreneurship and venture development (Elective)**

The aim of the entrepreneurship and venture development track is to help students to build-up entrepreneurial skill and encourage the startup culture in the University. A student may register for this elective in fifth semester against a DEC/GEC.

#### **Ability Enhancement Courses (AEC)**

The AECs aim at enabling the students to acquire linguistic skills including critical reading and expository and academic writing skills with special emphasis on communication skills. These courses emphasize on the development and enhancement of skills such as communication, ability to participate/conduct discussion and debate.

#### Value Addition Courses (VAC)

The VACs are value based courses which are meant to inculcate ethics, culture, constitution values, soft skill, sports education, environment Science/education and such similar values which will help in all round development of students.

#### **Course Coding**

A course is identified by a course code designated by a string of alpha-numeric characters and a course title. In a course code, first two letters of the string indicate the Academic Department/Program code offering the course and the last three numbers designate particular course.

#### Course Number

For all the courses, the first digit corresponds to the level (year) at which a course is normally offered. The last two digits denote the number of the course, which will usually be odd for courses offered in the Odd Semester and even for courses in the Even Semester. For example, the course, "Circuit and Field Theory", offered to Electrical Engineering students in second semester Even Semester is numbered as EE102.

#### **Teaching Engagements**

Every course maintains a teaching schedule for which weekly contact hours are decided for delivering lectures (L), engaging tutorials (T) and/or performing practicals(P) to make learning in a course more effective. In the syllabi, the information regarding number of course credits and contact hours per week is denoted as: Credits (L-T-P); 4(3-1-0).

**UG certificate**: Students who opt to exit after completion of the first year and have secured 40 credits will be awarded a UG certificate if, in addition, they earn 6 credits through 2 months summer internship/ITI level courses/skill based courses during the summer vacation of the first year. Also, these students will be allowed to re-enter the degree programme within three years and complete the degree programme within the stipulated maximum period of seven years, subject to the condition that the concerned student will be allowed to exit and re-enter the degree program only once. Further, only students of DTU are allowed to re-enter the degree programme within the stipulated period.

Credits assigned to various components of the B. Tech curriculum are given in Table-1A.2 and the broad structure of the program is given in Table -1A.3.

Table - 1A. 2 Credits of Different Curricular Components

| S.No. | Category  | Credit Breakup |
|-------|---|----------------|
| 1     | Humanities and Social Sciences including Management courses (AEC/ VAC/SEC)              | 18             |
| 2     | Basic Science courses (BSC)   | 16             |
| 3     | Engineering Science courses (ESC)   | 20             |
| 4     | Discipline Specific core courses (DCC)  | 56             |
| 5     | Discipline Specific Elective courses (DEC)  | 24             |
| 6     | Generic Elective Courses (GEC) (Electives from other technical and / or emerging areas) | 16             |
| 7     | Project work, seminar and internship (DCC)  | 14             |
| 8     | Mandatory Community Engagement Course   | 02             |
| 9     | Mandatory non-Credit Courses: (Induction Program, Essence of Indian Knowledge system)   | non-credit     |
|       | Total   | 166            |

Table - 1A.3 Course Curriculum Scheme for B. Tech. Program

First Semester

Student Induction Program (SIP)

An SIP of two weeks at the start of first semester, to prepare newly admitted undergraduate for the new stage of their life by facilitating a smooth transition from their home and school environment into the university environment, is mandatory for all the students.

| S.No. | Subject                            | Credits | Category |
|-------|------------------------------------|---------|----------|
| 1.    | Mathematics-I                      | 4       | BSC      |
| 2.    | Physics / Programming Fundamentals | 4       | BSC/ESC  |
| 3.    | Interdisciplinary Core Course -1*  | 4       | BSC/ESC  |
| 4.    | Interdisciplinary Core Course –2*  | 4       | BSC/ESC  |
| 5.    | SEC-1(Branch Specific)             | 2       | SEC      |
| 6.    | AEC-1/ VAC-1                       | 2       | AEC      |
|       | Total                              | 20      |          |
|       | Second Semester                    |         |          |
|       | Subject                            | Credits | Category |
| 1.    | Mathematics-II                     | 4       | BSC      |
| 2.    | Programming Fundamentals/ Physics  | 4       | ESC/BSC  |
| 3.    | Interdisciplinary Core Course -3   | 4       | BSC/ESC  |
| 4.    | Departmental core Course 1         | 4       | BSC/ESC  |
| 5.    | SEC-2 (Branch Specific)            | 2       | SEC      |
| 6.    | AEC-2/VAC-2                        | 2       | AEC      |
|       | Total                              | 20      |          |

Interdisciplinary Core Courses 1 and 2 shall be allocated from a common pool of Interdisciplinary BSC/ESC Courses. Interdisciplinary Core Courses 1 and 2 in BSC/ESC pool shall be considered equivalent for the purpose of credit completion requirement for award of degree.

|       | Third Semester                     |         |           |
|-------|------------------------------------|---------|-----------|
| S.No. | Subject                            | Credits | Category  |
| 1.    | Interdisciplinary Core-4           | 4       | ESC       |
| 2.    | Department Core Course-2           | 4       | DCC       |
| 3.    | Department Core Course-3           | 4       | DCC       |
| 4.    | Department Core Course-4           | 4       | DCC       |
| 5.    | Department Core Course-5           | 4       | DCC       |
| 6.    | Ability Enhancement Course-3/VAC-3 | 2       | AEC/VAC   |
| 7.    | Community Engagement Course        | 2*      | Mandatory |
|       | Total                              | 24      |           |

\* Community Engagement to be completed in summer vacation after second semester and its evaluation will be done in 3rd Semester.

|       | Fourth Semester                    |         |          |
|-------|------------------------------------|---------|----------|
| S.No. | Subject                            | Credits | Category |
| 1.    | Interdisciplinary Core Course-5    | 4       | ESC      |
| 2.    | Department Core Course-6           | 4       | DCC      |
| 3.    | Department Core Course-7           | 4       | DCC      |
| 4.    | Department Core Course-8           | 4       | DCC      |
| 5.    | Department Core Course-9           | 4       | DCC      |
| 6     | Ability Enhancement Course-4/VAC-4 | 2       | AEC/VAC  |
|       | Total                              | 22      |          |

|       | Fifth Semester                                    |         |          |
|-------|---|---------|----------|
| S.No. | Subject   | Credits | Category |
| 1.    | Department Core Course – 10                       | 4       | DCC      |
| 2.    | Department Core Course – 11                       | 4       | DCC      |
| 3.    | Department Core Course – 12                       | 4       | DEC      |
| 4.    | Engineering Economics/ Fundamentals of Management | 3       | SEC      |
| 5.    | Department Elective Course – 1                    | 4       | DEC      |
| 6.    | Generic Elective Course – 1                       | 4       | GEC      |
|       | Total   | 23      |          |

|       | Sixth Semester                                    |         |          |
|-------|---|---------|----------|
| S.No. | Subject   | Credits | Category |
| 1.    | Department Core Course – 13                       | 4       | DCC      |
| 2.    | Department Core Course – 14                       | 4       | DCC      |
| 3.    | Fundamentals of Management/ Engineering Economics | 3       | SEC      |
| 4.    | Department Elective Course –2                     | 4       | DEC      |
| 5.    | Department Elective Course – 3                    | 4       | DEC      |
| 6.    | Generic Elective Course – 2                       | 4       | GEC      |
|       | Total   | 23      |          |

|       | Seventh Semester               |            |          |
|-------|--------------------------------|------------|----------|
| S.No. | Subject                        | Credits    | Category |
| 1.    | B.Tech. Project – I            | 4          | DCC      |
| 2.    | Internship*                    | 2          | DCC      |
| 3.    | Department Elective Course – 4 | 4          | DEC      |
| 4.    | Department Elective Course – 5 | 4          | GEC      |
| 5.    | Generic Elective Course – 3    | 4          | GEC      |
| 6.    | Indian Knowledge System        | Non credit | VAC      |
|       | Total                          | 18         |          |

|       | Eighth Semester                |         |          |
|-------|--------------------------------|---------|----------|
| S.No. | Subject                        | Credits | Category |
| 1.    | B.Tech. Project II             | 8       | DCC      |
| 2.    | Department Elective Course – 6 | 4       | DEC      |
| 3.    | Generic Elective Course – 4    | 4       | GEC      |
|       | Total                          | 16      |          |
| 1     | Cumulative credits             | 166     |          |

The 166 Credits as describe above are to be earned to fulfil the requirement of award of the four year B.Tech. Degree. On exit student shall be awarded B.Tech. (Major discipline).

**Major, Minor and Departmental Specialization:** A major is the discipline to which a student is admitted to obtain degree which is his/her primary field of study. The Minor is a secondary area of study opted by a student which may be from a discipline, other than the discipline to which a student is admitted. Departmental Specialization may be opted by the student to gain in-depth knowledge in any emerging area of the discipline in which he/she is admitted.

Every student shall have the option to do a Minor/Departmental Specialization along with his/her major discipline of study.

### Requirements for B. Tech. with Minor:

A student who wishes to pursue a Minor from other discipline is required to earn 24 credits through GECs from the basket prescribed for that particular Minor. Such students shall have to earn 08 additional credits through GECs. In case of an overlap of any course of a Minor with any core or elective courses of the student's Major discipline, the credits from this course will not count towards the Minor area credit requirements, though this course may contribute towards satisfying the requirement of the Minor. In such a case, the requirement of 24 credits must be completed by taking other courses of the specific Minor.

The four-year B. Tech. Degree with Minor in a specific discipline will be awarded to those students who completed the requirement for B. Tech Degree (166 credits) and have earned 08 additional credits through GECs.

### Requirements for B. Tech. with Departmental Specialization:

A student who wishes to pursue Departmental Specialization from the discipline to which he/she is admitted is required to earn 20 credits (out of the total 24 credits to be earned from Discipline specific elective courses) from the basket of courses prescribed for a particular Departmental Specialization.

The four-year B. Tech. Degree with Departmental Specialization will be awarded to those students who completed the

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requirement for B. Tech. Degree (166 credits) and have earned 20 credits through DECs from the basket of courses prescribed for a particular Departmental Specialization of the discipline to which he/she is admitted.

### Summary of credit Requirements under DEC and GECs

|  |         | Program  |                        |
|--|---------|--|------------------------|
| Credit Requirement                               | B. Tech | B. Tech with<br>Departmental<br>Specialization | B. Tech. with<br>Minor |
| DECs   | 24      | 24   | 24                     |
| GECs   | 16      | 16   | 16                     |
| Additional Credits                               | -       | -  | 08                     |
| Requirement of Total Credits for award of degree | 166     | 166  | 174                    |

### Multiple Entry and Exit

UG certificate: Students who opt to exit after completion of the first year and have secured 40 credits will be awarded a UG certificate if, in addition, they earn 6 credits through 2 months summer internship/ ITI level courses/skill-based courses during the summer vacation of the first year. Also, these students will be allowed to re-enter the degree program within three years and complete the degree programme within the stipulated maximum period of seven years.

UG Diploma: students who opt to exit after completion of the second year and have secured 84 credits shall be awarded the UG Diploma if, in addition, they earn 6 credits through 2 months summer internship/ Diploma level courses/skill-based courses during the summer vacation of the second year. Also, these students will be allowed to re-enter the degree programme within three years and complete the degree programme within the stipulated maximum period of seven years.

3-Year B.VOC Degree: Students who opt to exit after completion of the third year and have secured 130 credits shall be awarded B.VOC Degree in the Major discipline if, in addition, they have completed summer internship of 4 credits during the summer vacations of the third year. Also, these students will be allowed to re-enter the degree programme within three years and complete the degree programme within the stipulated maximum period of seven years.

Schemes of Teaching and Examination of B. Tech. Programmes

# **DEPARTMENT OF APPLIED CHEMISTRY**

• Scheme of B. Tech. Chemical Engineering

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|                               |               | Relative Weights (%)  | PRS MTE ETE PRE | - 25 50 -       | 25 20 40 - | 25 20 40 -                          | 25 20 40 -                               | 50 50                                  | 0/25 25/2 50/40/0 0/0/50 /50 0/0 |       |          | - 25 50 -      | 25 20 40 -               | 25 20 40 -   | - 25 50 -                               | 50 - 50          | 0/25 25/2 50/40/0 0/0/50 /50 |       |
|-------------------------------|---------------|-----------------------|-----------------|-----------------|------------|-------------------------------------|--|--|----------------------------------|-------|----------|----------------|--------------------------|--|---|------------------|------------------------------|-------|
|                               |               |                       | Practical CWS   | 0 25            | 0 15       | 0 15                                | 0 15                                     | 3                                      | 0/2/3 $25/1$ $5/0$               |       |          | 0 25           | 0 15                     | 0 15   | 0 25                                    | 3 -              | 0/2/3 $25/1$ $5/0$           |       |
| <b>b</b> 6                    |               | Exam Duration (h)     | Theory Prac     | 3               | 3          | 3                                   | æ  | 0                                      | 3/3/0 0/8/8                      |       |          | 3              | 3                        | 3  | 3                                       | 0                | 3/3/0 0/                     |       |
| neering                       | ter           |                       | Ь               | 0               | 2          | 2                                   | 2  | 2                                      | 0/2/4                            |       | ter      | 0              | 2                        | 2  | 0                                       | 2                | 0/2/4                        |       |
| Engi                          | Semester      | Contact<br>Hours/Week | I               | 1               | 0          | 0                                   | 0  | 0                                      | 0                                |       | Semester |                | 0                        | 0  | 1                                       | 0                | 0                            |       |
| ical                          |               | H                     | Т               | 3               | 3          | 3                                   | 3  | _                                      | 2/1/0                            |       | Second S | 3              | 3                        | 3  | 3                                       | 1                | 2/1/0                        |       |
| hem                           | I Year: First |                       | Credit          | 4               | 4          | 4                                   | 4  | 2                                      | 2                                | 20    | r: Sec   | 4              | 4                        | 4  | 4                                       | 7                | 2                            | 20    |
| B. Tech. Chemical Engineering | I Ye          |                       | Subject Area    | BSC             | BSC        | ESC                                 | ESC                                      | SEC                                    | AEC/VAC                          |       | I Year:  | BSC            | ESC                      | ESC  | DCC                                     | SEC              | AEC/VAC                      |       |
|                               |               | Teaching Scheme       | Course Title    | Mathematics - I | Physics    | Basic Electrical Engineering-<br>II | Computer Aided Engineering<br>Graphics-I | Unit Processes in Organic<br>Synthesis | AEC/VAC                          | Total |          | Mathematics-II | Programming Fundamentals | Mechanical Engineering Concepts for Chemical Engineers | Introduction to Chemical<br>Engineering | Water Technology | AEC/VAC                      | Total |
|                               |               |                       | Subject Code    | AM101           | AP101      | EE105                               | ME101                                    | CH103                                  | AEC/VAC                          |       |          | AM102          | CO102                    | CH102  | CH104                                   | CH106            | AEC/VAC                      |       |
|                               |               |                       | S.<br>No.       | _               | 7          | 3                                   | 4  | S                                      | 9                                |       |          | 1              | 2                        | c  | 4                                       | 5                | 9                            |       |

|                           |                         | (                     | PRE             | ı                                    | I                   | ı                                      | ı  | ı  | 0/0/20         |                             |       |                 | 1                                      | I                              | į                     | Ī             | Ī               | 0/0/20         |       |
|---------------------------|-------------------------|-----------------------|-----------------|--------------------------------------|---------------------|--|--|--|----------------|-----------------------------|-------|-----------------|--|--------------------------------|-----------------------|---------------|-----------------|----------------|-------|
|                           |                         | Relative Weights (%)  | ETE             | 40                                   | 50                  | 40                                     | 40   | 50   | 50/40/0 0/0/50 |                             |       |                 | 40                                     | 40                             | 40                    | 40            | 40              | 50/40/0 0/0/50 |       |
|                           |                         | e Wei                 | MTE             | 20                                   | 25                  | 20                                     | 20   | 25   | 25/2<br>0/0    |                             |       |                 | 20                                     | 20                             | 20                    | 20            | 20              | 25/2<br>0/0    |       |
|                           |                         | Relativ               | PRS             | 25                                   | 0                   | 25                                     | 25   | 0  | 0/25           |                             |       |                 | 25                                     | 25                             | 25                    | 25            | 25              | 0/25           |       |
|                           |                         | I                     | CWS             | 15                                   | 25                  | 15                                     | 15   | 25   | 25/1<br>5/0    |                             |       |                 | 15                                     | 15                             | 15                    | 15            | 15              | 25/1<br>5/0    |       |
|                           |                         | Exam Duration (h)     | Practical       | 0                                    | 0                   | 0                                      | 0  | 0  | 0/2/3          |                             |       |                 | 0                                      | 0                              | 0                     | 0             | 0               | 0/2/3          |       |
| 50                        |                         | Exam I                | Theory          | 3                                    | 3                   | 3                                      | 3  | 3  | 3/3/0          |                             |       |                 | 3                                      | 3                              | 3                     | 3             | 3               | 3/3/0          |       |
| ering                     |                         |                       | Ā               | 2                                    | 0                   | 2                                      | 2  | 0  | 0/2/4          |                             |       |                 | 2                                      | 2                              | 2                     | 2             | 2               | 0/2/4          |       |
| ngine                     | ester                   | Contact<br>Hours/Week | Τ               | 0                                    | 1                   | 0                                      | 0  | 1  | 0              |                             |       | nester          | 0                                      | 0                              | 0                     | 0             | 0               | 0              |       |
| ech. Chemical Engineering | II Year: Third Semester | Co<br>Hours           | T               | 3                                    | 3                   | 3                                      | 3  | 3  | 2/1/0          |                             |       | Fourth Semester | 3                                      | 3                              | 3                     | 3             | 3               | 2/1/0          |       |
| Chen                      | ear: T                  |                       | Credit          | 4                                    | 4                   | 4                                      | 4  | 4  | 2              | 2                           | 24    | Year: Fo        | 4                                      | 4                              | 4                     | 4             | 4               | 2              | 22    |
| B.Tech.                   | II Y                    |                       | Subject<br>Area | ESC                                  | DCC                 | DCC                                    | DCC  | DCC  | AEC/VAC        | Mandatory                   |       | II Ye           | ESC                                    | DCC                            | DCC                   | DCC           | DCC             | AEC/VAC        |       |
|                           |                         | Teaching Scheme       | Course Title    | Engineering Materials and Metallurgy | Transport Phenomena | Chemical Engineering<br>Thermodynamics | Engineering Design and Analysis (Process Equipment Design) | Chemical Engineering Process<br>Calculations | AEC/VAC        | Community Engagement Course | Total |                 | Instrumentation and Process<br>Control | Chemical ReactionEngineering-1 | Mechanical Operations | Heat Transfer | Fluid Mechanics | AEC/VAC        | Total |
|                           |                         |                       | Subject<br>Code | CH201                                | CH203               | CH205                                  | CH207  | CH209  | AEC/VAC        | MS299                       |       |                 | CH202                                  | CH204                          | CH206                 | CH208         | CH210           | AEC/VAC        |       |
|                           |                         |                       | S.<br>No.       | 1                                    | 2                   | С                                      | 4  | 5  | 9              | 7                           |       |                 | -                                      | 2                              | 3                     | 4             | 5               | 9              |       |

|           |                 | ,  | <b>b.</b> 1 ect | ecn. Cnemicai Engineering | nica    | LUZ                   | gine  | ering       |                   |         |                |                                 |                 |        |
|-----------|-----------------|--|-----------------|---------------------------|---------|-----------------------|-------|-------------|-------------------|---------|----------------|---------------------------------|-----------------|--------|
|           |                 |  | III             | III Year: Fifth Semester  | ifth S  | emes                  | ter   |             |                   |         |                |                                 |                 |        |
|           |                 | Teaching Scheme                            |                 |                           | noH Hon | Contact<br>Hours/Week |       | Exam I<br>( | Exam Duration (h) |         | Relative       | Relative Weights (%)            | its (%)         |        |
| S.<br>No. | Subject<br>Code | Course Title                               | Subject<br>Area | Credit                    | Т       | T                     | Ь     | Theory      | Practical         | CWS     | PRS            | MTE                             | ETE             | PRE    |
| -         | CH301           | Polymeric Materials                        | DCC             | 4                         | 3       | 0                     | 2     | 3           | 0                 | 15      | 25             | 20                              | 40              | ı      |
| 2         | CH303           | Mass Transfer-1                            | DCC             | 4                         | 3       | 0                     | 2     | 3           | 0                 | 15      | 25             | 20                              | 40              | ı      |
| 3         | CH305           | Chemical Process Technology                | DCC             | 4                         | 3       | 0                     | 2     | 3           | 0                 | 51      | 25             | 20                              | 40              | I      |
| 4         | MG301           | Fundamentals of Management                 | SEC             | 3                         | 3       | 0                     | 0     | 3           | 0                 | 25      | ı              | 25                              | 50              | ī      |
| S         | СНЗХХ           | Discipline Specific Elective<br>Course - 1 | DEC             | 4                         | 3/3/0   | 0/1/0                 | 2/0/8 | 3/0         | 0/3               | 15/25/0 | 5/25/0 25/0/40 |                                 | 20/25/0 40/50/0 | 09/0/0 |
| 9         | GECXXX          | Generic Elective Course - 1                | GEC             | 4                         | 3/3/0   | 0/1/0                 | 8/0/8 | 3/0         | 0/3               | 15/25/0 | 25/0/40        |                                 | 20/25/0 40/50/0 | 09/0/0 |
|           |                 | Total                                      |                 | 23                        |         |                       |       |             |                   |         |                |                                 |                 |        |
|           |                 |  | III             | Year: S                   | Sixth   | Semester              | ester |             |                   |         |                |                                 |                 |        |
| 1         | СН302           | Chemical Reaction Engineering-             | DCC             | 4                         | 3       | 0                     | 2     | 3           | 0                 | 15      | 25             | 20                              | 40              | ı      |
| 2         | CH304           | Mass Transfer-II                           | DCC             | 4                         | 3       | 0                     | 2     | 3           | 0                 | 15      | 25             | 20                              | 40              | 1      |
| 3         | HU302           | Engineering Economics                      | SEC             | 3                         | 3       | 0                     | 0     | 3           | 0                 | 25      | ı              | 25                              | 05              | Ī      |
| 4         | СНЗХХ           | Discipline Specific Elective<br>Course - 2 | DEC             | 4                         | 3/3/0   | 0/1/0                 | 2/0/8 | 3/0         | 0/3               | 15/25/0 | 25/0/40        | 15/25/0 25/0/40 20/25/0 40/50/0 | 40/50/0         | 09/0/0 |
| 5         | СНЗХХ           | Discipline Specific Elective<br>Course - 3 | DEC             | 4                         | 3/3/0   | 3/3/0 0/1/0 2/0/8     | 2/0/8 | 3/0         | 0/3               | 15/25/0 | 25/0/40        | 15/25/0 25/0/40 20/25/0 40/50/0 | 40/50/0         | 09/0/0 |
| 9         | GECXXX          | Generic Elective Course - 2                | GEC             | 4                         | 3/3/0   | 0/1/0                 | 8/0/8 | 3/0         | 0/3               | 15/25/0 | 25/0/40        |                                 | 20/25/0 40/50/0 | 09/0/0 |
|           |                 | Total                                      |                 | 23                        |         |                       |       |             |                   |         |                |                                 |                 |        |

|        |                  |  | R               | Pech Chemical Engineering | hemic                   | al Eno                | inee  | ring        |                   |         |          |  |         |        |
|--------|------------------|--|-----------------|---------------------------|-------------------------|-----------------------|-------|-------------|-------------------|---------|----------|--|---------|--------|
|        |                  |  | <b>.</b>        |                           |                         |                       |       | 8           |                   |         |          |  |         |        |
|        |                  |  |                 | 1V Year: Seventh Semester | : Sevent                | th Seme               | ster  |             |                   |         |          |  |         |        |
|        |                  | Teaching Scheme                            |                 |                           | C<br>Hou                | Contact<br>Hours/Week |       | Exam [<br>( | Exam Duration (h) |         | Relative | Relative Weights (%)                   | ts (%)  |        |
| s. No. | Subject<br>Code  | Course Title                               | Subject<br>Area | Credit                    | Т                       | T                     | Ь     | Theory      | Theory Practical  | CWS     | PRS      | MTE                                    | ETE     | PRE    |
| -      | CH401            | B. Tech Project-1                          | DCC             | 4                         | ı                       | ı                     | ı     | ı           | ı                 |         | 40       | ı                                      | ı       | 09     |
| 2      | CH403            | Internship                                 | DCC             | 2                         | ı                       | ı                     | ı     | ı           | 1                 | ı       | 40       | ı                                      | ı       | 09     |
| ю      | CH4XX            | Discipline Specific Elective Course – 4    | DEC             | 4                         | 3/3/0                   | 0/1/0                 | 8/0/8 | 3/0         | 0/3               | 15/25/0 | 25/0/40  | 15/25/0 25/0/40 20/25/0 40/50/0 0/0/60 | 40/50/0 | 09/0/0 |
| 4      | CH4XX            | Discipline Specific Elective Course – 5    | DEC             | 4                         | 3/3/0                   | 0/1/0 2/0/8           | 8/0/8 | 3/0         | 0/3               | 15/25/0 | 25/0/40  | 15/25/0 25/0/40 20/25/0 40/50/0 0/0/60 | 40/50/0 | 09/0/0 |
| 5      | GECXXX           | Generic Elective Course - 3                | GEC             | 7                         | 3/3/0                   | 0/1/0                 | 8/0/8 | 3/0         | 0/3               | 15/25/0 | 25/0/40  | 15/25/0 25/0/40 20/25/0 40/50/0 0/0/60 | 40/20/0 | 09/0/0 |
| 9      | VACXXX           | Indian Knowledge System                    | VAC             | Non<br>Credit             |                         |                       |       |             |                   |         |          |  |         |        |
|        |                  | Total                                      |                 | 18                        |                         |                       |       |             |                   |         |          |  |         |        |
|        |                  |  |                 | IV Yea                    | IV Year: Eight Semester | Semes                 | ter   |             |                   |         |          |  |         |        |
| 1      | CH402            | B. Tech Project-II                         | DCC             | 8                         | ı                       | ı                     | I     | ı           | ı                 | ı       | 40       | ı                                      | ı       | 09     |
| 2      | CH4XX            | Discipline Specific Elective<br>Course - 6 | DEC             | 4                         | 3/3/0                   | 0/1/0                 | 2/0/8 | 3/0         | 0/3               | 15/25/0 | 25/0/40  | 15/25/0 25/0/40 20/25/0 40/50/0 0/0/60 | 40/50/0 | 09/0/0 |
| 8      | GECXXX           | Generic Elective Course - 4                | GEC             | 4                         | 3/3/0                   | 0/1/0                 | 2/0/8 | 3/0         | 0/3               | 15/25/0 | 25/0/40  | 15/25/0 25/0/40 20/25/0 40/50/0 0/0/60 | 40/50/0 | 09/0/0 |
|        |                  | Total                                      |                 | 16                        |                         |                       |       |             |                   |         |          |  |         |        |
| Cum    | Cumulative Total |  |                 | 166                       |                         |                       |       |             |                   |         |          |  |         |        |
|        |                  |  |                 |                           |                         |                       |       |             |                   |         |          |  |         |        |

# **B.** Tech. Chemical Engineering

### Discipline Specific Elective Courses

| Discipline | e Specific Elective Course - 1 (Semester - 5)     | Discipline S | Specific Elective Course - 4 & 5 (Semester - 7) |
|------------|---|--------------|---|
| CH307      | Characterization of Materials                     | CH405        | Fiber Technology                                |
| CH309      | Petroleum Refining Engineering                    | CH407        | Polymer Blends and Composites                   |
| CH311      | Chemical Process and Simulations                  | CH409        | Plant Engineering and Process Economics         |
| CH313      | Rheology  | CH411        | Advanced Mass Transfer Operations               |
| CH315      | Corrosion Engineering                             | CH413        | Bio-Chemical Engineering                        |
| CH317      | Plastic Technology                                | CH415        | Rocket Propulsion and Explosives                |
| CH319      | Resin Technology                                  | CH417        | Polymer Waste Management                        |
| CH321      | Rubber Technology                                 | CH419        | Computational Fluid Dynamics                    |
| CH323      | Numerical Methods in Chemical Engineering         | CH421        | Polymer Reaction Engineering                    |
| CH325      | Biomaterials                                      | CH423        | Optimization Techniques                         |
|            |   | CH425        | Application of Polymers in Biomedical           |
|            |   | CH427        | Combustion Engineering                          |
|            |   | CH429        | Energy Resources                                |
|            |   | CH431        | Membrane Technology                             |
| Discipline | e Specific Elective Course - 2 & 3 (Semester - 6) | Discipline S | Specific Elective Course - 6 (Semester - 8)     |
| CH306      | Food Technology                                   | CH404        | Fuel Cell Technology                            |
| CH308      | Paint Technology                                  | CH406        | Catalysis                                       |
| CH310      | Polymer Processing Techniques                     | CH408        | Specialty Polymers                              |
| CH312      | Fertilizer Technology                             | CH410        | Process Engineering and Design                  |
| CH314      | Coatings and Adhesives                            | CH412        | Thermoplastic Elastomers                        |
| CH316      | Petrochemical Engineering                         | CH414        | Non-woven Technology                            |
| CH318      | Packaging Technology                              | CH416        | Industrial Waste Management                     |
| CH320      | Tyre Technology                                   | CH418        | Application of Nanotechnology in Polymers       |
| CH322      | Heat Exchangers                                   | CH420        | Inorganic Polymers                              |
|            |   | CH422        | Pharmaceutical Technology                       |
|            |   | CH424        | Safety & Hazards in Chemical Industries         |
|            |   | CH426        | Biofuel Engineering                             |
|            |   | CH428        | Energy Conservation and Recycling               |

# DEPARTMENT OF APPLIED MATHEMATICS • Scheme of B. Tech. Mathematics and Computing

|     |       |                 | B   | B. Tech. M      | ather   | Mathematics and Computing | and                   | Con   | putin       | <u>1</u> 6        |         |          |  |         |        |
|-----|-------|-----------------|---|-----------------|---------|---------------------------|-----------------------|-------|-------------|-------------------|---------|----------|--|---------|--------|
|     |       |                 |   |                 | [ Year: | I Year: First Semester    | Semes                 | ter   | 4           | D                 |         |          |  |         |        |
|     |       |                 | Teaching Scheme                               |                 |         | noH<br>Hou                | Contact<br>Hours/Week | ~     | Exam I<br>( | Exam Duration (h) |         | Relative | Relative Weights (%)                   | ts (%)  |        |
| - Z | S. S. | Subject<br>Code | Course Title                                  | Subject<br>Area | Credit  | Т                         | L                     | Ь     | Theory      | Practical         | CWS     | PRS      | MTE                                    | ETE     | PRE    |
|     | 1     | AM101           | Mathematics-I                                 | BSC             | 4       | 3                         | 1                     | 0     | 3           | 0                 | 25      | ı        | 25                                     | 50      | ı      |
|     | 2     | AP101           | Physics                                       | BSC             | 4       | 3                         | 0                     | 2     | 3           | 0                 | 15      | 25       | 20                                     | 40      | ı      |
|     | ĸ     | EC101           | Basic Electronics & Communication Engineering | ESC             | 4       | 3                         | 0                     | 2     | 3           | 0                 | 15      | 25       | 20                                     | 40      | 1      |
|     | 4     | ME105           | Computer Aided<br>Engineering Graphics-II     | ESC             | 4       | 3                         | 0                     | 2     | 3           | 0                 | 15      | 25       | 20                                     | 40      | ı      |
|     | ς.    | MC103           | Python Programming                            | SEC             | 7       | 0                         | 0                     | 4     | 0           | 3                 | ı       | 50       | ı                                      | ı       | 50     |
|     | 9     | AEC/VAC         | AEC/VAC                                       | AEC/VAC         | 2       | 2/1/0                     | 0                     | 0/2/4 | 3/3/0       | 0/2/3             | 25/15/0 | 0/25/50  | 25/15/0 0/25/50 25/20/0 50/40/0 0/0/50 | 50/40/0 | 0/0/20 |
|     |       |                 | Total   |                 | 20      |                           |                       |       |             |                   |         |          |  |         |        |
|     |       |                 |   | I               | Year:   | I Year: Second Semester   | Seme                  | ster  |             |                   |         |          |  |         |        |
|     |       | AM102           | Mathematics-II                                | BSC             | 4       | 3                         | -                     | 0     | 3           | 0                 | 25      | ı        | 25                                     | 50      |        |
|     | 2     | CO102           | Programming<br>Fundamentals                   | ESC             | 4       | 3                         | 0                     | 2     | 3           | 0                 | 15      | 25       | 20                                     | 40      | ı      |
|     | 3     | MC102           | Discrete Mathematics                          | ESC             | 4       | 3                         | 1                     | 0     | 3           | 0                 | 25      | -        | 25                                     | 50      | ı      |
|     | 4     | MC104           | Complex Analysis                              | DCC             | 4       | 3                         | 1                     | 0     | 3           | 0                 | 25      | ı        | 25                                     | 50      |        |
|     | 5     | MC106           | MATLAB Programming                            | SEC             | 2       | 0                         | 0                     | 4     | 0           | 3                 | 0       | 50       | 1                                      | 1       | 50     |
|     | 9     | AEC/VAC         | AEC/VAC                                       | AEC/VAC         | 2       | 2/1/0                     | 0                     | 0/2/4 | 3/3/0       | 0/2/3             | 25/15/0 | 0/25/50  | 25/15/0 0/25/50 25/20/0 50/40/0 0/0/50 | 50/40/0 | 0/0/20 |
|     |       |                 | Total   |                 | 20      |                           |                       |       |             |                   |         |          |  |         |        |

|           |              |                                   | B.Tech. Mathematics and Computing | Mat    | hemati                   | cs and                | 1 C <sub>0</sub> | mputi  | ing               |         |         |                         |  |        |
|-----------|--------------|-----------------------------------|-----------------------------------|--------|--------------------------|-----------------------|------------------|--------|-------------------|---------|---------|-------------------------|--|--------|
|           |              |                                   |                                   | II Ye  | II Year: Third Semester  | Seme                  | ster             | 1      | )                 |         |         |                         |  |        |
|           |              | Teaching Scheme                   |                                   |        | Cc                       | Contact<br>Hours/Week |                  | Exam I | Exam Duration (h) |         | Relativ | Relative Weights (%)    | ıts (%)  |        |
| S.<br>No. | Subject Code | Course Title                      | Subject<br>Area                   | Credit | Т                        | L                     | Ь                | Theory | Practical         | CWS     | PRS     | MTE                     | ETE  | PRE    |
|           | MC201        | Data Structure                    | ESC                               | 4      | 3                        | 0                     | 2                | 3      | 0                 | 15      | 25      | 20                      | 40   | ı      |
| 2         | MC203        | Real Analysis                     | DCC                               | 4      | 3                        | 1                     | 0                | 3      | 0                 | 25      | 0       | 25                      | 50   | ı      |
| 3         | MC205        | Probability and Statistics        | DCC                               | 4      | 3                        | 0                     | 2                | 3      | 0                 | 15      | 25      | 20                      | 40   | 1      |
| 4         | MC207        | Modern Algebra                    | DCC                               | 4      | 3                        | 1                     | 0                | 3      | 0                 | 25      | 0       | 25                      | 50   | ı      |
| 5         | MC209        | Database Management<br>Systems    | DCC                               | 4      | 3                        | 0                     | 2                | 3      | 0                 | 15      | 25      | 20                      | 40   | I      |
| 9         | AEC/VAC      | AEC/VAC                           | AEC/VAC                           | 2      | 2/1/0                    | 0                     | 0/2/4            | 3/3/0  | 0/2/3             | 25/15/0 | 0/52/20 | 25/15/0 0/25/50 25/20/0 | 50/40/0 0/0/50   | 0/0/20 |
| 7         | MS299        | Community Engagement<br>Course    | Mandatory                         | 2      |                          |                       |                  |        |                   |         |         |                         |  |        |
|           |              | Total                             |                                   | 24     |                          |                       |                  |        |                   |         |         |                         |  |        |
|           |              |                                   |                                   | II Yea | II Year: Fourth Semester | າ Seme                | ster             |        |                   |         |         |                         |  |        |
| 1         | MC202        | Operating Systems                 | ESC                               | 4      | 3                        | 0                     | 2                | 3      | 0                 | 15      | 25      | 20                      | 40   | 1      |
| 2         | MC204        | Scientific Computing              | DCC                               | 4      | 3                        | 0                     | 2                | 3      | 0                 | 15      | 25      | 20                      | 40   | ı      |
| 3         | MC206        | Analysis and Design of Algorithms | DCC                               | 4      | 3                        | 1                     | 0                | 3      | 0                 | 25      | ı       | 25                      | 50   | ı      |
| 4         | MC208        | Linear Algebra                    | DCC                               | 4      | 3                        | 1                     | 0                | 3      | 0                 | 25      | 1       | 25                      | 50   | ı      |
| 5         | MC210        | Differential Equations            | DCC                               | 4      | 3                        | 0                     | 2                | 3      | 0                 | 15      | 25      | 20                      | 40   | ı      |
| 9         | AEC/VAC      | AEC/VAC                           | AEC/VAC                           | 2      | 2/1/0                    | 0                     | 0/2/4            | 3/3/0  | 0/2/3             | 25/15/0 | 0/25/50 | 25/20/0                 | $25/15/0 \left  0/25/50 \right  25/20/0 \left  50/40/0 \right  0/0/50$ | 0/0/20 |
|           |              | Total                             |                                   | 22     |                          |                       |                  |        |                   |         |         |                         |  |        |

|                              |                          | (                     | PRE              | 1                     | 1                    | 1                 | 1                          | 1                                       | 1                           |       |                          | ı                                     | ij                    | ı                     | ı                                       | j                                       | ī                           |       |
|------------------------------|--------------------------|-----------------------|------------------|-----------------------|----------------------|-------------------|----------------------------|---|-----------------------------|-------|--------------------------|---------------------------------------|-----------------------|-----------------------|---|---|-----------------------------|-------|
|                              |                          | Relative Weights (%)  | ETE              | 50                    | 50                   | 50                | 99                         | 40/20                                   | 40/50                       |       |                          | 40                                    | 50                    | 50                    | 40/50                                   | 40/50                                   | 40/50                       |       |
|                              |                          | Weigl                 |                  | 25                    | 25                   | 25                | 25                         | 70/22                                   | 20/22                       |       |                          | 20                                    | 25                    | 25                    | 15/25 25/0 20/25 40/50                  | 15/25 25/0 20/25 40/50                  | 15/25 25/0 20/25 40/50      |       |
|                              |                          | ative                 | PRS              |                       | ı                    | ı                 | ı                          | 0/27                                    | 25/0                        |       |                          | 25                                    | ı                     | 1                     | 25/0                                    | 25/0                                    | 25/0                        |       |
|                              |                          | Rel                   | CWS PRS MTE      | 25                    | 25                   | 25                | 25                         | 15/25                                   | 15/25                       |       |                          | 15                                    | 25                    | 25                    | 15/25                                   | 15/25                                   | 15/25                       |       |
|                              |                          | Exam Duration (h)     | Theory Practical | 0                     | 0                    | 0                 | 0                          | 0                                       | 0                           |       |                          | 0                                     | 0                     | 0                     | 0                                       | 0                                       | 0                           |       |
| ng                           | 0                        | Exam D                | Theory           | 3                     | 3                    | 3                 | 8                          | 8                                       | 3                           |       |                          | 3                                     | 3                     | 3                     | 3                                       | 3                                       | 3                           |       |
| outi                         |                          | eek                   | d                | 0                     | 0                    | 0                 | 0                          | 2/0                                     | 2/0                         |       |                          | 2                                     | 0                     | 0                     | 2/0                                     | 2/0                                     | 2/0                         |       |
|                              | •                        | Contact<br>Hours/Week | Τ                | 1                     | -                    | -                 | 0                          | 0/1                                     | 0/1                         |       |                          | 0                                     | _                     | 0                     | 0/1                                     | 0/1                                     | 0/1                         |       |
| CC                           | ter                      | noH<br>Hon            | Т                | 3                     | 3                    | 3                 | 3                          | 3/3                                     | 3/3                         |       | ster                     | 3                                     | 3                     | 3                     | 3/3                                     | 3/3                                     | 3/3                         |       |
| cs and                       | Semes                    |                       | Credit           | 4                     | 4                    | 4                 | 8                          | 7                                       | 4                           | 23    | Semes                    | 4                                     | 4                     | 8                     | 4                                       | 4                                       | 7                           | 23    |
| n. Mathematics and Computing | III Year: Fifth Semester |                       | Subject<br>Area  | DCC                   | DCC                  | DCC               | SEC                        | DEC                                     | GEC                         |       | III Year: Sixth Semester | DCC                                   | DCC                   | SEC                   | DEC                                     | DEC                                     | GEC                         |       |
| B. Tech. M                   |                          | Teaching Scheme       | Course Title     | Theory of Computation | Stochastic Processes | Computer Networks | Fundamentals of Management | Discipline Specific Elective Course - 1 | Generic Elective Course - 1 | Total | III                      | Mathematical Modelling and Simulation | Financial Engineering | Engineering Economics | Discipline Specific Elective Course - 2 | Discipline Specific Elective Course - 3 | Generic Elective Course - 2 | Total |
|                              |                          |                       | Subject Code     | MC301                 | MC303                | MC305             | MG301                      | MC3XX                                   | GECXXX                      |       |                          | MC302                                 | MC304                 | HU302                 | MC3XX                                   | MC3XX                                   | GECXXX                      |       |
|                              |                          |                       | S.<br>No.        | -                     | 2                    | С                 | 4                          | 5                                       | 9                           |       |                          | 1                                     | 2                     | 3                     | 4                                       | 5                                       | 9                           |       |

|        |                  | B. Tecl                                 | ch. Ma          | themati       | h. Mathematics and Computing | omp                  | utin | 50     |                              |       |        |                        |        |     |
|--------|------------------|---|-----------------|---------------|------------------------------|----------------------|------|--------|------------------------------|-------|--------|------------------------|--------|-----|
|        |                  |   | IV Ye           | ar: Sevent    | IV Year: Seventh Semester    | JE.                  |      |        |                              |       |        |                        |        |     |
|        |                  | Teaching Scheme                         |                 |               | Contact<br>Hours/Week        | Contact<br>ours/Week |      | Exam I | Exam Duration (h)            | Rel   | lative | Relative Weights (%)   | hts (% | )   |
| S. No. | Subject Code     | Course Title                            | Subject<br>Area | Credit        | T                            | T                    | d    | Theory | Theory Practical CWS PRS MTE | CWS   | PRS    | MTE                    | ETE    | PRE |
| _      | MC401            | B. Tech Project-I                       | DCC             | 4             | 1                            | ı                    | I    | ı      | ı                            | ı     | 40     | ı                      | ı      | 09  |
| 2      | MC403            | Internship                              | DCC             | 2             | •                            | ı                    | I    | 1      | -                            | ı     | 40     | ı                      | I      | 09  |
| 3      | MC4XX            | Discipline Specific Elective Course – 4 | DEC             | 4             | 3/3                          | 0/1                  | 2/0  | 8      | 0                            | 15/25 |        | 25/0 20/25 40/50       | 40/50  |     |
| 4      | MC4XX            | Discipline Specific Elective Course – 5 | DEC             | 4             | 3/3                          | 0/1                  | 2/0  | 8      | 0                            | 15/25 | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  |     |
| 5      | GECXXX           | Generic Elective Course - 3             | GEC             | 4             | 3/3                          | 0/1                  | 2/0  | 3      | 0                            | 15/25 |        | 25/0 20/25 40/50       | 40/50  | -   |
| 9      | VACXXX           | V ACXXX Indian Knowledge System         | VAC             | Non<br>Credit |                              |                      |      |        |                              |       |        |                        |        |     |
|        |                  | Total                                   |                 | 18            |                              |                      |      |        |                              |       |        |                        |        |     |
|        |                  |   | IV Y            | ear: Eight    | IV Year: Eight Semester      | •                    |      |        |                              |       |        |                        |        |     |
| 1      | MC402            | B. Tech Project-II                      | DCC             | 8             | 1                            | ı                    | I    | 1      | -                            | ı     | 40     | ı                      | ı      | 09  |
| 2      | MC4XX            | Discipline Specific Elective Course - 6 | DEC             | 4             | 3/3                          | 0/1                  | 2/0  | 3      | 0                            | 15/25 | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  | -   |
| 3      | GECXXX           | Generic Elective Course - 4             | GEC             | 4             | 3/3                          | 0/1                  | 2/0  | 3      | 0                            | 15/25 | 25/0   | 20/25 40/50            | 40/50  | 1   |
|        |                  | Total                                   |                 | 16            |                              |                      |      |        |                              |       |        |                        |        |     |
| Cum    | Cumulative Total |   |                 | 166           |                              |                      |      |        |                              |       |        |                        |        |     |
|        |                  |   |                 |               |                              |                      |      |        |                              |       |        |                        |        |     |

# **B. Tech. Mathematics and Computing**

# Discipline Specific Elective Courses

| Discipline | Specific Elective Course - 1 (Semester - 5)     |
|------------|---|
| MC307      | Artificial Intelligence                         |
| MC309      | Number Theory                                   |
| MC311      | Numerical Linear Algebra                        |
| MC313      | Operations Research                             |
| MC315      | Partial Differential Equations                  |
|            |   |
|            |   |
|            |   |
|            |   |
|            |   |
|            |   |
| Discipline | Specific Elective Course - 2 & 3 (Semester - 6) |
| MC306      | Object Oriented Programming                     |
| MC308      | Computer Graphics                               |
| MC310      | Machine Learning                                |
| MC312      | Wireless and Mobile Computing                   |
| MC314      | Quantum Information Theory                      |
| MC316      | Computer Organization and Architecture          |
| MC318      | Software Engineering                            |
| MC320      | Web Technology                                  |
| MC322      | Graph Theory                                    |
| MC324      | Fuzzy set and Fuzzy logic                       |

| MC405 Optimization Techniques  MC407 Numerical methods for Ordinary Differential Equations  MC409 Tensor Calculus  MC411 Statistical Inference  MC413 Big Data Analytics  MC415 Data Warehousing and Data Mining  MC417 Cryptography and Network Security  MC419 Differential Geometry  MC421 Topology  MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding  MC414 Natural Language Processing | MC407 Numerical methods for Ordinary Differential Equations  MC409 Tensor Calculus  MC411 Statistical Inference  MC413 Big Data Analytics  MC415 Data Warehousing and Data Mining  MC417 Cryptography and Network Security  MC419 Differential Geometry  MC421 Topology  MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding | Discipline Sp | pecific Elective Course - 4 & 5 (Semester - 7)  |
|--|--|---------------|---|
| MC409 Tensor Calculus  MC411 Statistical Inference  MC413 Big Data Analytics  MC415 Data Warehousing and Data Mining  MC417 Cryptography and Network Security  MC419 Differential Geometry  MC421 Topology  MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding  | MC409 Tensor Calculus  MC411 Statistical Inference  MC413 Big Data Analytics  MC415 Data Warehousing and Data Mining  MC417 Cryptography and Network Security  MC419 Differential Geometry  MC421 Topology  MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding  | MC405         | Optimization Techniques                         |
| MC411 Statistical Inference  MC413 Big Data Analytics  MC415 Data Warehousing and Data Mining  MC417 Cryptography and Network Security  MC419 Differential Geometry  MC421 Topology  MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding   | MC411 Statistical Inference  MC413 Big Data Analytics  MC415 Data Warehousing and Data Mining  MC417 Cryptography and Network Security  MC419 Differential Geometry  MC421 Topology  MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding   | MC407         |   |
| MC413 Big Data Analytics  MC415 Data Warehousing and Data Mining  MC417 Cryptography and Network Security  MC419 Differential Geometry  MC421 Topology  MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding  | MC413 Big Data Analytics  MC415 Data Warehousing and Data Mining  MC417 Cryptography and Network Security  MC419 Differential Geometry  MC421 Topology  MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding  | MC409         | Tensor Calculus                                 |
| MC415 Data Warehousing and Data Mining MC417 Cryptography and Network Security MC419 Differential Geometry MC421 Topology MC423 Functional Analysis MC425 Compiler Design Discipline Specific Elective Course - 6 (Semester - 8) MC404 Numerical Methods for Partial Differential Equations MC406 Finite Element Methods MC408 Statistical Quality Control and Decision Making MC410 Game Theory MC412 Information Theory and Coding   | MC415 Data Warehousing and Data Mining MC417 Cryptography and Network Security MC419 Differential Geometry MC421 Topology MC423 Functional Analysis MC425 Compiler Design Discipline Specific Elective Course - 6 (Semester - 8) MC404 Numerical Methods for Partial Differential Equations MC406 Finite Element Methods MC408 Statistical Quality Control and Decision Making MC410 Game Theory MC412 Information Theory and Coding   | MC411         | Statistical Inference                           |
| MC417 Cryptography and Network Security MC419 Differential Geometry MC421 Topology MC423 Functional Analysis MC425 Compiler Design Discipline Specific Elective Course - 6 (Semester - 8) MC404 Numerical Methods for Partial Differential Equations MC406 Finite Element Methods MC408 Statistical Quality Control and Decision Making MC410 Game Theory MC412 Information Theory and Coding  | MC417 Cryptography and Network Security MC419 Differential Geometry MC421 Topology MC423 Functional Analysis MC425 Compiler Design Discipline Specific Elective Course - 6 (Semester - 8) MC404 Numerical Methods for Partial Differential Equations MC406 Finite Element Methods MC408 Statistical Quality Control and Decision Making MC410 Game Theory MC412 Information Theory and Coding  | MC413         | Big Data Analytics                              |
| MC419 Differential Geometry  MC421 Topology  MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making MC410 Game Theory  MC412 Information Theory and Coding  | MC419 Differential Geometry  MC421 Topology  MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding   | MC415         | Data Warehousing and Data Mining                |
| MC421 Topology MC423 Functional Analysis MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8) MC404 Numerical Methods for Partial Differential Equations MC406 Finite Element Methods MC408 Statistical Quality Control and Decision Making MC410 Game Theory MC412 Information Theory and Coding   | MC421 Topology MC423 Functional Analysis MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations MC406 Finite Element Methods MC408 Statistical Quality Control and Decision Making MC410 Game Theory MC412 Information Theory and Coding  | MC417         | Cryptography and Network Security               |
| MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making MC410 Game Theory  MC412 Information Theory and Coding   | MC423 Functional Analysis  MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding  | MC419         | Differential Geometry                           |
| MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making MC410 Game Theory  MC412 Information Theory and Coding  | MC425 Compiler Design  Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding   | MC421         | Topology  |
| Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making MC410 Game Theory  MC412 Information Theory and Coding   | Discipline Specific Elective Course - 6 (Semester - 8)  MC404 Numerical Methods for Partial Differential Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding  | MC423         | Functional Analysis                             |
| MC404 Numerical Methods for Partial Differential Equations MC406 Finite Element Methods MC408 Statistical Quality Control and Decision Making MC410 Game Theory MC412 Information Theory and Coding  | MC404 Numerical Methods for Partial Differential Equations MC406 Finite Element Methods MC408 Statistical Quality Control and Decision Making MC410 Game Theory MC412 Information Theory and Coding  | MC425         | Compiler Design                                 |
| MC404 Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding   | MC404 Equations  MC406 Finite Element Methods  MC408 Statistical Quality Control and Decision Making  MC410 Game Theory  MC412 Information Theory and Coding   | Discipline Sp | pecific Elective Course - 6 (Semester - 8)      |
| MC408 Statistical Quality Control and Decision Making MC410 Game Theory MC412 Information Theory and Coding  | MC408 Statistical Quality Control and Decision Making MC410 Game Theory MC412 Information Theory and Coding  | MC404         |   |
| MC410 Game Theory MC412 Information Theory and Coding  | MC410 Game Theory MC412 Information Theory and Coding  | MC406         | Finite Element Methods                          |
| MC412 Information Theory and Coding  | MC412 Information Theory and Coding  | MC408         | Statistical Quality Control and Decision Making |
|  |  | MC410         | Game Theory                                     |
| MC414 Natural Language Processing  | MC414 Natural Language Processing  | MC412         | Information Theory and Coding                   |
|  |  | MC414         | Natural Language Processing                     |
|  |  |               |   |
|  |  |               |   |

# **DEPARTMENT OF APPLIED PHYSICS**

• Scheme of B. Tech. Engineering Physics

|       |                 |                                    | B. Tech.     | Engir   | Tech. Engineering Physics | Phy                   | sics  |             |                   |             |             |             |                      |        |
|-------|-----------------|------------------------------------|--------------|---------|---------------------------|-----------------------|-------|-------------|-------------------|-------------|-------------|-------------|----------------------|--------|
|       |                 |                                    | I Ye         | ar: Fir | I Year: First Semester    | ter                   |       |             |                   |             |             |             |                      |        |
|       |                 | Teaching Scheme                    |              |         | Coi<br>Hours,             | Contact<br>Hours/Week |       | Exam I<br>( | Exam Duration (h) | R           | elativ      | e Wei       | Relative Weights (%) |        |
| S. N. | S. Subject Code | Course Title                       | Subject Area | Credit  | Т                         | L                     | Ь     | Theory      | Practical         | CWS         | PRS         | MTE         | ETE                  | PRE    |
| 1     | AM101           | Mathematics – I                    | BSC          | 4       | 3                         | 1                     | 0     | 3           | 0                 | 25          | Ī           | 25          | 50                   | ı      |
| 2     | 2 AP101         | Physics                            | BSC          | 4       | 3                         | 0                     | 2     | 3           | 0                 | 15          | 25          | 20          | 40                   | ı      |
| 3     | 3 EE105         | Basic Electrical Engineering II    | ESC          | 4       | 3                         | 0                     | 2     | 3           | 0                 | 15          | 25          | 20          | 40                   | Ī      |
| 4     | 4 AC101         | Applied Chemistry                  | BSC          | 4       | 3                         | 0                     | 2     | 3           | 0                 | 15          | 25          | 20          | 40                   | Ī      |
| 5     | 5 EP103         | Engineering Physics<br>Workshop-I  | SEC          | 2       | 1                         | 0                     | 2     | 0           | 3                 | ı           | 50          | -           | ı                    | 50     |
| 9     | 5 AEC/VAC       | AEC/VAC                            | AEC/VAC      | 2       | 2/1/0                     | 0                     | 0/2/4 | 3/3/0       | 0/2/3             | 25/1<br>5/0 | 0/25        | 25/2<br>0/0 | 50/40/0 0/0/50       | 0/0/20 |
|       |                 | Total                              |              | 20      |                           |                       |       |             |                   |             |             |             |                      |        |
|       |                 |                                    | I Yea        | r: Seco | I Year: Second Semester   | ester                 |       |             |                   |             |             |             |                      |        |
|       | AM102           | Mathematics-II                     | BSC          | 4       | 3                         | 1                     | 0     | 3           | 0                 | 25          | -           | 25          | 99                   | ı      |
| 2     | CO102           | Programming Fundamentals           | ESC          | 4       | 3                         | 0                     | 2     | 3           | 0                 | 15          | 25          | 20          | 40                   | I      |
| 3     | BP102           | Computational Methods              | ESC          | 4       | 3                         | 1                     | 0     | 3           | 0                 | 25          |             | 25          | 50                   | ı      |
| 4     | t EP104         | Fundamentals of<br>Electrodynamics | DCC          | 4       | 3                         | 1                     | 0     | 3           | 0                 | 25          | -           | 25          | 50                   | I      |
| 3     | 5 EP106         | Engineering Physics<br>Workshop-II | SEC          | 2       | 1                         | 0                     | 2     | 0           | 3                 | 1           | 50          | 1           | 1                    | 50     |
| 9     | 5 AEC/VAC       | AEC/VAC                            | AEC/VAC      | 2       | 2/1/0                     | 0                     | 0/2/4 | 3/3/0       | 0/2/3             | 25/1<br>5/0 | 0/25<br>/50 | 25/2<br>0/0 | 50/40/0 0/0/50       | 0/0/20 |
|       |                 | Total                              |              | 20      |                           |                       |       |             |                   |             |             |             |                      |        |

|                           |                         |                       | PRE          | ı                         | ı                    | ı                   | ı                              | I                 | 0/0/20         |                             |       |                          | ı                    | Ī               | ı                                       | ı                       | ı                        | 05/0/0         |       |
|---------------------------|-------------------------|-----------------------|--------------|---------------------------|----------------------|---------------------|--------------------------------|-------------------|----------------|-----------------------------|-------|--------------------------|----------------------|-----------------|---|-------------------------|--------------------------|----------------|-------|
|                           |                         | Relative Weights (%)  | ETE          | 40                        | 50                   | 50                  | 40                             | 50                | 50/40/0 0/0/50 |                             |       |                          | 50                   | 50              | 40                                      | 40                      | 40                       | 50/40/0 0/0/50 |       |
|                           |                         | e Wei                 | MTE          | 20                        | 25                   | 25                  | 20                             | 25                | 25/2<br>0/0    |                             |       |                          | 25                   | 25              | 20                                      | 20                      | 20                       | 25/2<br>0/0    |       |
|                           |                         | Relativ               | PRS          | 25                        | ı                    | ı                   | 25                             | ı                 | 0/25           |                             |       |                          | ı                    | ı               | 25                                      | 25                      | 25                       | 0/25           |       |
|                           |                         | H                     | CWS          | 15                        | 25                   | 25                  | 15                             | 25                | 25/1 5/0       |                             |       |                          | 25                   | 25              | 15                                      | 15                      | 15                       | 25/1 5/0       |       |
|                           |                         | Exam Duration (h)     | Practical    | 0                         | 0                    | 0                   | 0                              | 0                 | 0/2/3          |                             |       |                          | 0                    | 0               | 0                                       | 0                       | 0                        | 0/2/3          |       |
|                           |                         | Exam 1                | Theory       | 3                         | 3                    | 3                   | 3                              | 3                 | 3/3/0          |                             |       |                          | 3                    | 3               | 3                                       | 3                       | 3                        | 3/3/0          |       |
| ysics                     |                         | act<br>Veek           | Ь            | 2                         | 0                    | 0                   | 2                              | 0                 | 0/2/4          |                             |       |                          | 0                    | 0               | 2                                       | 2                       | 2                        | 0/2/4          |       |
| Ph                        | ster                    | Contact<br>Hours/Week | I            | 0                         |                      |                     | 0                              | -                 | 0 0/           |                             |       | ester                    | 1                    |                 | 0                                       | 0                       | 0                        | 0 0/           | _     |
| ing                       | eme                     | Ho                    | Т            | 3                         | 3                    | 3                   | 3                              | 3                 | 2/1/0          |                             |       | eme                      | 3                    | 3               | 3                                       | 3                       | 3                        | 2/1/0          |       |
| ineer                     | hird S                  |                       | Credit       | 4                         | 4                    | 4                   | 4                              | 4                 | 2              | 2                           | 24    | urth S                   | 4                    | 4               | 4                                       | 4                       | 4                        | 2              | 22    |
| Tech. Engineering Physics | II Year: Third Semester |                       | Subject Area | ESC                       | DCC                  | DCC                 | DCC                            | DCC               | AEC/VAC        | Mandatory                   |       | II Year: Fourth Semester | ESC                  | DCC             | DCC                                     | DCC                     | DCC                      | AEC/VAC        |       |
| <b>B.</b> 1               |                         | Teaching Scheme       | Course Title | Introduction to Computing | Mathematical Physics | Classical Mechanics | Digital and Analog Electronics | Quantum Mechanics | AEC/VAC        | Community Engagement Course | Total |                          | Communication System | Thermal Physics | Microprocessor Architecture and Program | AI for Material Science | Condensed Matter Physics | AEC/VAC        | Total |
|                           |                         |                       | Subject Code | EP201                     | EP203                | EP205               | EP207                          | EP209             | AEC/VAC        | MS299                       |       |                          | EP202                | EP204           | EP206                                   | EP208                   | EP210                    | AEC/VAC        |       |
|                           |                         |                       | S.<br>No.    | -                         | 2                    | c                   | 4                              | 5                 | 9              | 7                           |       |                          |                      | 2               | 3                                       | 4                       | 5                        | 9              | 1     |

|                           |                          | (0,                   | PRE          | ı  | 1                            | ı                                      | -                          | 1                                       | 1                           |       |                          | ı   | ı   | ı                     | ı                                       | ı                                       | 1                           |       |
|---------------------------|--------------------------|-----------------------|--------------|--|------------------------------|--|----------------------------|---|-----------------------------|-------|--------------------------|---|---|-----------------------|---|---|-----------------------------|-------|
|                           |                          | Relative Weights (%)  | ETE          | 40   | 50                           | 50                                     | 50                         | 40/50                                   | 20/25 40/50                 |       |                          | 40  | 40  | 50                    | 50                                      | 50                                      | 40/50                       |       |
|                           |                          | Weig                  | MTE          | 20   | 25                           | 25                                     | 25                         | 20/25                                   | 20/25                       |       |                          | 20  | 20  | 25                    | 25                                      | 25                                      | 20/25                       |       |
|                           |                          | lative                | PRS          | 25   | ı                            | 1                                      | ı                          | 25/0                                    | 25/0                        |       |                          | 25  | 25  | •                     | -                                       | ı                                       | 25/0                        |       |
|                           |                          | Rej                   | CWS          | 15   | 25                           | 25                                     | 25                         | 15/25                                   | 15/25                       |       |                          | 15  | 15  | 25                    | 25                                      | 25                                      | 15/25                       |       |
|                           |                          | Exam Duration<br>(h)  | Practical    | 0  | 0                            | 0                                      | 0                          | 0                                       | 0                           |       |                          | 0   | 0   | 0                     | 0                                       | 0                                       | 0                           |       |
|                           |                          | Exam D<br>(           | Theory       | 3  | 3                            | 3                                      | 8                          | 3                                       | 3                           |       |                          | 3   | 3   | 8                     | 3                                       | 8                                       | 3                           |       |
|                           |                          | ct<br>'eek            | P            | 2  | 0                            | 0                                      | 0                          | 2                                       | 2/0                         |       |                          | 2   | 2   | 0                     | 0                                       | 0                                       | 2/0                         |       |
| ics                       |                          | Contact<br>Hours/Week | H            | 0  | -                            | -                                      | 0                          | 0                                       | 0/1                         |       |                          | 0   | 0   | 0                     | 1                                       | 1                                       | 0/1                         |       |
| hys                       | ے                        | Hou                   | Г            | c  | 3                            | ж                                      | 3                          | 3                                       | 3/3                         |       | ÷.                       | n   | 3   | 3                     | 3                                       | 3                                       | 3/3                         |       |
| ring P                    | Semester                 |                       | Credit       | 4  | 4                            | 4                                      | 8                          | 4                                       | 4                           | 23    | Semeste                  | 4   | 4   | 8                     | 4                                       | 4                                       | 4                           | 23    |
| Tech. Engineering Physics | III Year: Fifth Semester |                       | Subject Area | DCC  | DCC                          | DCC                                    | SEC                        | DEC                                     | GEC                         |       | III Year: Sixth Semester | DCC                                       | DCC   | SEC                   | DEC                                     | DEC                                     | GEC                         |       |
| B. Te                     |                          | Teaching Scheme       | Course Title | Advanced Semiconductor and Microwave Devices | Atomic and Molecular Physics | Fundamentals of Quantum<br>Computation | Fundamentals of Management | Discipline Specific Elective Course - 1 | Generic Elective Course - 1 | Total | Π                        | Fiber Optics and Optical<br>Communication | Energy Storage and Conversion<br>Technologies | Engineering Economics | Discipline Specific Elective Course - 2 | Discipline Specific Elective Course - 3 | Generic Elective Course - 2 | Total |
|                           |                          |                       | Subject Code | EP301  | EP303                        | EP305                                  | MG301                      | EP3XX                                   | GECXXX                      |       |                          | EP302                                     | EP304   | HU302                 | EP3XX                                   | EP3XX                                   | GECXXX                      |       |
|                           |                          |                       | S. No.       | -  | 2                            | 3                                      | 4                          | 5                                       | 9                           |       |                          | -   | 2   | 3                     | 4                                       | 5                                       | 9                           |       |

|            |        |                  |  | B. Tech.        | Tech. Engineering Physics | ing Ph  | ysics                 | 7.0 |        |                   |       |        |                        |                      |     |
|------------|--------|------------------|--|-----------------|---------------------------|---------|-----------------------|-----|--------|-------------------|-------|--------|------------------------|----------------------|-----|
|            |        |                  |  | IV Ye           | IV Year: Seventh Semester | Semes   | ter                   |     |        |                   |       |        |                        |                      |     |
|            |        |                  | Teaching Scheme                            |                 |                           | Cc      | Contact<br>Hours/Week | ζ   | Exam l | Exam Duration (h) | Re    | lative | e Weig                 | Relative Weights (%) | (0  |
| S.         | S. No. | Subject<br>Code  | Course Title                               | Subject<br>Area | Credit                    | Т       | T                     | d   | Theory | Theory Practical  | CWS   | PRS    | CWS PRS MTE            | ETE                  | PRE |
|            | 1      | EP401            | B. Tech Project-I                          | DCC             | 4                         | 1       | I                     | -   | •      | -                 | ı     | 40     | ı                      | ı                    | 09  |
|            | 2      | EP403            | Internship                                 | DCC             | 2                         | ı       | I                     | •   | •      | ı                 | ı     | 40     |                        |                      | 09  |
|            | 3      | EP4XX            | Discipline Specific Elective Course – 4    | DEC             | 4                         | 3/3     | 0/1                   | 2/0 | 3      | 0                 | 15/25 | 25/0   | 15/25 25/0 20/25 40/50 | 40/50                | ı   |
|            | 4      | EP4XX            | Discipline Specific Elective<br>Course – 5 | DEC             | 4                         | 3/3     | 0/1                   | 2/0 | 3      | 0                 | 15/25 | 25/0   | 15/25 25/0 20/25 40/50 | 40/50                | ı   |
|            | 5 (    | GECXXX           | GECXXX Generic Elective Course - 3         | GEC             | 4                         | 3/3     | 0/1                   | 2/0 | 3      | 0                 | 15/25 | 25/0   | 15/25 25/0 20/25 40/50 | 40/50                | ı   |
|            | 9      | VACXXX           | V ACXXX Indian Knowledge System            | VAC             | Non Credit                |         |                       |     |        |                   |       |        |                        |                      |     |
|            |        |                  | Total                                      |                 | 18                        |         |                       |     |        |                   |       |        |                        |                      |     |
|            |        |                  |  | IV Y            | IV Year: Eight Semester   | emester |                       |     |        |                   |       |        |                        |                      |     |
|            | 1      | EP402            | B. Tech Project-II                         | DCC             | 8                         | ı       | ı                     | ı   |        | ı                 | -     | 40     | 1                      |                      | 60  |
|            | 2      | EP4XX            | Departmental Elective Course -6            | DEC             | 4                         | 3/3     | 0/1                   | 2/0 | 3      | 0                 | 15/25 | 25/0   | 15/25 25/0 20/25 40/50 | 40/50                | ı   |
|            | 3 (    | GECXXX           | GECXXX General Elective Course -4          | GEC             | 4                         | 3/3     | 0/1                   | 2/0 | 3      | 0                 | 15/25 | 25/0   | 15/25 25/0 20/25 40/50 | 40/50                | ı   |
|            |        |                  | Total                                      |                 | 16                        |         |                       |     |        |                   |       |        |                        |                      |     |
| $^{\circ}$ | umula  | Cumulative Total |  |                 | 166                       |         |                       |     |        |                   |       |        |                        |                      |     |
| l          |        |                  |  |                 |                           |         |                       |     |        |                   |       |        |                        |                      |     |

# B. Tech. Engineering Physics

## Discipline Specific Elective Courses

| Discipline | Specific Elective Course - 1 (Semester - 5)                          |
|------------|--|
| EP307      | Principles and Applications in Nuclear Engineering                   |
| EP309      | Biophysics   |
| EP311      | Cosmology and Astrophysics   |
| EP313      | Computer Networking  |
| EP315      | Advanced Semiconductor Device Physics                                |
| EP317      | Advanced Wafer Processing  |
| Discipline | Specific Elective Course - 2 & 3 (Semester - 6)                      |
| EP306      | Laser and Optical Instruments  |
| EP308      | Instrumentation and Control  |
| EP310      | Plasma and Nanobiotechnology   |
| EP312      | Fabrication and Characterization of Nanostructures                   |
| EP314      | Integrated Optics  |
| EP316      | Compact Modelling and Process Simulation of Semiconductor<br>Devices |
| EP318      | Advanced Chiplets Packaging and Reliability Engineering              |
| EP320      | Introduction to Quantum Field Theory                                 |

| Discipline S | Specific Elective Course - 4 & 5 (Semester - 7) |
|--------------|---|
| EP405        | Nano Science and Technology                     |
| EP407        | VLSI and FPGA design                            |
| EP409        | Robotic Engineering                             |
| EP411        | Advanced Materials for Photonic Devices         |
| EP413        | Semiconductor Optoelectronics                   |
| EP415        | Advanced Simulation Techniques in Physics       |
| EP417        | Next Generation Semiconductor Materials         |
| Discipline S | Specific Elective Course - 6 (Semester - 8)     |
| EP404        | Introduction to Spintronics                     |
| EP406        | Fuzzy Logic and Neural Networks                 |
| EP408        | Mobile and Satellite communication              |
| EP410        | Space and Atmospheric Science                   |
|              |   |
|              |   |
|              |   |
|              |   |
|              |   |

# **DEPARTMENT OF BIOTECHNOLOGY**

•Scheme of B. Tech. Biotechnology

|    |                 |   | R Te         | ch Ri   | R Tech Biotechnology    | olog                  |       |        |                   |          |             |             |                      |        |
|----|-----------------|---|--------------|---------|-------------------------|-----------------------|-------|--------|-------------------|----------|-------------|-------------|----------------------|--------|
|    |                 |   | I Ye         | ar: Fir | I Year: First Semester  | ster                  |       |        |                   |          |             |             |                      |        |
|    |                 | Teaching Scheme                               |              |         | Co                      | Contact<br>Hours/Week |       | Exam I | Exam Duration (h) | NA       | Relativ     | e Wei       | Relative Weights (%) |        |
|    | Subject<br>Code | Course Title                                  | Subject Area | Credit  | Т                       | Т                     | Ь     | Theory | Practical         | CWS      | PRS         | MTE         | ETE                  | PRE    |
|    | AM101           | Mathematics - I                               | BSC          | 4       | 3                       | 1                     | 0     | 3      | 0                 | 25       | ı           | 25          | 50                   | ı      |
|    | AP101           | Applied Physics                               | BSC          | 4       | 3                       | 0                     | 2     | 3      | 0                 | 15       | 25          | 20          | 40                   | ı      |
|    | EC101           | Basic Electronics & Communication Engineering | ESC          | 4       | 3                       | 0                     | 2     | 8      | 0                 | 15       | 25          | 20          | 40                   | ı      |
|    | AC101           | Applied Chemistry                             | BSC          | 4       | 3                       | 0                     | 2     | 3      | 0                 | 15       | 25          | 20          | 40                   | •      |
|    | BT103           | Applied Aquaculture                           | SEC          | 2       | 1                       | 0                     | 2     | 0      | ε                 | ı        | 09          | ı           | -                    | 0\$    |
| J  | AEC/VAC         | AEC/VAC                                       | AEC/VAC      | 2       | 2/1/0                   | 0                     | 0/2/4 | 3/3/0  | 8/7/0             | 25/1 5/0 | 0/25<br>/50 | 25/2<br>0/0 | 50/40/0 0/0/50       | 05/0/0 |
|    |                 | Total   |              | 20      |                         |                       |       |        |                   |          |             |             |                      |        |
|    |                 |   | I Yea        | r: Seco | I Year: Second Semester | ester                 |       |        |                   |          |             |             |                      |        |
|    | AM102           | Mathematics-II                                | BSC          | 4       | 3                       | 1                     | 0     | 3      | 0                 | 25       | -           | 25          | 09                   | -      |
|    | CO102           | Programming Fundamentals                      | ESC          | 7       | 3                       | 0                     | 2     | 3      | 0                 | 15       | 25          | 20          | 40                   | -      |
|    | BT102           | Biochemical Engineering<br>Principles         | ESC          | 4       | 3                       | 1                     | 0     | 3      | 0                 | 25       | ı           | 25          | 50                   | ı      |
|    | BT104           | Introduction to Biotechnology                 | DCC          | 4       | 3                       | 1                     | 0     | 3      | 0                 | 25       | 1           | 25          | 05                   | -      |
|    | BT106           | Development of Scientific<br>Instrumentation  | SEC          | 2       | 1                       | 0                     | 2     | 0      | 3                 | ı        | 20          | 1           | -                    | 95     |
| A. | AEC/VAC         | AEC/VAC                                       | AEC/VAC      | 2       | 2/1/0                   | 0                     | 0/2/4 | 3/3/0  | 0/2/3             | 25/1 5/0 | 0/25        | 25/2<br>0/0 | 50/40/0 0/0/50       | 0/0/20 |
|    |                 | Total   |              | 20      |                         |                       |       |        |                   |          |             |             |                      |        |
|    |                 |   |              |         |                         |                       |       |        |                   |          |             |             |                      |        |

|                       |                         | (                     | PRE              | ı                   | 1            | ı        | ı                                     | 1   | 0/0/20         |                             |       |                          | I                            | ı                 | I            | ı                                 | ı            | 0/0/20         |       |
|-----------------------|-------------------------|-----------------------|------------------|---------------------|--------------|----------|---------------------------------------|---|----------------|-----------------------------|-------|--------------------------|------------------------------|-------------------|--------------|-----------------------------------|--------------|----------------|-------|
|                       |                         | Relative Weights (%)  | ETE              | 50                  | 50           | 40       | 40                                    | 40  | 50/40/0 0/0/50 |                             |       |                          | 40                           | 40                | 40           | 40                                | 40           | 50/40/0 0/0/50 |       |
|                       |                         | e Wei                 | MTE              | 25                  | 25           | 20       | 20                                    | 20  | 25/2<br>0/0    |                             |       |                          | 20                           | 20                | 20           | 20                                | 20           | 25/2<br>0/0    |       |
|                       |                         | Relativ               | PRS              | 1                   | ı            | 25       | 25                                    | 25  | 0/25           |                             |       |                          | 25                           | 25                | 25           | 25                                | 25           | 0/25           |       |
|                       |                         | F                     | CWS              | 25                  | 25           | 15       | 15                                    | 15  | 25/1 5/0       |                             |       |                          | 15                           | 15                | 15           | 15                                | 15           | 25/1 5/0       |       |
|                       |                         | Exam Duration (h)     | Theory Practical | 0                   | 0            | 0        | 0                                     | 0   | 0/2/3          |                             |       |                          | 0                            | 0                 | 0            | 0                                 | 0            | 0/2/3          |       |
|                       |                         | Exam I                | Theory           | 3                   | 3            | 3        | 3                                     | 3   | 3/3/0          |                             |       |                          | 3                            | 3                 | 3            | 3                                 | 3            | 3/3/0          |       |
| <u>,</u>              |                         | ct<br>eek             | Ь                | 0                   | 0            | 2        | 2                                     | 2   | 0/2/           |                             |       |                          | 2                            | 2                 | 2            | 2                                 | 2            | 0/2/           |       |
| logy                  | ter                     | Contact<br>Hours/Week | Н                | 1                   | 1            | 0        | 0                                     | 0   | 0              |                             |       | ter                      | 0                            | 0                 | 0            | 0                                 | 0            | 0              |       |
| out                   | mest                    | C<br>Hou              | Γ                | 3                   | 3            | 3        | 3                                     | 3   | 2/1/           |                             |       | mes                      | 3                            | 3                 | 3            | 3                                 | 8            | 2/1/           |       |
| otecl                 | ird Se                  |                       | Credit           | 4                   | 4            | 4        | 4                                     | 4   | 2              | 2                           | 24    | ırth Se                  | 4                            | 4                 | 4            | 4                                 | 4            | 2              | 22    |
| B.Tech. Biotechnology | II Year: Third Semester |                       | Subject Area     | ESC                 | DCC          | CC       | DCC                                   | DCC   | AEC/VAC        | Mandatory                   |       | II Year: Fourth Semester | ESC                          | DCC               | DCC          | DCC                               | DCC          | AEC/VAC        |       |
|                       |                         | Teaching Scheme       | Course Title     | Applied Mathematics | Cell Biology | Genetics | Fundamentals of Computational Biology | Bioprocess Technology and Downstream Processing | AEC/VAC        | Community Engagement Course | Total |                          | Data Structure and Algorithm | Molecular Biology | Microbiology | Advances in Computational Biology | Biochemistry | AEC/VAC        | Total |
|                       |                         |                       | Subject<br>Code  | BT201               | BT203        | BT205    | BT207                                 | BT209   | AEC/VAC        | MS299                       |       |                          | BT202                        | BT204             | BT206        | BT208                             | BT210        | AEC/VAC        |       |
|                       |                         |                       | s. S.            | 1                   | 2            | 3        | 4                                     | 5   | 9              | 7                           |       |                          | 1                            | 2                 | 3            | 4                                 | S            | 9              |       |

|        |              | B                                       | B. Tech. Biotechnology   | techno      | log       | <b>&gt;</b>           |         |        |                   |       |        |                      |         |     |
|--------|--------------|---|--------------------------|-------------|-----------|-----------------------|---------|--------|-------------------|-------|--------|----------------------|---------|-----|
|        |              |   | III Year: Fifth Semester | h Semes     | ter       |                       |         |        |                   |       |        |                      |         |     |
|        |              | Teaching Scheme                         |                          |             | Co<br>Hou | Contact<br>Hours/Week | t<br>ek | Exam I | Exam Duration (h) | Re    | elativ | Relative Weights (%) | ghts (% | (0) |
| S. No. | Subject Code | Course Title                            | Subject Area             | Credit      | Т         | Τ                     | Ь       | Theory | Practical         | CWS   | PRS    | MTE                  | ETE     | PRE |
|        | BT301        | Immunology and Immuno-<br>Technology    | DCC                      | 4           | æ         | 0                     | 2       | 3      | 0                 | 15    | 25     | 20                   | 40      | ı   |
| 2      | BT303        | Genetic Engineering                     | DCC                      | 4           | 3         | 0                     | 2       | 3      | 0                 | 15    | 25     | 20                   | 40      | ı   |
| 3      | BT305        | Environmental Biotechnology             | DCC                      | 4           | 3         | 1                     | 0       | 3      | 0                 | 25    | 1      | 25                   | 50      | ı   |
| 4      | HU301        | Engineering Economics                   | SEC                      | 3           | 3         | 0                     | 0       | 3      | 0                 | 25    | ı      | 25                   | 50      | ı   |
| v      | BT3XX        | Discipline Specific Elective Course - 1 | DEC                      | 4           | 3/3       | 0/1                   | 2/0     | 3      | 0                 | 15/25 | 5 25/0 | ) 20/25              | 40/50   | 1   |
| 9      | GECXXX       | Generic Elective Course - 1             | GEC                      | 4           | 3/3       | 0/1                   | 2/0     | 3      | 0                 | 15/25 | 5 25/0 | ) 20/25              | 40/50   | ı   |
|        |              | Total                                   |                          | 23          |           |                       |         |        |                   |       |        |                      |         |     |
|        |              |   | III Year: Sixth          | th Semester | ster      |                       |         |        |                   |       |        |                      |         |     |
| 1      | BT302        | Plant Biotechnology                     | DCC                      | 4           | 3         | 0                     | 2       | 3      | 0                 | 15    | 25     | 20                   | 40      | -   |
| 2      | BT304        | Animal Biotechnology                    | DCC                      | 4           | 3         | 0                     | 2       | 3      | 0                 | 15    | 25     | 20                   | 40      | -   |
| 3      | MG302        | Fundamentals of Management              | SEC                      | 3           | 3         | 0                     | 0       | 3      | 0                 | 25    | ı      | 25                   | 50      | ı   |
| 4      | BT3XX        | Discipline Specific Elective Course - 2 | DEC                      | 4           | 3/3       | 0/1                   | 2/0     | 3      | 0                 | 15/25 | 5 25/0 | ) 20/25              | 40/50   | ı   |
| 5      | BT3XX        | Discipline Specific Elective Course - 3 | DEC                      | 4           | 3/3       | 0/1                   | 2/0     | 3      | 0                 | 15/25 | 5 25/0 | ) 20/25              | 40/50   | ı   |
| 9      | GECXXX       | Generic Elective Course - 2             | GEC                      | 4           | 3/3       | 0/1                   | 2/0     | 3      | 0                 | 15/25 | 5 25/0 | 20/25                | 40/50   | ı   |
|        |              | Total                                   |                          | 23          |           |                       |         |        |                   |       |        |                      |         |     |
|        |              |   |                          |             |           |                       |         |        |                   |       |        |                      |         |     |

|        |                  |   | B. To           | B. Tech. Biotechnology    | chno    | logy                  |     |        |                   |       |        |                        |        |     |
|--------|------------------|---|-----------------|---------------------------|---------|-----------------------|-----|--------|-------------------|-------|--------|------------------------|--------|-----|
|        |                  |   | IV Ye           | IV Year: Seventh Semester | Seme    | ster                  |     |        |                   |       |        |                        |        |     |
|        |                  | Teaching Scheme                         |                 |                           | )<br>Ho | Contact<br>Hours/Week | , k | Exam I | Exam Duration (h) | Rel   | lative | Relative Weights (%)   | hts (% |     |
| S. No. | Subject<br>Code  | Course Title                            | Subject<br>Area | Credit                    | Т       | L                     | Ь   | Theory | Practical         | CWS   | PRS    | PRS MTE                | ETE    | PRE |
| 1      | BT401            | B. Tech Project-I                       | ЭЭП             | 7                         | I       | I                     | ı   | 1      | -                 | ı     | 40     | I                      | ı      | 09  |
| 2      | BT403            | Internship                              | DCC             | 2                         | I       | ı                     | ı   | ı      | ı                 | ı     | 40     | I                      | ı      | 09  |
| c      | BT4XX            | Discipline Specific Elective Course – 4 | DEC             | 4                         | 3/3     | 0/1                   | 2/0 | 3      | 0                 | 15/25 | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  | ı   |
| 4      | BT4XX            | Discipline Specific Elective Course – 5 | DEC             | 4                         | 3/3     | 0/1                   | 2/0 | 3      | 0                 | 15/25 | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  | ı   |
| 5      | GECXXX           | Generic Elective Course - 3             | GEC             | 4                         | 3/3     | 0/1                   | 2/0 | 3      | 0                 | 15/25 | 25/0   | 20/25                  | 40/50  | ı   |
| 9      | VACXXX           | V ACXXX Indian Knowledge System         | VAC             | Non Credit                |         |                       |     |        |                   |       |        |                        |        |     |
|        |                  | Total                                   |                 | 18                        |         |                       |     |        |                   |       |        |                        |        |     |
|        |                  |   | IV              | IV Year: Eight Semester   | Semes   | ter                   |     |        |                   |       |        |                        |        |     |
| 1      | BT402            | B. Tech Project-II                      | DCC             | 8                         | I       | ı                     | ı   | ı      | -                 | ı     | 40     | ı                      | ı      | 09  |
| 2      | BT4XX            | Discipline Specific Elective Course – 6 | DEC             | 4                         | 3/3     | 0/1                   | 2/0 | 3      | 0                 | 15/25 | 25/0   | 15/25 25/0 20/25       | 40/50  | I   |
| 3      | GECXXX           | Generic Elective Course -4              | GEC             | 4                         | 3/3     | 0/1                   | 2/0 | 3      | 0                 | 15/25 | 25/0   | 15/25 25/0 20/25       | 40/50  | ı   |
|        |                  | Total                                   |                 | 16                        |         |                       |     |        |                   |       |        |                        |        |     |
| Cumı   | Cumulative Total |   |                 | 166                       |         |                       |     |        |                   |       |        |                        |        |     |

### B. Tech. Biotechnology

### Discipline Specific Elective Courses

| Discipline | e Specific Elective Course – 1 (Semester - 5)       | Departm   | nental Elective Course -4 & 5(Semester - 7)          |
|------------|---|-----------|--|
| BT307      | Instrumentation in Biotechnology                    | BT405     | Structural Biology                                   |
| BT309      | Food Biotechnology                                  | BT407     | Principles and practice in Public Health             |
| BT311      | Object oriented Programming                         | BT409     | Rehabilitation Engineering                           |
| BT313      | Introduction to Biomedical Engineering              | BT411     | System Biology                                       |
| BT315      | Thermodynamics of Biological System                 | BT413     | Advanced Bioanalytical Techniques                    |
| BT317      | Current topics in Biotechnology                     | BT415     | Clinical Biotechnology                               |
| BT319      | Cancer Biology                                      | BT417     | Plant Metabolic Engineering                          |
| BT321      | Pharmacogenomics and Personalized Medicine          | BT419     | Crop protection and Pest management                  |
| BT323      | Drug Design and Delivery                            | BT421     | Biosensor  |
| BT325      | Minor Project (Only for students who opt for Minor) | BT423     | Green Energy Technology                              |
|            |   | BT425     | Food Engineering & Biotechnology                     |
|            |   | BT427     | Waste water treatment                                |
|            |   | BT429     | Bioprocess Plant Designing                           |
|            |   | BT431     | Bioethics and Intellectual Property Rights           |
|            |   | BT433     | Biomedical Instrumentation, biosensor and transducer |
|            |   | BT435     | Biostatistics  |
| Discipline | e Specific Elective Course - 2 & 3 (Semester - 6)   | Disciplin | ne Specific Elective Course – 6 (Semester - 8)       |
| BT306      | Stem Cells and Regenerative Medicine                | BT404     | Bioprocess Plant Design                              |
| BT308      | Metabolic Engineering                               | BT406     | Population Genetics                                  |
| BT310      | Ecology and Evolution                               | BT408     | Biopolymers  |
| BT312      | Transgenic Technology                               | BT410     | Genomics in Medicine                                 |
| BT314      | Bioenergy and Biofuels                              | BT412     | Nanobiotechnology                                    |
| BT316      | Enzymology and Enzyme Technology                    | BT414     | Medical Physics                                      |
| BT318      | Protein Engineering                                 | BT416     | Pharmaceutical Sciences                              |
| BT320      | Technological Application in Food Technology        | BT418     | Agriculture Microbiology                             |
| BT322      | Medical Microbiology                                | BT420     | Nutraceuticals                                       |
| BT324      | Industrial Biotechnology                            | BT422     | Tissue Engineering and Artificial Organs             |
| BT326      | Concepts in Neurobiology                            |           |  |
| BT328      | Bioinformatics approaches in Complex disorders      |           |  |
| BT330      | Plant Bioinformatics                                |           |  |
| BT332      | Biomaterials  |           |  |
| BT334      | Nano-Biotechnology and Nanomedicine                 |           |  |
| BT336      | Biomaterials and clinical devices                   |           |  |
| BT338      | Basic Epidemiology                                  |           |  |
| BT340      | Biodiversity and Bioresource planning               |           |  |
| BT342      | Principle of imaging processing in medicine         |           |  |
| BT344      | Genomics and Proteomics                             |           |  |

# **DEPARTMENT OF CIVIL ENGINEERING**

• Scheme of B. Tech. Civil Engineering

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| Traching Scheme  |              |   | B. Tech. Civil Engineering | Civil    | Engir   | ıeeri           | ng    |        |                 |             |                     |        |         |        |
|--|--------------|---|----------------------------|----------|---------|-----------------|-------|--------|-----------------|-------------|---------------------|--------|---------|--------|
| Contact         Exam Duration         Relative Weight           Hours/Week         (h)         (h)<  |              |   | I Yea                      | r: First | Semes   | ter             |       |        |                 |             |                     |        |         |        |
| Mathematics - I BSC         4         3         1         0         3         0         25         25           Physics         Basic Electrical Eagmeering II Bsic Electrical Eagmeering II Basic Mechanical Eagmeering II ESC         4         3         0         2         3         0         15         25         20           Basic Electrical Eagmeering II Basic Mechanical Eagmeering II Bsic Mechanical Eagmeering II Bsic Mechanical Eagmeering II ESC         4         3         0         2         3         0         15         25         20           Testing of Civil Engineering Adentalis         SEC         2         1         0         2         3         0         15         25         20           AEC/VAC         2         1         0         2         3         0         15         25         20           AEC/VAC         2         1         0         2         3         0         2         3         0         2         3         0         2         3         0         2         3         0         2         3         0         2         3         0         2         3         0         2         3         0         2         3         0         2   |              | Teaching Scheme                           |                            |          | Co      | ontact<br>s/Wee | k     | Exam I | Ouration<br>(h) | F           | Relativ             | 'e Wei | ghts (% | (      |
| Mathematics - I         BSC         4         3         1         0         3         0         25         -         25         -         25         -         25         -         25         -         25         -         25         -         25         2         2         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         15         3         0         1         3         0         3         0         1         3         0         3         0         1         3         0         3         0         1         3         1         0         3         0         3         1         3         1         1         3         1         3         1         3         1         3   | Subject Code | Course Title                              | Subject Area               | Credit   | Γ       | Η               | Ь     | Theory |                 | CWS         | PRS                 | MTE    | ETE     | PRE    |
| Physics         BSC         4         3         0         2         3         0         15         25         20           Basic Electrical Engineering-II         ESC         4         3         0         2         3         0         15         25         20           Basic Mechanical Engineering Engineering Sec         ESC         4         3         0         2         3         0         15         25         20           Materials Materials Anticomering Fundamental Sec         AEC/VAC         2         1         0         2         0         3         0         5         2         20         1         2         3         0         15         25         2         2         2         1         0         2         3         0         15         2         2         2         1         0         2         0         3         0         2         2         1         0         2         0         2         3         0         2         3         0         2         2         1         0         2         3         0         2         3         0         2         3         0         2         3   | AM101        | Mathematics - I                           | BSC                        | 4        | 3       | 1               | 0     | 3      | 0               | 25          | 1                   | 25     | 50      | ı      |
| Basic Electrical Engineering-III         ESC         4         3         0         2         3         0         15         25         20           Basic Mechanical Engineering Engineering Strong Materials         Esc         4         3         0         2         3         0         15         25         20           AEC/VAC         2         1         0         2         0         3         -         50         -         3         0         2         30         -         3         0 <td< td=""><td>AP101</td><td>Physics</td><td>DSC</td><td>4</td><td>ε</td><td>0</td><td>2</td><td>3</td><td>0</td><td>15</td><td>25</td><td>20</td><td>40</td><td>ı</td></td<>   | AP101        | Physics                                   | DSC                        | 4        | ε       | 0               | 2     | 3      | 0               | 15          | 25                  | 20     | 40      | ı      |
| Basic Mechanical Engineering Engineering Engineering Engineering Engineering SEC         4         3         0         2         3         0         15         25         20           Testing of Civil Engineering Testing of Civil Engineering Attack         SEC         1         0         2         0         3         -         50         -         50         -         50         -         50         -         50         -         -         50         -         50         -         -         50         -         50         -         -         - <td>EE105</td> <td>Basic Electrical<br/>Engineering-II</td> <td>ESC</td> <td>4</td> <td>3</td> <td>0</td> <td>2</td> <td>3</td> <td>0</td> <td>15</td> <td>25</td> <td>20</td> <td>40</td> <td>ı</td> | EE105        | Basic Electrical<br>Engineering-II        | ESC                        | 4        | 3       | 0               | 2     | 3      | 0               | 15          | 25                  | 20     | 40      | ı      |
| Testing of Civil Engineering Materials Materials         SEC         2         1         0         2         0         3         -         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         50         -         50         -         50         50         -         50         -         50         50         -         50         0         -         50         50         -         50         0         -         50         50         -         50         0         -         50         50         -         50         50         -         50         50         50         -         50         50         -         50         50         -         50         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         -         50         - <td>ME107</td> <td>Basic Mechanical<br/>Engineering</td> <td>ESC</td> <td>4</td> <td>8</td> <td>0</td> <td>2</td> <td>3</td> <td>0</td> <td>15</td> <td>25</td> <td>20</td> <td>40</td> <td>ı</td>                               | ME107        | Basic Mechanical<br>Engineering           | ESC                        | 4        | 8       | 0               | 2     | 3      | 0               | 15          | 25                  | 20     | 40      | ı      |
| AEC/VAC         AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         25/1         5/50  | CE103        | Testing of Civil Engineering<br>Materials |                            | 2        | 1       | 0               | 2     | 0      | 3               | I           | 50                  |        | ı       | 50     |
| I Year: Second Semester    I Year: Second Semester   Second Semester   | AEC/VAC      | AEC/VAC                                   | AEC/VAC                    | 2        | 2/1/0   | 0               | 0/2/4 | 3/3/0  | 0/2/3           | 25/1<br>5/0 | 0/2 <i>5</i><br>/50 |        | 50/40/0 | 0/0/20 |
| I Year: Second Semester   I Year: Second Semester     Mathematics-II   |              | Total                                     |                            | 20       |         |                 |       |        |                 |             |                     |        |         |        |
| Mathematics-III         BSC         4         3         1         0         3         0         2         3         0         15         25         -         25           Statistical Methods for Engineers         ESC         4         3         1         0         3         0         15         25         20           Mechanics of Solids         DCC         4         3         0         2         3         0         15         25         20           Building Design         SEC         2         1         0         2         3         0         15         25         20           AEC/VAC         AEC/VAC         2         2/1/0         0         2/3         3/3/0         6/2/3         5/0         5/0         5/0         5/0         6/0           Total         Total         20         1         0         1         0         2         1         0         2         1         0         2         1         0         2         0         0         2         0         0         2         0         0         0         0         0         0         0         0         0         0 <td< td=""><td></td><td></td><td>I Year:</td><td></td><td>nd Seme</td><td>ester</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>  |              |   | I Year:                    |          | nd Seme | ester           |       |        |                 |             |                     |        |         |        |
| Statistical Methods for Engineers         ESC         4         3         1         0         3         0         15         25         20           Engineers         Engineers         DCC         4         3         0         2         3         0         15         25         2           Mechanics of Solids         DCC         4         3         0         2         3         0         15         25         20           Engineering Graphics & SEC         SEC         2         1         0         2         0         3         -         50         -           Building Design         AEC/VAC         2         2/1/0         0         2/3         3/3/0         0/2/3         5/0         5/0         5/0         9/0           Total         Total         -         -         -         -         -         5/0         1         -  | AM102        | Mathematics-II                            | BSC                        | 4        | 3       | 1               | 0     | 3      | 0               | 25          | -                   | 25     | 50      | ı      |
| Statistical Methods for Engineers         ESC         4         3         1         0         3         0         25         -         25           Mechanics of Solids         DCC         4         3         0         2         3         0         15         25         20           Engineering Graphics & SEC         2         1         0         2         0         3         -         50         -           Building Design         AEC/VAC         2         2/1/0         0         2/1/0         0         2/3/0         6/2/3         5/0         5/0         5/0         6/0           Total         Total         -         -         -         -         -         5/0         5/0         5/0         6/0   | CO102        | Programming Fundamentals                  | ESC                        | 4        | 8       | 0               | 2     | 3      | 0               | 15          | 25                  | 20     | 40      | ı      |
| Mechanics of Solids         DCC         4         3         0         2         3         0         15         25         20           Engineering Graphics & Building Design         SEC         2         1         0         2         0         3         -         50         -           AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         25/1         0/2         25/2           Total         20         2         2         0  | CE102        | Statistical Methods for Engineers         | ESC                        | 4        | 3       | 1               | 0     | 3      | 0               | 25          | ı                   | 25     | 50      | ı      |
| Engineering Graphics & SEC         2         1         0         2         0         3         -         50         -           Building Design         AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         25/1         0/2         25/2         25/2         0/0           Total         Total         20         2         0  | CE104        | Mechanics of Solids                       | ЭЭП                        | 4        | 8       | 0               | 2     | 3      | 0               | 15          | 25                  | 20     | 40      | ı      |
| AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         25/1         0/25         25/2           Total         20   | CE106        | Engineering Graphics & Building Design    | SEC                        | 2        | 1       | 0               | 2     | 0      | 3               | ı           | 95                  | ı      | 1       | 50     |
|  | AEC/VAC      | AEC/VAC                                   | AEC/VAC                    | 2        | 2/1/0   | 0               | 0/2/4 | 3/3/0  | 0/2/3           | 25/1<br>5/0 | 0/25<br>/50         |        | 50/40/0 | 0/0/20 |
|  |              | Total                                     |                            | 20       |         |                 |       |        |                 |             |                     |        |         |        |

| II Year: Third Semester   |     |         |   | R. Tech         | Civ     | il Engi    | neeri            | ng     |        |              |             |         |      |                |                |
|---|-----|---------|---|-----------------|---------|------------|------------------|--------|--------|--------------|-------------|---------|------|----------------|----------------|
| Subject Code  |     |         |   |                 | ear: T  | hird Sem   | ester            | o<br>E |        |              |             |         |      |                |                |
| Subject Code         Course Title         Subject Area         Credit         L         T         P         Theory         Practical         CWB         RT           CE201         Introduction to Earth.         ESC         4         3         1         0         3         0         25         -         25           CE203         Design of Structure-1         DCC         4         3         0         2         3         2         15         2         2           CE203         Surveyind Rechanics         DCC         4         3         0         2         3         2         15         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3  |     |         | Teaching Scheme   |                 |         | unoH<br>Cc | ontact<br>s/Week |        | Exam ] | Duration (h) | <u> </u>    | \elativ | e We | ights (%       | (0)            |
| CE201         Introduction to Earth, Amonosphere, Climate and Amonosphere, Climate and Environmental Science CE203         Environmental Environmental Science Environmental Environmental Science Environmental Science Environmental Science Environmental Science Environmental Environmenta                                       | S N |         | Course Title  | Subject<br>Area | Credit  | Γ          | Т                | Ь      | Theory | Practical    | CWS         |         | MTE  | ETE            | PRE            |
| CE203         Design of Structure-1         DDCC         4         3         0         2         3         2         15         25         20           CE205         Fluid Mochanics         DCC         4         3         0         2         3         2         15         25         20           CE207         Surveying & DCC         4         3         0         2         3         2         15         25         20           CE209         Analysis of Structures-1         DCC         4         3         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         AEC/VAC         2         2/1/0         0         2         3         2         15         25         20           MS299         Community Engagement         Maderory         2         2/1/0         0         2/2         3/3         0/2/3         3/3         0         3         0         0         0         2         3         0         0         0         3/3         0         0         0         0         0         0         0         0         0         0         0         0         0 </td <td></td> <td>CE201</td> <td>Introduction to Earth, Atmosphere, Climate and Environmental Sciences</td> <td>ESC</td> <td>4</td> <td>3</td> <td>-</td> <td>0</td> <td>8</td> <td>0</td> <td>25</td> <td>ı</td> <td>25</td> <td>50</td> <td>ı</td>  |     | CE201   | Introduction to Earth, Atmosphere, Climate and Environmental Sciences | ESC             | 4       | 3          | -                | 0      | 8      | 0            | 25          | ı       | 25   | 50             | ı              |
| CE205         Fluid Mechanics         DCC         4         3         0         2         3         2         15         25         20           CE207         Surveying & DCC         DCC         4         3         0         2         3         2         15         25         20           CE209         Analysis of Structures-I         DCC         4         3         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         5/0         5/0         0/0           MS299         Community Engagement         Amadatory         2         2/1/0         0         0/2/4         3/3/0         0/2/3         5/0         5/0         0/0         0/2/3         5/0         5/0         0/0         0/0         <  | 2   | CE203   | Design of Structure-I   | ЭЭП             | 4       | 3          | 0                | 2      | 3      | 2            | 15          | 25      | 20   | 40             | ı              |
| CE207         Surveying & Econformatics         DCC         4         3         0         2         3         2         15         25         20           CE209         Analysis of Structures-I         DCC         4         3         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         25/1         0/2         25/1         0/2         0  | 3   | CE205   | Fluid Mechanics   | DCC             | 4       | 3          | 0                | 2      | 3      | 2            | 15          | 25      | 20   | 40             | ı              |
| CE209         Analysis of Structures-1         DCC         4         3         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         25/1         0/25         25/2           MS299         Community Engagement         Mandatory         2         4         3         1         0         0/2/4         3/3/0         0/2/3         25/1         0/25         25/2         0/2           Total         II Year: Fourth Semester         II Year: Fourth Semester         1         0         3         0         2         3         0         2         2         1         0         3         0         2         2         1         0         3         0         2         3         0         2         3         0         2         3         0         2         3         0         0         2         3         0         2         3         0         2         3         0         2         3         0         0         2         3         0         0         0         0         0         0  | 4   | CE207   | Surveying & Geoinformatics  | DCC             | 4       | 3          | 0                | 2      | 3      | 2            | 15          | 25      | 20   | 40             | ı              |
| AEC/VAC         AEC/VAC         AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         25/1         25/1         25/2  | 5   | CE209   | Analysis of Structures -I   | ЭЭП             | 4       | 3          | 0                | 2      | 3      | 2            | 15          | 25      | 20   | 40             | ı              |
| MS299         Community Engagement Total         Mandatory         2         4         5         6         7  | 9   | AEC/VAC | AEC/VAC   | AEC/VAC         | 2       | 2/1/0      | 0                | 0/2/4  |        | 0/2/3        | 25/1 5/0    | 0/25    |      | 50/40/0 0/0/50 | 0/0/20         |
| Total I Year: Fourth Semester.  II Year: Fourth Semester.  II Sear: Fourth Semester.  CE202 Intelligent Transportation  | 7   | MS299   | Community Engagement<br>Course  | Mandatory       | 2       |            |                  |        |        |              |             |         |      |                |                |
| The content of the |     |         | Total   |                 | 24      |            |                  |        |        |              |             |         |      |                |                |
| CE202         Analysis of Structure-II         ESC         4         3         1         0         3         0         25         -         25           CE204         Analysis of Structure-II         DCC         4         3         0         2         3         2         15         25         20           CE206         Soil Mechanics         DCC         4         3         0         2         3         2         15         25         20           CE208         Environmental         DCC         4         3         0         2         3         2         15         25         20           Machines         Hydraulic & Hydraulics         Hydraulics         Hydraulics         AEC/VAC         4         3         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         2         2/1/0         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         2         2/1/0         0         0         2         3/3/0         0/2/3         5/0         5/0         5/0         5/0         5/0         5/0         5/0   |     |         |   |                 | ear: Fc | ourth Sen  | nester           |        |        |              |             |         |      |                |                |
| CE204         Analysis of Structure-II         DCC         4         3         0         2         3         2         15         25         20           CE206         Soil Mechanics         DCC         4         3         0         2         3         2         15         25         20           CE208         Engineering-I         DCC         4         3         0         2         3         2         15         25         20           Machines         Machines         DCC         4         3         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         4         3         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         5/0         5/0         0/0           Total         Total         1  |     | CE202   | Smart City Planning and<br>Intelligent Transportation                 | ESC             | 4       | 3          | 1                | 0      | 3      | 0            | 25          | 1       | 25   | 50             | ı              |
| CE206         Soil Mechanics         DDCC         4         3         0         2         3         2         15         25         20           Engineering-I         DDCC         4         3         0         2         3         2         15         25         20           Machines         Machines         DCC         4         3         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         AEC/VAC         2         2/1/0         0         2/3         3/3/0         0/2/3         5/0         5/0         5/0         5/0         0/0           Total   | 2   | CE204   | Analysis of Structure-II  | ЭЭП             | 4       | 3          | 0                | 2      | 3      | 2            | 15          | 25      | 20   | 40             | I              |
| CE208         Environmental Engineering-II         DCC         4         3         0         2         3         2         15         25         20           CE210         Hydraulic & Hydraulics         DCC         4         3         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         5/0         5/0         5/0         0/2           Total   | 3   | CE206   | Soil Mechanics  | DCC             | 4       | 3          | 0                | 2      | 3      | 2            | 15          | 25      | 20   | 40             | I              |
| CE210         Hydraulic & Hydraulics         DCC         4         3         0         2         3         2         15         25         20           AEC/VAC         AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         25/1         0/2/3         25/2         0/0           Total         22            | 4   | CE208   | Environmental<br>Engineering-I  | DCC             | 4       | 3          | 0                | 2      | 3      | 2            | 15          | 25      | 20   | 40             | -              |
| AEC/VAC         AEC/VAC         2         2/1/0         0         0/2/4         3/3/0         0/2/3         25/1         0/25         25/2           Total         Total         22         2         2         2         2         2         2         0/0         0 <td< td=""><td>5</td><td>CE210</td><td>Hydraulic &amp; Hydraulics<br/>Machines</td><td>DCC</td><td>4</td><td>3</td><td>0</td><td>2</td><td>3</td><td>2</td><td>15</td><td>25</td><td>20</td><td></td><td>ı</td></td<>   | 5   | CE210   | Hydraulic & Hydraulics<br>Machines                                    | DCC             | 4       | 3          | 0                | 2      | 3      | 2            | 15          | 25      | 20   |                | ı              |
|   | 9   | AEC/VAC | AEC/VAC   | AEC/VAC         | 2       | 2/1/0      | 0                | 0/2/4  |        | 0/2/3        | 25/1<br>5/0 | 0/25    |      |                | 50/40/0 0/0/50 |
|   |     |         | Total   |                 | 22      |            |                  |        |        |              |             |         |      |                |                |

|           |              | <b>B.</b> 7                             | 3. Tech. Civil Engineering | Engin   | eeri       | ng                    |     |             |                   |       |        |                      |             |     |
|-----------|--------------|---|----------------------------|---------|------------|-----------------------|-----|-------------|-------------------|-------|--------|----------------------|-------------|-----|
|           |              |   | III Year: Fifth Semester   | n Semes | ter        |                       |     |             |                   |       |        |                      |             |     |
|           |              | Teaching Scheme                         |                            |         | Co<br>Hour | Contact<br>Hours/Week | ek  | Exam D<br>( | Exam Duration (h) | Re    | slativ | Relative Weights (%) | ghts (%     | 0)  |
| S.<br>No. | Subject Code | Course Title                            | Subject Area               | Credit  | Т          | L                     | Ь   | Theory      | Practical         | CWS   | PRS    | MTE                  | ETE         | PRE |
|           | CE301        | Geotechnical Engineering                | DCC                        | 4       | 3          | 0                     | 2   | 3           | 0                 | 15    | 25     | 20                   | 40          | ı   |
| 2         | CE303        | Environment Engineering-II              | DCC                        | 4       | 3          | 0                     | 2   | 3           | 0                 | 15    | 25     | 20                   | 40          | ı   |
| B         | CE305        | Transportation Engineering              | DCC                        | 4       | 3          | 0                     | 2   | 3           | 0                 | 15    | 25     | 20                   | 40          | ı   |
| 4         | MG301        | Fundamentals of Management              | SEC                        | 3       | 3          | 0                     | 0   | 3           | 0                 | 25    | ı      | 25                   | 50          | ı   |
| S         | CE3XX        | Discipline Specific Elective Course - 1 | DEC                        | 4       | 3/3        | 0/1                   | 2/0 | 3           | 0                 | 15/25 | 25/0   | ) 20/25              | 40/50       | ı   |
| 9         | GECXXX       | Generic Elective Course - 1             | GEC                        | 4       | 3/3        | 0/1                   | 2/0 | 3           | 0                 | 15/25 | 25/0   | 20/25                | 20/25 40/50 | ı   |
|           |              | Total                                   |                            | 23      |            |                       |     |             |                   |       |        |                      |             |     |
|           |              |   | III Year: Sixth Semester   | h Semes | ster       |                       |     |             |                   |       |        |                      |             |     |
| 1         | CE302        | Design of steel structures              | DCC                        | 4       | 3          |                       | 0   | 3           | 0                 | 25    | ı      | 25                   | 90          | ı   |
| 2         | CE304        | Water Resource Engineering              | DCC                        | 4       | 3          | 0                     | 2   | 3           | 0                 | 15    | 25     | 20                   | 40          | ı   |
| 3         | HU302        | Engineering Economics                   | SEC                        | 3       | 3          | 0                     | 0   | 3           | 0                 | 25    | ı      | 25                   | 95          | 1   |
| 4         | CE3XX        | Discipline Specific Elective Course -2  | DEC                        | 4       | 3/3        | 0/1                   | 2/0 | 3           | 0                 | 15/25 | 25/0   | ) 20/25              | 40/50       | ı   |
| 5         | CE3XX        | Discipline Specific Elective Course - 3 | DEC                        | 4       | 3/3        | 0/1                   | 2/0 | 3           | 0                 | 15/25 | 25/0   | ) 20/25              | 40/50       | -   |
| 9         | GECXXX       | Generic Elective Course - 2             | GEC                        | 4       | 3/3        | 0/1                   | 2/0 | 3           | 0                 | 15/25 | 25/0   | 20/25                | 40/50       | Ī   |
|           |              | Total                                   |                            | 23      |            |                       |     |             |                   |       |        |                      |             |     |

|        |                  |  | R Tool          | Took Civil Prairooving    | vinoor. | ing  |     |             |                   |             |        |                        |        |     |
|--------|------------------|--|-----------------|---------------------------|---------|--|-----|-------------|-------------------|-------------|--------|------------------------|--------|-----|
|        |                  |  | D. 100          | II. CIVII EII             | gilleel | 20<br>11<br>12<br>13<br>14<br>14<br>14<br>14<br>14<br>14<br>14<br>14<br>14<br>14<br>14<br>14<br>14 |     |             |                   |             |        |                        |        |     |
|        |                  |  | IV Ye           | IV Year: Seventh Semester | Semeste | Х  |     |             |                   |             |        |                        |        |     |
|        |                  | Teaching Scheme                            |                 |                           | Cc      | Contact<br>Hours/Week  |     | Exam [<br>( | Exam Duration (h) | Rej         | lative | Relative Weights (%)   | hts (% |     |
| S. No. | Subject<br>Code  | Course Title                               | Subject<br>Area | Credit                    | Т       | T  | P . | Theory      | Practical         | CWS PRS MTE | PRS    | MTE                    | ETE    | PRE |
| 1      | CE401            | B. Tech Project-I                          | DCC             | 4                         | ı       | ı  | ı   | ı           | ı                 | ı           | 40     | ı                      | ı      | 09  |
| 2      | CE403            | Internship                                 | DCC             | 2                         | ı       | ı  | ı   | ı           | ı                 | ı           | 40     | ı                      | ı      | 09  |
| 3      | CE4XX            | Discipline Specific Elective<br>Course – 4 | DEC             | 4                         | 3/3     | 0/1  | 2/0 | 3           | 0                 | 15/25       | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  | ı   |
| 4      | CE4XX            | Discipline Specific Elective<br>Course – 5 | DEC             | 4                         | 3/3     | 0/1  | 2/0 | 3           | 0                 | 15/25       | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  | ı   |
| 5      | GECXXX           | Generic Elective Course - 3                | GEC             | 4                         | 3/3     | 0/1  | 2/0 | 3           | 0                 | 15/25       | 25/0   | 20/25                  | 40/50  | ı   |
| 9      | VACXXX           | V ACXXX Indian Knowledge System            | VAC             | Non Credit                |         |  |     |             |                   |             |        |                        |        |     |
|        |                  | Total                                      |                 | 18                        |         |  |     |             |                   |             |        |                        |        |     |
|        |                  |  | IV              | IV Year: Eight Semester   | Semeste | ĭ  |     |             |                   |             |        |                        |        |     |
|        | CE402            | B. Tech Project-II                         | DCC             | 8                         | ı       | ı  | ı   | ı           | ı                 | ı           | 40     | ı                      | ı      | 09  |
| 2      | CE4XX            | Discipline Specific Elective<br>Course - 6 | DEC             | 4                         | 3/3     | 0/1  | 2/0 | 3           | 0                 | 15/25       | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  | ı   |
| 3      | GECXXX           | GECXXXX   Generic Elective Course - 4      | GEC             | 4                         | 3/3     | 0/1  | 2/0 | 3           | 0                 | 15/25       | 25/0   | 15/25 25/0 20/25       | 40/50  | i   |
|        |                  | Total                                      |                 | 16                        |         |  |     |             |                   |             |        |                        |        |     |
| Cumı   | Cumulative Total |  |                 | 166                       |         |  |     |             |                   |             |        |                        |        |     |

### B. Tech. Civil Engineering

Discipline Specific Elective Courses

| Discipline | e Specific Elective Course - 1 (Semester - 5)                          | Disciplin    | ne Specific Elective Course - 4 & 5 (Semester - 7)               |
|------------|--|--------------|--|
| CE307      | Application of Geo-informatics, Remote Sensing, and GIS in Engineering | CE405        | Wind Effect on Structures and Wind Energy System                 |
| CE309      | Wind Loads on Structures   | CE407        | Introduction to Building Information Modelling (BIM              |
| CE311      | Disaster Management  | CE409        | Design of Bridges  |
| CE313      | Rock Engineering   | CE411        | Geotechnical Exploration and Excavation Methods                  |
| CE315      | Advanced Mechanics of Soils  | CE413        | Advanced Open Channel Flow                                       |
| CE317      | Water Power Engineering  | CE415        | Flood and Drought Estimation and Management                      |
| CE319      | Water Resources Planning and System Engineering                        | CE417        | Traffic Engineering  |
| CE321      | Computational Fluid Dynamics   | CE419        | Advanced Surveying and Geoinformatics                            |
| CE323      | Quantity Survey and Estimation   | CE421        | Finite Element Method  |
| CE325      | Geodesy and Navigation   | CE423        | Integrated Intelligent Transportation System                     |
| CE327      | AI in Civil Engineering  | CE425        | Forensic Engineering   |
| CE329      | Concrete Technology  | CE427        | Vulnerability and Risk Management                                |
|            |  | CE429        | Computer Methods in Geotechnical Engineering                     |
|            |  | CE431        | Environmental Geo-techniques                                     |
|            |  | CE433        | Geosynthetics  |
|            |  | CE435        | Advanced Hydrology   |
|            |  | CE437        | Urban Water Resources Management                                 |
|            |  | CE439        | Construction Project Management                                  |
|            |  | CE441        | Construction and Design Aspects in Transportation<br>Engineering |
|            |  | CE443        | Traffic and Transport Planning                                   |
|            |  | CE445        | Sustainable Building Materials                                   |
| Discipline | e Specific Elective Course - 2 & 3 (Semester - 6)                      | Disciplin    | ne Specific Elective Course - 6 (Semester - 8)                   |
| CE306      | Infrastructure Resilience and Socio-Economic Dynamics                  | CE404        | Structure Health Monitoring and Sustainability                   |
| CE308      | Advanced Design of Structures  | CE406        | Prestress Concrete Structures                                    |
| CE310      | Advanced Design of Steel Structures                                    | CE408        | Retrofitting of Structures                                       |
| CE312      | Analysis and Design of Underground Structures                          | CE410        | Advance Geotechnical Engineering                                 |
| CE314      | Theory of Elasticity and Plasticity of Soil                            | CE412        | Climate Change and Sustainable Development                       |
| CE316      | Advanced Fluid Mechanics   | CE414        | Urban Planning and Flood Management                              |
| CE318      | Environmental Aspects of Water Resources                               | CE416        | Design of Masonry, Timber & Bamboo Structures                    |
| CE320      | Transportation Safety and Environment                                  | CE418        | Water Resources Management                                       |
| CE322      | Tunnel, Ports, and Harbour engineering                                 | 7            |  |
| CE324      | Experimental Mechanics   | 11           |  |
| CE326      | Earthquake Technology  | 1            |  |
| CE328      | Cyclonic Risk and Management   | 1            |  |
| CE330      | Fire Safety  | <b>1</b>     |  |
| CE332      | Geotechnical Processes   | <b>1</b>     |  |
| CE334      | Transportation Geo-techniques  | <b>     </b> |  |
| CE336      | Design of Hydraulic Structures   | 11           |  |
| CE338      | Advanced Ground Water Hydrology  | <b>-   </b>  |  |
| CE340      | Advanced Transportation Engineering                                    | <del> </del> |  |
| CE342      | Solid Waste Management and Air Pollution                               |              |  |
| CE342      | Building Materials, Masonry, Prestressing and Construction Management  | 7            |  |

# DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

- Scheme of B. Tech. Computer Science and Engineering
- Scheme of B. Tech. Computer Science and Engineering (Data Science and Analytics)

| B. Tech. Compute I Year I Teaching Scheme  Course Title Mathematics - I BSC | B. Tech. Computer Scien  I Year: First Teaching Scheme  Course Title Area  Mathematics - I  BSC  4 | Subject Credit Area BSC 4  | ter Science Cear: First Credit | riel<br>irst | Sem Co. Hours L         | Semester Contact Hours/Week L T 3 1 | ngin d o | eering Exam [ ( Theory |       |             | telativ     | e Wei MTE   | Relative Weights (%) PRS MTE ETE  - 25 50 | PRE -  |
|---|--|--|--------------------------------|--------------|-------------------------|-------------------------------------|----------|------------------------|-------|-------------|-------------|-------------|---|--------|
| CO101<br>EC101  | 101  | Programming Fundamentals Basic Electronics & Communication Engineering | ESC                            | 4 4          | & &                     | 0 0                                 | 2 2      | $\omega$ $\omega$      | 0 0   | 15          | 25          | 20          | 40  | 1 1    |
| ME105<br>CS103  | 105  | Computer Aided Engineering<br>Graphics-II<br>Web Designing             | ESC                            | 4 0          | 3                       | 0                                   | 2 2      | 3                      | 0     | 15          | 25          | 20          | 40  | - 50   |
| AEC/VAC   | VAC  | AEC/VAC<br>Total   | AEC/VAC                        | 2 20         | 2/1/0                   | 0                                   | 0/2/4    | 3/3/0                  | 0/2/3 | 25/1 5/0    | 0/25        | 25/2 0/0    | 50/40/0 0/0/50                            | 0/0/20 |
|   |  |  | I Ye                           | ear: Sec     | I Year: Second Semester | ester                               |          |                        |       |             |             |             |   |        |
| AM102   | 102  | Mathematics-II   | $\mathbf{BSC}$                 | 4            | 3                       | 1                                   | 0        | 3                      | 0     | 25          | =           | 25          | 50  | 1      |
| AP102   | 02   | Physics  | BSC                            | 4            | 3                       | 0                                   | 2        | 3                      | 0     | 15          | 25          | 20          | 40  | 1      |
| CS102   | 02   | Discrete Structure   | ESC                            | 4            | 3                       | _                                   | 0        | 3                      | 0     | 25          | 1           | 25          | 50  | ı      |
| CS104 /<br>DA104  | )4 /<br>04   | Data Structures  | DCC                            | 4            | 3                       | 0                                   | 2        | 3                      | 0     | 15          | 25          | 20          | 40  | ı      |
| CS106   | 90   | Basics of Machine Learning & Application                               | SEC                            | 2            |                         | 0                                   | 2        | 0                      | 3     | ı           | 50          | ı           | ı   | 50     |
| AEC/  | AEC/VAC  | AEC/VAC  | AEC/VAC                        | 2            | 2/1/0                   | 0                                   | 0/2/4    | 3/3/0                  | 0/2/3 | 25/1<br>5/0 | 0/25<br>/50 | 25/2<br>0/0 | 50/40/0 0/0/50                            | 0/0/20 |
|   |  | Total  |                                | 20           |                         |                                     |          |                        |       |             |             |             |   |        |

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|        |                 | B. Tech. Co                                   | omputer Science and Engineering | Scien   | ce an    | d E                   | ngine | ering       |                   |             |        |             |                      |        |
|--------|-----------------|---|---------------------------------|---------|----------|-----------------------|-------|-------------|-------------------|-------------|--------|-------------|----------------------|--------|
|        |                 |   | II Year: Third Semester         | Third S | Semes    | ter                   |       |             |                   |             |        |             |                      |        |
|        |                 | Teaching Scheme                               |                                 |         | moH<br>C | Contact<br>Hours/Week |       | Exam I<br>( | Exam Duration (h) | A           | elativ | e Wei       | Relative Weights (%) | )      |
| S. No. | Subject Code    | Course Title                                  | Subject<br>Area                 | Credit  | Т        | T                     | Ь     | Theory      | Practical         | CWS         | PRS    | MTE         | ETE                  | PRE    |
| -      | CS201           | Digital Logic Design                          | ESC                             | 4       | 3        | 1                     | 0     | 3           | 0                 | 25          | Ţ      | 25          | 50                   | ı      |
| 2      | CS203           | Object Oriented Programming<br>Concepts       | DCC                             | 4       | 3        | 0                     | 2     | 3           | 0                 | 15          | 25     | 20          | 40                   | I      |
| 3      | CS205/<br>DA205 | Design and Analysis of Algorithms             | DCC                             | 4       | 3        | 1                     | 0     | 3           | 0                 | 25          | 1      | 25          | 50                   | I      |
| 4      | CS207           | Operating Systems Design                      | DCC                             | 4       | 3        | 0                     | 2     | 3           | 0                 | 15          | 25     | 20          | 40                   | I      |
| 5      | CS209           | Software Engineering                          | DCC                             | 4       | 8        | 1                     | 0     | 3           | 0                 | 25          | I      | 25          | 50                   | ı      |
| 9      | AEC/VAC         | AEC/VAC                                       | AEC/VAC                         | 2       | 2/1/0    | 0                     | 0/2/4 | 3/3/0       | 0/2/3             | 25/1 5/0    | 0/25   | 25/2<br>0/0 | 50/40/0 0/0/50       | 0/0/20 |
| 7      | MS299           | Community Engagement Course                   | Mandatory                       | 2       |          |                       |       |             |                   |             |        |             |                      |        |
|        |                 | Total   |                                 | 24      |          |                       |       |             |                   |             |        |             |                      |        |
|        |                 |   | II Year: Fourth Semester        | ourth   | Seme     | ster                  |       |             |                   |             |        |             |                      |        |
| 1      | CS202           | Probability and Statistics                    | ESC                             | 4       | 3        | 1                     | 0     | 3           | 0                 | 25          | İ      | 25          | 50                   | I      |
| 2      | CS204           | Theory of Computation                         | DCC                             | 4       | 3        | 1                     | 0     | 3           | 0                 | 25          | -      | 25          | 50                   | ı      |
| 3      | CS206           | Computer System Architecture and Organization | DCC                             | 4       | 3        | 0                     | 2     | 3           | 0                 | 15          | 25     | 20          | 40                   | I      |
| 4      | CS208           | Computer Networks                             | DCC                             | 4       | 3        | 0                     | 2     | 3           | 0                 | 15          | 25     | 20          | 40                   | ı      |
| 8      | CS210           | Database Management Systems                   | DCC                             | 4       | 3        | 0                     | 2     | 3           | 0                 | 15          | 25     | 20          | 40                   | I      |
| 9      | AEC/VAC         | AEC/VAC                                       | AEC/VAC                         | 2       | 2/1/0    | 0                     | 0/2/4 | 3/3/0       | 0/2/3             | 25/1<br>5/0 | 0/25   | 25/2 0/0    | 50/40/0 0/0/50       | 0/0/20 |
|        |                 | Total   |                                 | 22      |          |                       |       |             |                   |             |        |             |                      |        |

|       |              | B. Tech. Computer Science and Engineering | outer Sc                 | ience a  | [ pu | Eng                   | ine      | ering       |                   |       |       |                      |         |     |
|-------|--------------|---|--------------------------|----------|------|-----------------------|----------|-------------|-------------------|-------|-------|----------------------|---------|-----|
|       |              | III                                       | III Year: Fifth Semester | h Semes  | ter  |                       |          | )           |                   |       |       |                      |         |     |
|       |              | Teaching Scheme                           |                          |          | Hou  | Contact<br>Hours/Week | t<br>sek | Exam I<br>( | Exam Duration (h) | Re    | lativ | Relative Weights (%) | ghts (% | (9  |
| S. S. | Subject Code | Course Title                              | Subject<br>Area          | Credit   | Т    | T                     | Ь        | Theory      | Practical         | SMO   | PRS   | MTE                  | ETE     | PRE |
|       | CS301        | Compiler Design                           | DCC                      | 4        | 3    | 0                     | 2        | 3           | 0                 | 51    | 25    | 20                   | 40      | ı   |
| 2     | CS303        | Machine Learning                          | DCC                      | 4        | 3    | 0                     | 2        | 3           | 0                 | 51    | 25    | 20                   | 40      | ı   |
| 3     | CS305        | Parallel Computer Architecture            | DCC                      | 4        | 3    | 1                     | 0        | 3           | 0                 | 25    | I     | 25                   | 50      | ı   |
| 4     | HU301        | Engineering Economics                     | SEC                      | ε        | 3    | 0                     | 0        | 3           | 0                 | 52    | I     | 25                   | 95      | ı   |
| S     | CS3XX        | Discipline Specific Elective Course - 1   | DEC                      | 4        | 3/3  | 0/1                   | 2/0      | 3           | 0                 | 15/25 | 25/0  | 20/25                | 40/50   | I   |
| 9     | GECXXX       | Generic Elective Course - 1               | GEC                      | 4        | 3/3  | 0/1                   | 2/0      | 3           | 0                 | 15/25 | 25/0  | 20/25                | 40/50   | ı   |
|       |              | Total                                     |                          | 23       |      |                       |          |             |                   |       |       |                      |         |     |
|       |              | III                                       | Year: Sixth Semester     | th Semes | ster |                       |          |             |                   |       |       |                      |         |     |
| 1     | CS302        | Information and Network Security          | DCC                      | 4        | 3    | 0                     | 2        | 3           | 0                 | 15    | 25    | 20                   | 40      | I   |
| 2     | CS304        | Data Warehousing and Data Mining          | DCC                      | 4        | 3    | 0                     | 2        | 3           | 0                 | 51    | 25    | 20                   | 40      | I   |
| 3     | MG302        | Fundamentals of Management                | SEC                      | ε        | 3    | 0                     | 0        | 3           | 0                 | 25    | I     | 25                   | 99      | I   |
| 4     | CS3XX        | Discipline Specific Elective Course - 2   | DEC                      | 4        | 3/3  | 0/1                   | 2/0      | 3           | 0                 | 15/25 | 25/0  | 20/25                | 40/50   | I   |
| 5     | CS3XX        | Discipline Specific Elective Course - 3   | DEC                      | 4        | 3/3  | 0/1                   | 2/0      | 3           | 0                 | 15/25 | 25/0  | 20/25                | 40/50   | 1   |
| 9     | GECXXX       | Generic Elective Course - 2               | GEC                      | 7        | 3/3  | 0/1                   | 2/0      | 3           | 0                 | 15/25 | 25/0  | 20/25                | 40/50   | ı   |
|       |              | Total                                     |                          | 23       |      |                       |          |             |                   |       |       |                      |         |     |

|        |                  | B. Tec                                     | h. Comp         | B. Tech. Computer Science and Engineering | ce and     | Eng                   | ginee | ring   |                   |            |        |                        |        |     |
|--------|------------------|--|-----------------|---|------------|-----------------------|-------|--------|-------------------|------------|--------|------------------------|--------|-----|
|        |                  |  | IV Year:        | ar: Seventh Semester                      | Semest     | ter                   |       | )      |                   |            |        |                        |        |     |
|        |                  | Teaching Scheme                            |                 |   | Cc<br>Hour | Contact<br>Hours/Week | K     | Exam I | Exam Duration (h) | Re         | lative | Relative Weights (%)   | hts (% | (9) |
| S. No. | Subject<br>Code  | Course Title                               | Subject<br>Area | Credit                                    | Т          | T                     | d     | Theory | Practical         | CWS        | PRS    | PRS MTE                | ETE    | PRE |
| 1      | CS401            | B. Tech Project-I                          | DCC             | 4   | I          | I                     | -     | ı      | I                 | 1          | 40     | 1                      | 1      | 09  |
| 2      | CS403            | Internship                                 | DCC             | 2   | I          | I                     | I     | ı      | I                 | ı          | 40     | ı                      | ı      | 09  |
| 3      | CS4XX            | Discipline Specific Elective Course - 4    | DEC             | 4   | 3/3        | 0/1                   | 2/0   | 8      | 0                 | 15/25      | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  | ı   |
| 4      | CS4XX            | Discipline Specific Elective<br>Course - 5 | DEC             | 4   | 3/3        | 0/1                   | 2/0   | 3      | 0                 | 15/25      | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  | į   |
| 5      | GECXXX           | Generic Elective Course - 3                | GEC             | 4   | 3/3        | 0/1                   | 7/0   | 3      | 0                 | 15/25 25/0 | 25/0   | 20/25                  | 40/50  | ı   |
| 9      | VACXXX           | V ACXXX Indian Knowledge System            | VAC             | Non Credit                                |            |                       |       |        |                   |            |        |                        |        |     |
|        |                  | Total                                      |                 | 18  |            |                       |       |        |                   |            |        |                        |        |     |
|        |                  |  | IV              | IV Year: Eight Semester                   | emester    |                       |       |        |                   |            |        |                        |        |     |
| 1      | CS402            | B. Tech Project-II                         | DCC             | 8   | I          | I                     | -     | ı      | I                 | 1          | 40     | 1                      | 1      | 09  |
| 2      | CS4XX            | Discipline Specific Elective<br>Course - 6 | DEC             | 4   | 3/3        | 0/1                   | 2/0   | 3      | 0                 | 15/25      | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  | ļ   |
| 3      | GECXXX           | GECXXX Generic Elective Course - 4         | GEC             | 4   | 3/3        | 0/1                   | 2/0   | 3      | 0                 | 15/25      | 25/0   | 15/25 25/0 20/25 40/50 | 40/50  | 1   |
|        |                  | Total                                      |                 | 16  |            |                       |       |        |                   |            |        |                        |        |     |
| Cumr   | Cumulative Total |  |                 | 166                                       |            |                       |       |        |                   |            |        |                        |        |     |

|            | B. Tech. Computer                                 | Science and Enginee     | ering   |
|------------|---|-------------------------|---|
|            | Discipline Spe                                    | ecific Elective Courses |   |
| Discipline | e Specific Elective Course - 1 (Semester - 5)     | Discipline              | Specific Elective Course - 4 & 5 (Semester - 7) |
| CS307      | Modelling and Simulation                          | CS405                   | Real Time System                                |
| CS309      | Distributed System                                | CS407                   | Pattern Recognition                             |
| CS311      | Information Theory and coding                     | CS409                   | Reinforcement Learning                          |
| CS313      | Quantum Computing                                 | CS411                   | Cyber vulnerability and Ethical hacking         |
| CS315      | Advanced Data Structures                          | CS413                   | Computer Vision                                 |
| CS317      | Microprocessors and Interfacing                   | CS415                   | Data Visualization                              |
| CS319      | Computer Graphics                                 | CS417                   | Wireless and Mobile Computing                   |
|            |   | CS419                   | Business Analytics                              |
|            |   | CS421                   | Advance Web Technology                          |
|            |   | CS423                   | Big Data Analytics                              |
|            |   | CS425                   | Cloud Computing                                 |
|            |   | CS427                   | Natural Language Processing                     |
| Discipline | e Specific Elective Course - 2 & 3 (Semester - 6) | Discipline              | Specific Elective Course - 6 (Semester - 8)     |
| CS306      | Optimization Techniques                           | CS404                   | High Performance Computing                      |
| CS308      | Soft Computing                                    | CS406                   | Grid and Cluster Computing                      |
| CS310      | Enterprise Java programming                       | CS408                   | Swarm & Evolutionary Computing                  |
| CS312      | Embedded Systems                                  | CS410                   | Digital Image Processing                        |
| CS314      | Data Compression                                  | CS412                   | Intellectual Property Rights                    |
| CS316      | Parallel Algorithms                               | CS414                   | Cyber Forensics                                 |
| CS318      | Deep Learning                                     | CS416                   | Semantic Web an                                 |
| CS320      | Blockchain and Applications                       |                         |   |
| CS322      | Optical Networks                                  |                         |   |
| CS324      | High Speed Networks                               |                         |   |
| CS326      | Advanced Database Management Systems              |                         |   |
| CS328      | Multimedia System Design                          |                         |   |
| CS330      | Project work related to Minor                     |                         |   |

|        |               | B. Tech. Computer Scien                         |                 | and I   | Ingine                 | ering  | (Dat  | a Scie      | ce and Engineering (Data Science and Analytics) | d Ans   | alyti  | cs)                  |                        |        |
|--------|---------------|---|-----------------|---------|------------------------|--------|-------|-------------|---|---------|--------|----------------------|------------------------|--------|
|        |               |   |                 | [ Year: | I Year: First Semester | emeste | )T    |             |   |         |        |                      |                        |        |
|        |               | Teaching Scheme                                 |                 |         | Contact Hours/Week     | Hours/ | Week  | Exam I<br>( | Exam Duration (h)                               | R       | elativ | Relative Weights (%) | hts (%)                |        |
| S. No. | Subject Code  | Course Title                                    | Subject<br>Area | Credit  | Т                      | T      | Ь     | Theory      | Practical                                       | CWS     | PRS    | MTE                  | ETE                    | PRE    |
| 1      | AM101         | Mathematics – I                                 | BSC             | 4       | 3                      | 1      | 0     | 3           | 0   | 25      | -      | 25                   | 50                     | I      |
| 2      | CO101         | Programming Fundamentals                        | ESC             | 4       | 3                      | 0      | 2     | 3           | 0   | 15      | 25     | 20                   | 40                     | I      |
| 3      | DA101         | Discrete Structure                              | ESC             | 4       | 3                      | -      | 0     | 3           | 0   | 25      | ı      | 25                   | 50                     | ı      |
| 4      | H AM103       | Probability for Data<br>Analytics               | ESC             | 4       | 3                      | 0      | 2     | 3           | 0   | 15      | 25     | 20                   | 40                     | ı      |
| 5      | 5 DA103       | Open-Source Systems and Tools                   | SEC             | 2       | 1                      | 0      | 2     | 0           | 3   | ı       | 90     | -                    | -                      | 50     |
| 9      | AEC/VAC       | AEC/VAC   | AEC/VAC         | 2       | 2/1/0                  | 0      | 0/2/4 | 3/3/0       | 0/2/3   | 25/15/0 | 0/25   | 25/20/0              | 25/20/0 50/40/0 0/0/50 | 0/0/20 |
|        |               | Total   |                 | 20      |                        |        |       |             |   |         |        |                      |                        |        |
|        |               |   | I               | Year:   | Year: Second Semester  | Semes  | ter   |             |   |         |        |                      |                        |        |
| 1      | AM102         | Mathematics-II                                  | BSC             | 4       | 3                      | 1      | 0     | 3           | 0   | 25      | -      | 25                   | 50                     | ı      |
| 2      | AP102         | Physics   | BSC             | 4       | 3                      | 0      | 2     | 3           | 0   | 15      | 25     | 20                   | 40                     | ı      |
| 3      | ) DA102       | Applied Statistical<br>Inference and Simulation | ESC             | 4       | 3                      | 0      | 2     | 3           | 0   | 15      | 25     | 20                   | 40                     | ı      |
| 4      | DA104 / CS104 | Data Structures                                 | DCC             | 4       | 3                      | 0      | 2     | 3           | 0   | 15      | 25     | 20                   | 40                     | ı      |
| 5      | 5 DA106       | Python Programming                              | SEC             | 2       | 0                      | 0      | 4     | 0           | 3   | 0       | 50     | ı                    | ı                      | 50     |
| 9      | AEC/VAC       | AEC/VAC   | AEC/VAC         | 2       | 2/1/0                  | 0      | 0/2/4 | 3/3/0       | 0/2/3   | 25/15/0 | 0/25   | 25/20/0              | 50/40/0 0/0/50         | 0/0/20 |
|        |               | Total   |                 | 20      |                        |        |       |             |   |         |        |                      |                        |        |

| Subject Code DA201 DA203 DA205 / CS205 DA207 DA207 DA209 AEC/VAC MS299 DA204 | Teaching Scheme                                | TT X7                    | )              | )          | •                     |      |        |                   |             | ,       |       |                      |       |
|--|--|--------------------------|----------------|------------|-----------------------|------|--------|-------------------|-------------|---------|-------|----------------------|-------|
| Subject Code DA201 DA203 DA205 / CS205 DA207 DA207 DA209 AEC/VAC MS299       | Teaching Scheme                                | II Year: I               | Third Semester | mest       | er                    |      |        |                   |             |         |       |                      |       |
| Subject  |  |                          |                | CC<br>Hour | Contact<br>Hours/Week |      | Exam D | Exam Duration (h) | R           | elativ  | e Wei | Relative Weights (%) | _     |
| DA201 DA203 DA205 / CS205 DA207 DA209 AEC/VAC MS299 DA202 DA204              | Course Title                                   | Subject Area             | Credit         | Т          | L                     | Ь    | Theory | Practical         | CWS         | PRS MTE | MTE   | ETE                  | PRE   |
| DA203<br>DA205 /<br>CS205<br>DA207<br>DA209<br>AEC/VAC<br>MS299<br>DA202     | Linear Algebra                                 | ESC                      | 4              | 3          | 0                     | 2    | 3      | 0                 | 15          | 25      | 20    | 40                   | ı     |
| DA205 / CS205  | Foundation to Data Science and Analytics       | DCC                      | 4              | m          | 0                     | 2    | 3      | 0                 | 15          | 25      | 20    | 40                   | ı     |
| DA207 DA209 AEC/VAC MS299 DA202 DA204  | Design and Analysis of Algorithms              | DCC                      | 4              | 3          | 1                     | 0    | 3      | 0                 | 25          | ı       | 25    | 50                   | ı     |
| DA209 AEC/VAC MS299 DA202 DA204  | Foundations in Machine Learning                | DCC                      | 4              | 3          | 0                     | 2    | 3      | 0                 | 15          | 25      | 20    | 40                   | ı     |
| AEC/VAC<br>MS299<br>DA202  | Optimization Techniques and Fuzzy Logic        | DCC                      | 4              | 3          | 0                     | 2    | 3      | 0                 | 15          | 25      | 20    | 40                   | ı     |
| MS299 DA202 DA204  | /AC  | AEC/VAC                  | 2              | 2/1/<br>0  | 0                     | 0/2/ | 3/3/0  | 0/2/3             | 25/15<br>/0 | 0/25    | 25/20 | 50/40/0              | 0/0/5 |
| DA202<br>DA204   | Community Engagement Course                    | Mandatory                | 2              |            |                       |      |        |                   |             |         |       |                      |       |
| DA202<br>DA204   | Total  |                          | 24             |            |                       |      |        |                   |             |         |       |                      |       |
| DA202<br>DA204   |  | II Year: Fourth Semester | ırth Se        | mest       | er                    |      |        |                   |             |         |       |                      |       |
| DA204  | Artificial Intelligence                        | ESC                      | 4              | 3          | 0                     | 2    | 3      | 0                 | 15          | 25      | 20    | 40                   | ı     |
|  | Big Data Analytics                             | DCC                      | 4              | ж          | 0                     | 7    | 3      | 0                 | 15          | 25      | 20    | 40                   | ı     |
| 3 DA206 Warehousing  | Database Management and<br>Warehousing         | DCC                      | 4              | 3          | 0                     | 2    | 3      | 0                 | 15          | 25      | 20    | 40                   | 1     |
| 4 DA208 Artificial Learning  | Artificial Neural network and Deep<br>Learning | DCC                      | 4              | 3          | 0                     | 7    | 3      | 0                 | 15          | 25      | 20    | 40                   | ı     |
| 5 DA210 Data Vi  | Data Visualization and Handling                | DCC                      | 4              | 3          | 1                     | 0    | 3      | 0                 | 25          | -       | 25    | 50                   | Ī     |
| 6 AEC/VAC AEC/VAC  | /AC  | AEC/VAC                  | 2              | 2/1/       | 0                     | 0/2/ | 3/3/0  | 0/2/3             | 25/15<br>/0 | 0/25    | 25/20 | 50/40/0              | 0/0/5 |
|  | Total  |                          | 22             |            |                       |      |        |                   |             |         |       |                      |       |

# **DEPARTMENT OF ELECTRICAL ENGINEERING** • Scheme of B. Tech. Electrical Engineering

| B. Tech. Electrical Engineering | I Year: First Semester | Contact Exam Duration Relative Weights (%)  Hours/Week (h) | Le Subject Area Credit L T P Theory Practical CWS PRS MTE ETE PRE | BSC 4 3 1 0 3 0 25 - 25 50 - | amentals ESC 4 3 0 2 3 0 15 25 20 40 - | aring ESC 4 3 1 0 3 0 25 - 25 50 - | gineering ESC 4 3 0 2 3 0 15 25 20 40 -     | p SEC 2 1 0 2 0 3 - 50 - 50 | AEC/VAC 2 2/1/0 0 0/2/4 3/3/0 0/2/3 25/1 0/25 25/2 26/40/0 0/0/50 |       | I Year: Second Semester | BSC 4 3 1 0 3 0 25 - 25 50 - | BSC 4 3 0 2 3 0 15 25 20 40 - | ESC 4 3 0 2 3 0 15 25 20 40 -        | neory DCC 4 3 0 2 3 0 15 25 20 40 - | d Testing SEC 2 1 0 2 0 3 - 50 - 50 | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ |   |
|---------------------------------|------------------------|--|---|------------------------------|--|------------------------------------|---|-----------------------------|---|-------|-------------------------|------------------------------|-------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|---|---|
| B. Tech. Electrical Engine      | I Year: First Semester | Contact Hours/Wee  | ect Area Credit L   | 4                            | ESC 4 3                                | 4                                  | ESC 4 3                                     | 2 1                         | 2 2/1/0   | 20    | I Year: Second Semester | 4                            | 4 3                           | 4 3                                  | 4 3                                 | SEC 2 1                             | 2 2/1/0   |   |
|                                 |                        | Teaching Scheme  | Subject Code Course Title   | AM101 Mathematics - I        | CO101 Programming Fundamentals         | CE101 Basic Civil Engineering      | ME101 Computer Aided Engineering Graphics-I | EE 103 Electrical Workshop  | AEC/VAC AEC/VAC   | Total |                         | AM102 Mathematics-II         | AP102 Physics                 | EE102 Data Structures and Algorithms | EE104 Circuit and Field Theory      | EE106 PCB Fabrication and Testing   | AEC/VAC AEC/VAC                                       | F |

|                                 |                         | _                     | PRE             | ı   | ı                                | ı  | 1                           | ,                            | 05/0/0         |                             |       |          | 1                       | ı                                   | ı               | ı  | 1                         | 05/0/0         |       |
|---------------------------------|-------------------------|-----------------------|-----------------|---|----------------------------------|--|-----------------------------|------------------------------|----------------|-----------------------------|-------|----------|-------------------------|-------------------------------------|-----------------|--|---------------------------|----------------|-------|
|                                 |                         | Relative Weights (%)  | ETE             | 40  | 40                               | 40   | 40                          | 50                           | 50/40/0 0/0/50 |                             |       |          | 40                      | 40                                  | 40              | 40                                       | 40                        | 50/40/0 0/0/50 |       |
|                                 |                         | e Wei                 | MTE             | 20  | 20                               | 20   | 20                          | 25                           | 25/2<br>0/0    |                             |       |          | 20                      | 20                                  | 20              | 20                                       | 20                        | 25/2           |       |
|                                 |                         | Relativ               | PRS             | 25  | 25                               | 25   | 25                          | Ī                            | 0/25           |                             |       |          | 25                      | 25                                  | 25              | 25                                       | 25                        | 0/25           |       |
|                                 |                         | ł                     | CWS             | 15  | 15                               | 15   | 15                          | 25                           | 25/1<br>5/0    |                             |       |          | 15                      | 15                                  | 15              | 15                                       | 15                        | 25/1<br>5/0    |       |
|                                 |                         | Exam Duration (h)     | Practical       | 0   | 0                                | 0  | 0                           | 0                            | 8/7/0          |                             |       |          | 0                       | 0                                   | 0               | 0  | 0                         | 0/2/3          |       |
| 50                              |                         | Exam I                | Theory          | 3   | 3                                | 3  | 8                           | 3                            | 3/3/0          |                             |       |          | 3                       | 3                                   | 3               | 3  | 3                         | 3/3/0          |       |
| neering                         | ÷.                      | act<br>Veek           | Ь               | 2   | 2                                | 2  | 2                           | 0                            | 0/2/4          |                             |       | 3r       | 2                       | 2                                   | 2               | 2  | 2                         | 0/2/4          |       |
| ngir                            | este                    | Contact<br>Hours/Week | L               | 0   | 0                                | 0  | 0                           | П                            | 0              |                             |       | Semester | 0                       | 0                                   | 0               | 0  | 0                         | 0              |       |
| al E                            | l Sen                   | Ho                    | T               | 3   | 3                                | Э  | 3                           | 3                            | 2/1/0          |                             |       |          | 3                       | 3                                   | 3               | 3  | 3                         | 2/1/0          |       |
| etric                           | : Third                 |                       | Credit          | 4   | 4                                | 4  | 4                           | 4                            | 2              | 2                           | 24    | Fourth   | 4                       | 4                                   | 4               | 4  | 4                         | 2              | 22    |
| B. Tech. Electrical Engineering | II Year: Third Semester |                       | Subject Area    | ESC   | DCC                              | DCC  | DCC                         | DCC                          | AEC/VAC        | Mandatory                   |       | II Year: | ESC                     | DCC                                 | DCC             | DCC                                      | DCC                       | AEC/VAC        |       |
| B.                              |                         | Teaching Scheme       | Course Title    | Numerical and Engineering<br>Optimization Methods | Electronics Devices and Circuits | Electromechanical Energy<br>Conversion and Transformer | Digital Circuit and Systems | Network Analysis & Synthesis | AEC/VAC        | Community Engagement Course | Total |          | Power Plant Engineering | Power Transmission and Distribution | Control Systems | Asynchronous and Synchronous<br>Machines | Linear Integrated Circuit | AEC/VAC        | Total |
|                                 |                         |                       | Subject<br>Code | EE201   | EE203                            | EE205  | EE207                       | EE209                        | AEC/VAC        | MS299                       |       |          | EE202                   | EE204                               | EE206           | EE208                                    | EE210                     | AEC/VAC        |       |
|                                 |                         |                       | S.<br>No.       |   | 2                                | c  | 4                           | 5                            | 9              | 7                           |       |          | _                       | 2                                   | 3               | 4  | 5                         | 9              |       |

|           |              | B. Te  | Fech. Electrical Engineering | al En  | zine       | erii                  | 19       |             |                   |       |       |                      |        |     |
|-----------|--------------|--|------------------------------|--------|------------|-----------------------|----------|-------------|-------------------|-------|-------|----------------------|--------|-----|
|           |              | I  | III Year: Fifth Semester     | Semes  | ter        |                       |          |             |                   |       |       |                      |        |     |
|           |              | Teaching Scheme                                |                              |        | noH<br>Hou | Contact<br>Hours/Week | ř<br>ček | Exam I<br>( | Exam Duration (h) | Re    | lativ | Relative Weights (%) | hts (% |     |
| S.<br>No. | Subject Code | Course Title                                   | Subject Area                 | Credit | Т          | Τ                     | Ь        | Theory      | Practical         | CWS   | PRS   | MTE                  | ETE    | PRE |
|           | EE301        | Power Electronics                              | DCC                          | 4      | 3          | 0                     | 2        | 3           | 0                 | 15    | 25    | 20                   | 40     | 1   |
| 2         | EE303        | Power System Analysis                          | DCC                          | 4      | 3          | 0                     | 2        | 3           | 0                 | 15    | 25    | 20                   | 40     | ı   |
| 3         | EE305        | Microprocessor & Microcontroller applications  | DCC                          | 4      | 3          | 0                     | 2        | 3           | 0                 | 15    | 25    | 20                   | 40     | I   |
| 4         | HU301        | Engineering Economics                          | SEC                          | 3      | 3          | 0                     | 0        | 3           | 0                 | 25    | 1     | 25                   | 50     | 1   |
| S         | EE3XX        | Discipline Specific Elective Course -          | DEC                          | 4      | 3/3        | 0/1                   | 2/0      | 3           | 0                 | 15/25 | 25/0  | 20/25 40/50          | 40/50  | ı   |
| 9         | GECXXX       | Generic Elective Course -1                     | GEC                          | 4      | 3/3        | 0/1                   | 2/0      | 3           | 0                 | 15/25 | 25/0  | 20/25 40/50          | 40/50  | ı   |
|           |              | Total  |                              | 23     |            |                       |          |             |                   |       |       |                      |        |     |
|           |              | I  | III Year: Sixth Semester     | Semes  | ter        |                       |          |             |                   |       |       |                      |        |     |
| 1         | EE302        | Electric Drives                                | DCC                          | 4      | 3          | 0                     | 2        | 3           | 0                 | 15    | 25    | 20                   | 40     | ı   |
| 2         | EE304        | Power System Control, Stability and Protection | DCC                          | 4      | 3          | 0                     | 2        | 3           | 0                 | 15    | 25    | 20                   | 40     | ı   |
| 3         | MG302        | Fundamentals of Management                     | SEC                          | 3      | 3          | 0                     | 0        | Э           | 0                 | 25    | ı     | 25                   | 50     | ı   |
| 4         | EE3XX        | Discipline Specific Elective Course -          | DEC                          | 4      | 3/3        | 0/1                   | 2/0      | 3           | 0                 | 15/25 | 25/0  | 20/25 40/50          | 40/50  | ı   |
| 5         | EE3XX        | Discipline Specific Elective Course -          | DEC                          | 4      | 3/3        | 0/1                   | 2/0      | 3           | 0                 | 15/25 | 25/0  | 20/25 40/50          | 40/50  | I   |
| 9         | GECXXX       | Generic Elective Course -2                     | GEC                          | 4      | 3/3        | 0/1                   | 2/0      | 3           | 0                 | 15/25 | 25/0  | 20/25 40/50          | 40/50  | ı   |
|           |              | Total  |                              | 23     |            |                       |          |             |                   |       |       |                      |        |     |

|        |                  |   | B. Tech. F   | B. Tech. Electrical Engineering | ngineeı    | ring                  |     |             |                   |       |         |       |                      |                  |   |
|--------|------------------|---|--------------|---------------------------------|------------|-----------------------|-----|-------------|-------------------|-------|---------|-------|----------------------|------------------|---|
|        |                  |   | IV Yea       | IV Year: Seventh Semester       | mester     |                       |     |             |                   |       |         |       |                      |                  | _ |
|        |                  | Teaching Scheme                         |              |                                 | Cc<br>Hour | Contact<br>Hours/Week |     | Exam I<br>( | Exam Duration (h) | Re    | elative | e Wei | Relative Weights (%) | (0)              |   |
| S. No. | Subject<br>Code  | Course Title                            | Subject Area | Credit                          | Т          | I                     | Ь   | Theory      | Practical CWS     | CWS   | PRS     | MTE   | ETE                  | PRE              |   |
| 1      | EE401            | B. Tech Project-I                       | DCC          | 4                               | 1          | ı                     | I   | ı           | I                 | I     | 40      | ı     | ı                    | 09               | _ |
| 2      | EE403            | Internship                              | DCC          | 2                               | 1          | ı                     | I   | ı           | 1                 | I     | 40      | 1     | ı                    | 09               | _ |
| 3      | EE4XX            | Discipline Specific Elective Course - 4 | DEC          | 4                               | 4          | 3/3                   | 0/1 | 2/0         | 3                 | 0     | 15/25   |       | 25/0 20/25 40/50     | 40/50            |   |
| 4      | EE4XX            | Discipline Specific Elective Course - 5 | DEC          | 4                               | 4          | 3/3                   | 0/1 | 2/0         | 3                 | 0     | 15/25   | 25/0  | 20/25                | 25/0 20/25 40/50 |   |
| 5      | GECXXX           | Generic Elective Course -3              | GEC          | 4                               | 3/3        | 0/1                   | 2/0 | 3           | 0                 | 15/25 | 25/0    |       | 20/25 40/50          | 1                |   |
| 9      | VACXXX           | VACXXX Indian Knowledge System          | VAC          | Non Credit                      |            |                       |     |             |                   |       |         |       |                      |                  |   |
|        |                  | Total                                   |              | 18                              |            |                       |     |             |                   |       |         |       |                      |                  |   |
|        |                  |   | IV Ye        | IV Year: Eight Semester         | ester      |                       |     |             |                   |       |         |       |                      |                  |   |
| 1      | EE402            | B. Tech Project-II                      | DCC          | 8                               | 1          | ı                     | Ī   | ı           | ı                 | I     | 40      | ı     | ı                    | 09               | _ |
| 2      | EE4XX            | Discipline Specific Elective Course - 6 | DEC          | 4                               | 4          | 3/3                   | 0/1 | 2/0         | 3                 | 0     | 15/25   | 25/0  | 20/25                | 25/0 20/25 40/50 |   |
| 3      | GECXXX           | Generic Elective Course -4              | GEC          | 4                               | 3/3        | 0/1                   | 2/0 | 3           | 0                 | 15/25 | 25/0    |       | 20/25 40/50          | -                | _ |
|        |                  | Total                                   |              | 16                              |            |                       |     |             |                   |       |         |       |                      |                  | _ |
| Cu     | Cumulative Total |   |              | 166                             |            |                       |     |             |                   |       |         |       |                      |                  | _ |

### B. Tech. Electrical Engineering

Discipline Specific Elective Courses

| EE265      | G: 1 1G :   | EE 40.5    | D: :/ 10: 1D :   |
|------------|---|------------|--|
| EE307      | Signals and Systems   | EE405      | Digital Signal Processing                                |
| EE309      | Power Station Practices                                       | EE407      | Instrumentation and Measurement                          |
| EE311      | Special Electrical Machines                                   | EE409      | Power System Modelling and Simulation                    |
| EE313      | Energy Efficient Motors                                       | EE411      | Power System Reliability                                 |
| EE315      | Digital Control and State Variable Analysis                   | EE413      | Design of Electrical Machines                            |
| EE317      | Renewable Energy Systems                                      | EE415      | Advanced Topics in Electrical Machines                   |
| EE319      | Digital System Design   | EE417      | Pulse Width modulation for Power Converters              |
| EE321      | Soft Computing Techniques                                     | EE419      | Advanced Communications                                  |
| EE323      | Fundamentals of Machine Learning                              | EE421      | Microcontroller and Embedded Systems                     |
| EE325      | Internet of Things  | EE423      | IC Technology  |
| EE327      | Introduction of Python Programming                            | EE425      | Computer Architecture                                    |
| EE329      | Engineering Analysis and Design                               | EE427      | Power Electronics Application to Photovoltaic<br>Systems |
| Discipline | e Specific Elective Course - 2 & 3 (Semester - 6)             | Discipline | Specific Elective Course - 6 (Semester - 8)              |
| EE306      | Power System Operation and Control                            | EE404      | Power System Dynamics & Stability                        |
| EE308      | Communication Systems   | EE406      | Distribution Systems Analysis & Control                  |
| EE310      | Power System Optimization                                     | EE408      | Restructured Power Systems                               |
| EE312      | Power Electronic Applications to Power Systems                | EE410      | Power System Planning                                    |
| EE314      | Electrical Energy Storage Systems                             | EE412      | High Voltage Engineering                                 |
| EE316      | Switched Mode Power Supplies                                  | EE414      | Distributed Generation                                   |
| EE318      | VLSI Design   | EE416      | Grid Integration of Renewable Energy Sources             |
| EE320      | Advanced Analog Circuit Design                                | EE418      | Selected Topics in Power Electronics                     |
| EE322      | Design, Estimation & Costing of Industrial Electrical Systems | EE420      | Power Quality  |
| EE324      | CMOS Analog Integrated Circuits                               | EE422      | HVDC Transmission  |
| EE326      | Deep Learning with Artificial Neural Network                  | EE424      | Flexible AC Transmission Systems                         |
| EE328      | Introduction to ARM Architecture                              | EE426      | Smart Grid   |
| EE330      | Wireless Sensor Networks                                      | EE428      | Digital Image Processing                                 |
|            |   | EE430      | Filter Design  |
|            |   | EE432      | AI and Expert Systems                                    |
|            |   | EE434      | Computer Control of Processes                            |
|            |   | EE436      | Nonlinear and Adaptive Control                           |
|            |   | EE438      | DSP Applications to Electromechanical Systems            |
|            |   | EE440      | SCADA & Energy Management Systems                        |
|            |   | EE442      | Robotics and Machine Vision                              |
|            |   | EE444      | Utilization of Electrical Energy & Traction              |
|            |   | EE446      | Data Communication and Computer Networks                 |
|            |   | EE448      | Big Data Analytics                                       |
|            |   | EE450      | Cloud Computing Fundamentals                             |

# **Ability Enhancement Courses (AECs)**

| Sr.<br>No. | Course<br>Code | Course Title                                      | Old Course Code | Cr. |
|------------|----------------|---|-----------------|-----|
| 1          | AEC1           | Appreciation of Fiction                           | FEC16           | 2   |
| 2          | AEC2           | Appreciation of Poetry & Prose                    | FEC15           | 2   |
| 3          | AEC3           | Appreciation of Short Stories                     | FEC14           | 2   |
| 4          | AEC4           | Business Communication and Presentation<br>Skills | FEC12           | 2   |
| 5          | AEC5           | Communication Skills                              | FEC10           | 2   |
| 6          | AEC6           | Communicative Hindi for Non-Natives               | FEC53           | 2   |
| 7          | AEC7           | Dance   | FEC21           | 2   |
| 8          | AEC8           | Music   | FEC24           | 2   |
| 9          | AEC9           | French  | FEC37           | 2   |
| 10         | AEC10          | German  | FEC40           | 2   |
| 11         | AEC11          | Soft Skills and Personality Development           | FEC 11          | 2   |
| 12         | AEC12          | Japanese  | FEC39           | 2   |
| 13         | AEC13          | Logical Reasoning                                 | FEC32           | 2   |
| 14         | AEC14          | Mandarin Chinese                                  | FEC38           | 2   |
| 15         | AEC15          | Public Speaking                                   | FEC13           | 2   |
| 16         | AEC16          | Theatre   | FEC20           | 2   |
| 17         | AEC17          | Spanish   | FEC41           | 2   |
| 18         | AEC18          | Spoken Skills in English                          | FEC9            | 2   |
| 19         | AEC19          | Technical Communication                           | FEC46           | 2   |
| 20         | AEC20          | Sketching & Rendering                             | FEC49           | 2   |
| 21         | AEC21          | Tinkering Studio & Elements of Design             | FEC50           | 2   |
| 22         | AEC22          | Psychology for Everyday Living                    | FEC36           | 2   |
| 23         | AEC23          | Financial Literacy                                | FEC17           | 2   |
| 24         | AEC24          | Entrepreneurship Development                      | FEC42           | 2   |
| 25         | AEC25          | Entrepreneurship Exploration                      | FEC51           | 2   |

# Value Addition Courses (VACs)

| Sr. No. | Course Code | Course Title  | Old Course Code | Cr. |
|---------|-------------|---|-----------------|-----|
| 1       | VAC01       | Art of Happiness  | FEC29           | 2   |
| 2       | VAC02       | Corporate Governance and Business<br>Ethics                 | FEC33           | 2   |
| 3       | VAC03       | Corporate Social Responsibility                             | FEC6            | 2   |
| 4       | VAC04       | Cyber Law   | FEC44           | 2   |
| 5       | VAC05       | Emotional Intelligence                                      | FEC28           | 2   |
| 6       | VAC06       | Extension Outreach Activities                               | FEC52           | 2   |
| 7       | VAC07       | Food Chemistry  | FEC31           | 2   |
| 8       | VAC08       | Fostering Social Responsibility and<br>Community Engagement | FEC55           | 2   |
| 9       | VAC09       | Geography in Everyday Life                                  | FEC35           | 2   |
| 10      | VAC10       | Introduction to Biological Science                          | FEC48           | 2   |
| 11      | VAC11       | Leadership Through Self-Management                          | FEC57           | 2   |
| 12      | VAC12       | NCC   | FEC5            | 2   |
| 13      | VAC13       | Negotiation & Leadership                                    | FEC54           | 2   |
| 14      | VAC14       | Nutraceutical   | FEC30           | 2   |
| 15      | VAC15       | NSS   | FEC4            | 2   |
| 16      | VAC16       | Professional Ethics & Human Values                          | FEC27           | 2   |
| 17      | VAC17       | Psychology for Everyday Living                              | FEC36           | 2   |
| 18      | VAC18       | Public Administration                                       | FEC43           | 2   |
| 19      | VAC19       | Science & Practice of Happiness                             | FEC58           | 2   |
| 20      | VAC20       | Sports I  | FEC1            | 2   |
| 21      | VAC21       | Sports II   | FEC2            | 2   |
| 22      | VAC22       | Universal Human Values 1: Self-Family                       | FEC25           | 2   |
| 23      | VAC23       | Universal Human Values 1: Self,<br>Society and Nature       | FEC26           | 2   |
| 24      | VAC24       | Universal Human Values:<br>Understanding Harmony            | FEC56           | 2   |
| 25      | VAC25       | Value Driven Leadership                                     | FEC47           | 2   |

| 26 | VAC26 | Environment Development and Society    | FEC8  | 2 |
|----|-------|--|-------|---|
| 27 | VAC27 | Introduction to Environmental Sciences | FEC7  | 2 |
| 28 | VAC28 | Engineering Exploration                | FEC45 | 2 |
| 29 | VAC29 | Physical Education & Sports            | FEC3  | 2 |
| 30 | VAC30 | Yoga                                   | FEC22 | 2 |
| 31 | VAC31 | Basics of Accounting                   | FEC19 | 2 |
| 32 | VAC32 | Financial Statements Analysis          | FEC18 | 2 |
| 33 | VAC33 | Digital Film Making                    | FEC23 | 2 |
| 34 | VAC34 | 3D Printing                            |       | 2 |
| 35 | VAC35 | Animation and Multimedia               |       | 2 |
| 36 | VAC36 | Building Drawing                       |       | 2 |
| 37 | VAC37 | E-Waste Management                     |       | 2 |
| 38 | VAC38 | Excel Programming                      |       | 2 |
| 39 | VAC39 | MATLAB programming and Applications    |       | 2 |
| 40 | VAC40 | UX/UI Designing                        |       | 2 |
| 41 | VAC41 | Video Editing                          |       | 2 |
| 42 | VAC42 | Web Development                        |       | 2 |
| 43 | VAC43 | Meditation and Conscious Living        |       | 2 |
| 44 | VAC44 | Vivek Marg                             |       | 2 |

# Minors offered by various Academic Departments

# **Minors offered by Department of Applied Chemistry**

|         |                | Minor in Chamical Engineering               |             |
|---------|----------------|---|-------------|
| S. No.  | Course Code    | Minor in Chemical Engineering  Course Title | Course Type |
| 3. INO. | CH209          | Chemical Engineering Process Calculations   | Compulsory  |
| 2       | CH203          | Transport Phenomena                         | Compulsory  |
| 3       | CH210          | Fluid Mechanics                             | Elective    |
| 4       | CH204          | Chemical Reaction Engineering-1             | Elective    |
| 5       | CH204          | Mechanical Operations                       | Elective    |
| 6       | CH208          | Heat Transfer                               | Elective    |
| 7       | CH208<br>CH303 | Mass Transfer-1                             | Elective    |
| 8       | CH305          | Chemical Process Technology                 | Elective    |
| 9       | CH303          | Chemical Reaction Engineering-2             | Elective    |
| 10      | CH302<br>CH304 | Mass Transfer-2                             | Elective    |
| 11      | CH304<br>CH323 |   | Elective    |
| 12      | CH323<br>CH409 | Numerical Methods in Chemical Engineering   |             |
|         |                | Plant Engineering and Process Economics     | Elective    |
| 13      | CH411          | Advanced Mass Transfer Operations           | Elective    |
| 14      | CH410          | Process Engineering and Design              | Elective    |
| 15      | CH424          | Safety & Hazards in Chemical Industries     | Elective    |
| G 31    |                | Minor in Polymer Technology                 |             |
| S. No.  | Course Code    | Course Title                                | Course Type |
| 1       | CH301          | Polymer Materials                           | Compulsory  |
| 2       | CH313          | Rheology                                    | Elective    |
| 3       | CH317          | Plastic Technology                          | Elective    |
| 4       | CH319          | Resin Technology                            | Elective    |
| 5       | CH321          | Rubber Technology                           | Elective    |
| 6       | CH308          | Paint Technology                            | Elective    |
| 7       | CH310          | Polymer Processing Techniques               | Elective    |
| 8       | CH314          | Coatings and Adhesives                      | Elective    |
| 9       | CH318          | Packaging Technology                        | Elective    |
| 10      | CH320          | Tyre Technology                             | Elective    |
| 11      | CH405          | Fiber Technology                            | Elective    |
| 12      | CH407          | Polymer Blends and Composites               | Elective    |
| 13      | CH417          | Polymer Waste Management                    | Elective    |
| 14      | CH425          | Application of Polymers in Biomedical       | Elective    |
| 15      | CH408          | Specialty Polymers                          | Elective    |
| 16      | CH412          | Thermoplastic Elastomers                    | Elective    |
| 17      | CH414          | Non-woven Technology                        | Elective    |
| 18      | CH418          | Application of Nanotechnology in Polymers   | Elective    |
| 19      | CH420          | Inorganic Polymers                          | Elective    |
|         |                | Minor in Petrochemical Engineering          |             |
| S. No.  | Course Code    | Course Title                                | Course Type |
| 1       | CH303          | Mass Transfer I                             | Compulsory  |
| 2       | CH304          | Mass Transfer II                            | Compulsory  |
| 3       | CH309          | Petroleum Refining Engineering              | Elective    |
| 4       | CH317          | Plastic Technology                          | Elective    |
| 5       | CH310          | Polymer Processing Techniques               | Elective    |
| 6       | CH316          | Petrochemical Engineering                   | Elective    |
| 7       | CH322          | Heat Exchangers                             | Elective    |
| 8       | CH409          | Plant Engineering and Process Economics     | Elective    |
| 9       | CH411          | Advanced Mass Transfer Operations           | Elective    |
| 10      | CH421          | Polymer Reaction Engineering                | Elective    |
| 11      | CH427          | Combustion Engineering                      | Elective    |
| 12      | CH429          | Energy Resources                            | Elective    |
| 13      | CH406          | Catalysis                                   | Elective    |
| 14      | CH410          | Process Engineering and Design              | Elective    |
| 15      | CH426          | Biofuel Engineering                         | Elective    |
| 16      | CH428          | Energy Conservation and Recycling           | Elective    |
|         |                | 1 -0,                                       |             |

# **Minors offered by Department of Applied Mathematics**

|        |             | Minor in Mathematics & Computing                |             |
|--------|-------------|---|-------------|
| S. No. | Course Code | Course Title                                    | Course Type |
| 1      | MC208       | Linear Algebra                                  | Compulsory  |
| 2      | MC210       | Differential Equation                           | Compulsory  |
| 3      | MC205       | Probability and Statistics                      | Compulsory  |
| 4      | MC302       | Mathematical Modelling and Simulation           | Elective    |
| 5      | MC307       | Artificial Intelligence                         | Elective    |
| 6      | MC311       | Numerical Linear Algebra                        | Elective    |
| 7      | MC313       | Operations Research                             | Elective    |
| 8      | MC322       | Graph Theory                                    | Elective    |
| 9      | MC417       | Cryptography and Network Security               | Elective    |
| 10     | MC324       | Fuzzy set and Fuzzy logic                       | Elective    |
|        | 1           | Minor in Industrial Mathematics                 |             |
| S. No. | Course Code | Course Title                                    | Course Type |
| 1      | MC205       | Probability and Statistics                      | Compulsory  |
| 2      | MC303       | Stochastic Processes                            | Compulsory  |
| 3      | MC304       | Financial Engineering                           | Compulsory  |
| 4      | MC302       | Mathematical Modelling and Simulation           | Elective    |
| 5      | MC313       | Operations Research                             | Elective    |
| 6      | MC322       | Graph Theory                                    | Elective    |
| 7      | MC324       | Fuzzy set and Fuzzy logic                       | Elective    |
| 8      | MC408       | Statistical Quality Control and Decision Making | Elective    |
| 9      | MC410       | Game Theory                                     | Elective    |
| 10     | MC411       | Statistical Inference                           | Elective    |
| 11     | MC405       | Optimization Techniques                         | Elective    |
| 12     | MC310       | Machine Learning                                | Elective    |
|        | •           | Minor in Computational Intelligence             |             |
| S. No  | Course Code | Course Title                                    | Course Type |
| 1      | MC205       | Probability and Statistics                      | Compulsory  |
| 2      | MC206       | Analysis and Design of Algorithms               | Compulsory  |
| 3      | MC303       | Stochastic Processes                            | Compulsory  |
| 4      | MC302       | Mathematical Modelling and Simulation           | Elective    |
| 5      | MC307       | Artificial Intelligence                         | Elective    |
| 6      | MC413       | Big Data Analytics                              | Elective    |
| 7      | MC408       | Statistical Quality Control and Decision Making | Elective    |
| 8      | MC415       | Data Warehousing and Data Mining                | Elective    |
| 9      | MC411       | Statistical Inference                           | Elective    |
| 10     | MC310       | Machine Learning                                | Elective    |
| 11     | MC406       | Finite Element Methods                          | Elective    |

# Minors offered by Department of Applied Physics

|        |             | Minor in Engineering Physics                       |             |
|--------|-------------|--|-------------|
| S. No. | Course Code | Course Title                                       | Course Type |
| 1      | EP209       | Quantum Mechanics                                  | Compulsory  |
| 2      | EP210       | Condensed Matter Physics                           | Compulsory  |
| 3      | EP303       | Atomic and Molecular Physics                       | Compulsory  |
| 4      | EP306       | Laser and Optical Instruments                      | Elective    |
| 5      | EP311       | Cosmology and Astrophysics                         | Elective    |
| 6      | EP307       | Principles and Applications in Nuclear Engineering | Elective    |
| 7      | EP312       | Fabrication and Characterization of Nanostructures | Elective    |
| 8      | EP314       | Integrated Optics                                  | Elective    |
| 9      | EP410       | Space and Atmospheric Sciences                     | Elective    |
| 10     | EP404       | Introduction to Spintronics                        | Elective    |
| 11     | EP405       | Nanoscience and Technology                         | Elective    |
| 12     | EP411       | Advance Materials for Photonics Devices            | Elective    |
|        |             | Minor in Material Science & Engineering            |             |
| S. No. | Course Code | Course Title                                       | Course Type |
| 1      | EP208       | AI for Material Science                            | Compulsory  |
| 2      | EP210       | Condensed Matter Physics                           | Compulsory  |
| 3      | EP304       | Energy Storage and Conversion Technologies         | Compulsory  |
| 4      | EP307       | Principles and Applications in Nuclear Engineering | Elective    |
| 5      | EP315       | Advanced Semiconductor Device Physics              | Elective    |
| 6      | EP317       | Advanced Wafer processing                          | Elective    |
| 7      | EP312       | Fabrication and Characterization of Nanostructures | Elective    |
| 8      | EP405       | Nanoscience and Technology                         | Elective    |
| 9      | EP411       | Advance Materials for Photonics Devices            | Elective    |
| 10     | EP404       | Introduction to Spintronics                        | Elective    |
|        |             | Minor in Photonics                                 |             |
| S. No  | Course Code | Course Title                                       | Course Type |
| 1      | EP104       | Fundamentals of Electrodynamics                    | Compulsory  |
| 2      | EP305       | Fundamentals of Quantum Computation                | Compulsory  |
| 3      | EP302       | Fiber Optics and Optical Communication             | Compulsory  |
| 4      | EP306       | Laser and Optical Instruments                      | Elective    |
| 5      | EP314       | Integrated optics                                  | Elective    |
| 6      | EP413       | Semiconductor Optoelectronics                      | Elective    |
| 7      | EP411       | Advanced Materials for Photonic Devices            | Elective    |
| 8      | EP408       | Mobile and Satellite Communication                 | Elective    |
| 9      | NST-5402    | Nanophotonics                                      | Elective    |

# Minors offered by Department of Biotechnology

|        | Minor in Biotechnology (For Disciplines other than Biotechnology) |   |             |  |
|--------|---|---|-------------|--|
| S. No. | Course Code   | Course Title                                  | Course Type |  |
| 1      | BT104   | Introduction to Biotechnology                 | Compulsory  |  |
| 2      | BT204   | Molecular Biology                             | Compulsory  |  |
| 3      | BT303   | Genetic Engineering                           | Compulsory  |  |
| 4      | BT206   | Microbiology                                  | Elective    |  |
| 5      | BT207   | Fundamentals of Computational Biology         | Elective    |  |
| 6      | BT210   | Biochemistry                                  | Elective    |  |
| 7      | BT301   | Immunology and Immuno-Technology              | Elective    |  |
| 8      | BT305   | Environmental Biotechnology                   | Elective    |  |
| 9      | BT325   | Minor Projects                                | Elective    |  |
| 10     | BT344   | Genomics and Proteomics                       | Elective    |  |
|        |   | Minor in Biological Computing                 | •           |  |
| S. No. | Course Code   | Course Title                                  | Course Type |  |
| 1      | BT207   | Fundamentals of Computational Biology         | Compulsory  |  |
| 2      | BT208   | Advances in Computational Biology             | Compulsory  |  |
| 3      | BT323   | Drug Design and Delivery                      | Compulsory  |  |
| 4      | BT305   | Environmental Biotechnology                   | Elective    |  |
| 5      | BT311   | Object Oriented Programming                   | Elective    |  |
| 6      | BT321   | Pharmacogenomics and Personalized Medicine    | Elective    |  |
| 7      | BT325   | Minor Projects                                | Elective    |  |
| 8      | BT328   | Bioinformatics approaches in Complex Disorder | Elective    |  |
| 9      | BT344   | Genomics and Proteomics                       | Elective    |  |
| 10     | BT406   | Population Genetics                           | Elective    |  |

# **Minors offered by Department of Civil Engineering**

|             |             | Minor in Civil Engineering                              |             |
|-------------|-------------|---|-------------|
| S. No.      | Course Code | Course Title  | Course Type |
| 1           | CE101       | Basic Civil Engineering                                 | Compulsory  |
| 2           | CE104       | Mechanics of Solids                                     | Compulsory  |
| 3           | CE206       | Soil Mechanics  | Compulsory  |
| 4           | CE209       | Analysis of Structures-I                                | Compulsory  |
| 5.          | CE203       | Design of Structures-I                                  | Elective    |
| 6.          | CE205       | Fluid Mechanics   | Elective    |
| 7.          | CE301       | Geotechnical Engineering                                | Elective    |
| 8.          | CE302       | Design of Steel Structures                              | Elective    |
| 9.          | CE305       | Transportation Engineering                              | Elective    |
| 10.         | CE311       | Disaster Management                                     | Elective    |
| 11.         | CE326       | Earthquake Technology                                   | Elective    |
| 12.         | CE404       | Structure Health Monitoring and Sustainability          | Elective    |
| 13.         | CE407       | Introduction to Building Information Modelling (BIM)    | Elective    |
| 14.         | CE417       | Traffic Engineering                                     | Elective    |
| 15.         | CE419       | Advanced Surveying and Geoinformatics                   | Elective    |
| 16.         | CE439       | Construction Project Management                         | Elective    |
|             |             | Minor in Sustainable Infrastructure                     |             |
| S. No.      | Course Code | Course Title  | Course Type |
| 1.          | CE101       | Basic Civil Engineering                                 | Compulsory  |
| 2.          | CE205       | Fluid Mechanics   | Compulsory  |
| 3.          | CE206       | Soil Mechanics  | Compulsory  |
| 4.          | CE208       | Environmental Engineering-I                             | Compulsory  |
| 5.          | CE306       | Infrastructure Resilience and Socio-Economic Dynamics   | Elective    |
| 6.          | CE307       | Application of Geo-informatics, Remote Sensing, and GIS | Elective    |
|             | 02007       | in Engineering  | 21000170    |
| 7.          | CE318       | Environmental Aspects of Water Resources                | Elective    |
| 8.          | CE320       | Transportation Safety and Environment                   | Elective    |
| 9.          | CE342       | Solid Waste Management and Air Pollution                | Elective    |
| 10.         | CE404       | Structure Health Monitoring and Sustainability          | Elective    |
| 11.         | CE405       | Wind Effect on Structures and Wind Energy Systems       | Elective    |
| 12.         | CE412       | Climate Change and Sustainable Development              | Elective    |
| 13.         | CE427       | Vulnerability and Risk Management                       | Elective    |
| 14.         | CE414       | Urban Planning and Flood Management                     | Elective    |
| 15.         | CE415       | Flood and Drought Estimation and Management             | Elective    |
| 16.         | CE437       | Urban Water Resources Management                        | Elective    |
| 17.         | CE423       | Integrated Intelligent Transportation System            | Elective    |
|             |             | Minor in Disaster Mitigation and Management             |             |
| S. No       | Course Code | Course Title  | Course Type |
| 1.          | CE101       | Basic Civil Engineering                                 | Compulsory  |
| 2.          | CE104       | Mechanics of Solids                                     | Compulsory  |
| 3.          | CE207       | Surveying and Geoinformatics                            | Compulsory  |
| 4.          | CE311       | Disaster Management                                     | Compulsory  |
| 5.          | CE306       | Infrastructure Resilience and Socio-Economic Dynamics   | Elective    |
| 6.          | CE307       | Application of Geo-informatics, Remote Sensing, and GIS | Elective    |
| <del></del> |             | in Engineering  |             |
| 7.          | CE309       | Wind Loads on Structures                                | Elective    |
| 8.          | CE326       | Earthquake Technology                                   | Elective    |
| 9.          | CE328       | Cyclonic Risk and Management                            | Elective    |
| 10.         | CE405       | Wind Effect on Structures and Wind Energy System        | Elective    |
| 11.         | CE408       | Retrofitting of Structures                              | Elective    |

vw.dtu.ac.in 130

| 12.    | CE412       | Climate Change and Sustainable Development              | Elective    |
|--------|-------------|---|-------------|
| 13.    | CE427       | Vulnerability and Risk Management                       | Elective    |
| 14.    | CE411       | Geotechnical Exploration and Excavation Methods         | Elective    |
| 15.    | CE415       | Flood and Drought Estimation and Management             | Elective    |
|        | M           | inor in AI & Data Analytics in Civil Engineering        |             |
| S. No. | Course Code | Course Title  | Course Type |
| 1.     | CS/SE/ITXXX | Data Analytics  | Compulsory  |
| 2.     | CE101       | Basic Civil Engineering                                 | Compulsory  |
| 3.     | CE327       | AI in Civil Engineering                                 | Choose one  |
| 4.     | CE201       | Introduction to Earth, Atmosphere, Climate, and         | Elective    |
|        |             | Environmental Sciences                                  |             |
| 5.     | CE202       | Smart City Planning and Intelligent Transportation      | Elective    |
| 6.     | CE207       | Surveying and Geo-informatics                           | Elective    |
| 7.     | CE306       | Infrastructure Resilience and Socio-Economic Dynamics   | Elective    |
| 8.     | CE307       | Application of Geo-informatics, Remote Sensing, and GIS | Elective    |
|        |             | in Engineering  |             |
| 9.     | CE321       | Computational Fluid Dynamics                            | Elective    |
| 10.    | CE405       | Wind Effect on Structures and Wind Energy System        | Elective    |
| 11.    | CE407       | Introduction to Building Information Modelling (BIM)    | Elective    |
| 12.    | CE404       | Structure Health Monitoring and Sustainability          | Elective    |
| 13.    | CE414       | Urban Planning and Flood Management                     | Elective    |
| 14.    | CE429       | Computer Methods in Geotechnical Engineering            | Elective    |
| 15.    | CE415       | Flood and Drought Estimation and Management             | Elective    |
| 16.    | CE439       | Construction Project Management                         | Elective    |
| 17.    | CE443       | Traffic and Transport Planning                          | Elective    |
| 18.    | CE423       | Integrated Intelligent Transportation Systems           | Elective    |

# Minors offered by Department of Computer Science & Engineering

| Minor in Computer Science and Engineering |             |                                   |             |  |
|---|-------------|-----------------------------------|-------------|--|
| S. No.                                    | Course Code | Course Title                      | Course Type |  |
| 1   | CS104       | Data Structures                   | Compulsory  |  |
| 2   | CS203       | Object Oriented Programming       | Compulsory  |  |
| 3   | CS210       | Database Management Systems       | Compulsory  |  |
| 4   | CS204       | Theory of Computation             | Elective    |  |
| 5   | CS205       | Design and Analysis of Algorithms | Elective    |  |
| 6   | CS207       | Operating Systems Design          | Elective    |  |
| 7   | CS208       | Computer Networks                 | Elective    |  |
| 8   | CS209       | Software Engineering              | Elective    |  |
| 9   | CS301       | Compiler Design                   | Elective    |  |
| 10  | CS303       | Machine Learning                  | Elective    |  |
| 11  | CS302       | Information and Network Security  | Elective    |  |
| 12  | CS304       | Data Warehousing and Data Mining  | Elective    |  |
| 13  | CS319       | Computer Graphics                 | Elective    |  |
| 14  | CS330       | Project work related to Minor     | Elective    |  |
| 15  | CS318       | Deep Learning                     | Elective    |  |
| 16  | CS421       | Advance Web Technology            | Elective    |  |
|   |             | Minor in Machine Learning         |             |  |
| S. No.                                    | Course Code | Course Title                      | Course Type |  |
| 1   | CS104       | Data Structures                   | Compulsory  |  |
| 2   | CS203       | Object Oriented Programming       | Compulsory  |  |
| 3   | CS303       | Machine Learning                  | Compulsory  |  |
| 4   | CS202       | Probability and Statistics        | Elective    |  |
| 5   | CS318       | Deep Learning                     | Elective    |  |
| 6   | CS330       | Project work related to Minor     | Elective    |  |
| 7   | CS407       | Pattern Recognition               | Elective    |  |
| 8   | CS409       | Reinforcement Learning            | Elective    |  |
| 9   | CS413       | Computer Vision                   | Elective    |  |
| 10  | CS427       | Natural Language Processing       | Elective    |  |
| 11  | CS408       | Swarm & Evolutionary Computing    | Elective    |  |

# **Minors offered by Department of Electrical Engineering**

|           |                | Minor in Electrical Engineering                                 |             |
|-----------|----------------|---|-------------|
| S. No.    | Course Code    | Course Title  | Course Type |
| 1         | EE204          | Power Transmission and Distribution                             | Compulsory  |
| 2         | EE206          | Control System  | Compulsory  |
| 3         | EE203          | Electronic Devices and Circuits                                 | Elective    |
| 4         | EE208          | Asynchronous and Synchronous Machines                           | Elective    |
| 5         | EE301          | Power Electronics   | Elective    |
| <u>'6</u> | EE305          | Microprocessors and Microcontrollers Applications               | Elective    |
| 7         | EE317          | Renewable Energy Systems  | Elective    |
| 8         | EE302          | Electric Drives   | Elective    |
| 9         | EE303          | Power System Analysis   | Elective    |
| 10        | EE322          | Design, Estimation and Costing of Industrial Electrical Systems | Elective    |
| 11        | EE407          | Instrumentation and Measurement                                 | Elective    |
| 12        | EE434          | Computer Control of Processes                                   | Elective    |
| 13        | EE440          | SCADA and Energy Management Systems                             | Elective    |
| 14        | EE444          | Utilization of Electrical Energy & Traction                     | Elective    |
| 11        |                | Minor in Machine Learning for IOT Systems                       | Diccirc     |
| S. No.    | Course Code    | Course Title  | Course Type |
| 1         | EE201          | Numerical and Engineering Optimization Methods                  | Compulsory  |
| 2         | EE407          | Instrumentation and Measurement                                 | Compulsory  |
| 3         | EE323          | Fundamentals of Machine learning                                | Elective    |
| 4         | EE325          | Internet of Things  | Elective    |
| 5         | EE326          | Deep Learning with Artificial Neural Network                    | Elective    |
| 6         | EE328          | Introduction to ARM Architecture                                | Elective    |
| 7         | EE328<br>EE330 | Wireless Sensor Networks  | Elective    |
| 8         | EE330<br>EE327 | Introduction of Python Programming                              | Elective    |
| 9         | EE327<br>EE405 | · · · ·   | Elective    |
| 10        | EE403<br>EE421 | Digital Signal Processing  Microcontroller and Embedded Systems | Elective    |
| 10        |                | Robotics and Machine Vision                                     |             |
|           | EE442          |   | Elective    |
| 12        | EE446          | Data Communication and Computer Networks                        | Elective    |
| 13        | EE448          | Big Data Analytics  | Elective    |
| 14        | EE450          | Cloud Computing Fundamentals                                    | Elective    |
|           |                | ower Electronics and Renewable Energy for IOT Systems           | T = -       |
| S. No     | Course Code    | Course Title  | Course Type |
| <u> </u>  | EE204          | Power Transmission and Distribution                             | Compulsory  |
| 2         | EE301          | Power Electronics   | Compulsory  |
| 3         | EE302          | Electric Drives   | Elective    |
| 4         | EE317          | Renewable Energy Systems  | Elective    |
| 5         | EE312          | Power Electronic Applications to Power Systems                  | Elective    |
| 6         | EE316          | Switch mode power supply  | Elective    |
| 7         | EE417          | PWM for Power Converters  | Elective    |
| 8         | EE427          | Power Electronics Application to Photovoltaic Systems           | Elective    |
| 9         | EE408          | Restructured Power Systems                                      | Elective    |
| 10        | EE416          | Grid Integration of Renewable Energy Sources                    | Elective    |
| 11        | EE418          | Selected Topics in Power Electronics                            | Elective    |
| 12        | EE420          | Power Quality   | Elective    |
| 13        | EE422          | High Voltage DC Transmission                                    | Elective    |
| 14        | EE424          | Flexible AC Transmission Systems                                | Elective    |
| 15        | EE426          | Smart Grid  | Elective    |
|           | •              | Minor in Electric Vehicle Tech. in EED                          | •           |

dtu.ac.in 140

| S. No. | Course Code | Course Title  | Course Type |
|--------|-------------|---|-------------|
| 1      | EV301       | Fundamentals of Electric-Vehicles                             | Compulsory  |
| 2      | EV302       | Power Electronics Converters and Drives for Electric Vehicles | Compulsory  |
| 3      | EV351       | Energy Storage Systems for Electric and Hybrid Vehicles       | Elective    |
| 4      | EV353       | E Mobility  | Elective    |
| 5      | EV355       | Electric Vehicles, Design, Dynamics and Testing               | Elective    |
| 6      | EV357       | Converters and Charging infrastructure                        | Elective    |
| 7      | EV352       | Automotive Electronics and Embedded Systems                   | Elective    |
| 8      | EV354       | Electric Vehicles Retrofitting, Testing and Troubleshooting   | Elective    |
| 9      | EV356       | Intelligent Transportation Systems                            | Elective    |
| 10     | EV358       | Plug in Electric Vehicles in Smart Grid                       | Elective    |

# Minors offered by Department of Electronics & Communication Engineering

|        | Minor in Electronics and Communication Engineering |   |             |  |
|--------|--|---|-------------|--|
| S. No. | Course Code  | Course Title                                | Course Type |  |
| 1      | EC203  | Digital Design -I                           | Compulsory  |  |
| 2      | EC207  | Analog Electronics -1                       | Compulsory  |  |
| 3      | EC209  | Communication systems                       | Compulsory  |  |
| 4      | EC202  | Electromagnetics                            | Elective    |  |
| 5      | EC206  | Digital Communication                       | Elective    |  |
| 6      | EC208  | Computer Architecture                       | Elective    |  |
| 7      | EC210  | Analog Electronics-II                       | Elective    |  |
| 8      | EC301  | Digital Signal Processing                   | Elective    |  |
| 9      | EC303  | Linear Integrated Circuits                  | Elective    |  |
| 10     | EC304  | Embedded Systems                            | Elective    |  |
| 11     | EC305  | Microwave and RF communication              | Elective    |  |
| 12     | EC306  | Flexible Electronics                        | Elective    |  |
| 13     | EC307  | Semiconductor Device Electronics            | Elective    |  |
| 14     | EC309  | Biomedical Electronics and Instrumentation  | Elective    |  |
| 15     | EC313  | Microprocessor And Interfacing              | Elective    |  |
| 16     | EC317  | Control System                              | Elective    |  |
| 17     | EC326  | Digital Image Processing                    | Elective    |  |
| 18     | EC404  | Smart Antennas                              | Elective    |  |
| 19     | EC406  | Wireless Communications                     | Elective    |  |
| 20     | EC411  | Optical Communication                       | Elective    |  |
| 21     | EC413  | Computer Vision                             | Elective    |  |
| 22     | EC417  | MEMS and sensor design                      | Elective    |  |
| 23     | EC421  | Spread spectrum communication               | Elective    |  |
|        | De 121   | Minor in VLSI Design                        |             |  |
| S. No. | Course Code  | Course Title                                | Course Type |  |
| 1      | EC204  | Digital Design -II                          | Compulsory  |  |
| 2      | EC207  | Analog Electronics-I                        | Compulsory  |  |
| 3      | EC302  | VLSI Design                                 | Compulsory  |  |
| 4      | EC210  | Analog Electronics-II                       | Elective    |  |
| 5      | EC208  | Computer Architecture                       | Elective    |  |
| 6      | EC304  | Embedded Systems                            | Elective    |  |
| 7      | EC307  | Semiconductors Device Electronics           | Elective    |  |
| 8      | EC308  | Analog Filter design                        | Elective    |  |
| 9      | EC310  | Testing And Diagnosis Digital System Design | Elective    |  |
| 10     | EC313  | Microprocessor And Interfacing              | Elective    |  |
| 11     | EC314  | Machine Learning                            | Elective    |  |
| 12     | EC315  | IC Technology                               | Elective    |  |
| 13     | EC318  | RF MEMS Design Technology                   | Elective    |  |
| 14     | EC409  | System On-Chip Design                       | Elective    |  |
| 15     | EC410  | Low Power VLSI Design                       | Elective    |  |
| 16     | EC413  | Computer Vision                             | Elective    |  |
| 17     | EC417  | MEMS and Sensor Design                      | Elective    |  |
|        | Minor in Signal Processing & Machine Intelligence  |   |             |  |
| S. No  | Course Code  | Course Title                                | Course Type |  |
| 1      | EC201  | Probability and random Processes            | Compulsory  |  |
| 2      | EC205  | Signal and systems                          | Compulsory  |  |
| 3      | EC301  | Digital Signal Processing                   | Compulsory  |  |
| 4      | EC311  | Algorithm Design and Analysis               | Elective    |  |
| 5      | EC312  | Software Define Radio                       | Elective    |  |
|        | 1  |   | 1           |  |

| 6  | EC314 | Machine Learning                | Elective |
|----|-------|---------------------------------|----------|
| 7  | EC316 | Wireless Sensor Network         | Elective |
| 8  | EC320 | Soft Computing                  | Elective |
| 9  | EC322 | Operating System                | Elective |
| 10 | EC324 | Speech Processing               | Elective |
| 11 | EC326 | Digital Image Processing        | Elective |
| 12 | EC328 | Information Theory and Coding   | Elective |
| 13 | EC405 | Radar Signal Processing         | Elective |
| 14 | EC404 | Smart Antennas                  | Elective |
| 15 | EC407 | Statistical Signal Processing   | Elective |
| 16 | EC408 | Deep Learning                   | Elective |
| 17 | EC411 | Optical Communication           | Elective |
| 18 | EC413 | Computer Vision                 | Elective |
| 19 | EC412 | Estimation and Detection Theory | Elective |
| 20 | EC415 | Bio-Medical Signal Processing   | Elective |
| 21 | EC414 | Fundamentals of MIMO            | Elective |
| 22 | EC423 | Adaptive Signal Processing      | Elective |
| 23 | EC425 | Data Analytics                  | Elective |
| 24 | EC427 | Multi-rate Signal Processing    | Elective |

# Minors offered by Department of Environmental Engineering

|        |             | Minor in Environmental Engineering                       |             |
|--------|-------------|--|-------------|
| S. No. | Course Code | Course Title   | Course Type |
| 1      | EN207       | Water Treatment & Design                                 | Compulsory  |
| 2      | EN210       | Wastewater Engineering: Design and Applications          | Compulsory  |
| 3      | EN204       | Air Pollution & Control                                  | Compulsory  |
| 4      | EN205       | Environmental Chemistry and Microbiology                 | Elective    |
| 5      | EN208       | Solid Waste Management                                   | Elective    |
| 6      | EN303       | Environmental Management and Sustainable Development     | Elective    |
| 7      | EN305       | Global Warming and Climate Change                        | Elective    |
| 8      | EN302       | Environmental Impact Assessment                          | Elective    |
| 9      | EN304       | Environmental Law and Policy                             | Elective    |
| 10     | EN419       | Non-Conventional Energy Systems                          | Elective    |
|        |             | r in Sustainability and Environmental Management         |             |
| S. No. | Course Code | Course Title   | Course Type |
| 1      | EN419       | Non-Conventional Energy Systems                          | Compulsory  |
| 2      | EN318       | Environmental Risk Assessment                            | Compulsory  |
| 3      | EN322       | Green Technology   | Compulsory  |
| 4      | EN415       | Noise Pollution & Control                                | Elective    |
| 5      | EN311       | Environmental Pollution & E-waste Management             | Elective    |
| 6      | EN421       | Disaster Management                                      | Elective    |
| 7      | EN314       | Water and Soil Conservation                              | Elective    |
| 8      | EN411       | Risk and Reliability Analysis of Environmental<br>System | Elective    |
| 9      | EN405       | Occupational Hazards, Health & Safety                    | Elective    |
| 10     | EN410       | Life Cycle Assessment                                    | Elective    |
| 11     | EN406       | Industrial Waste Management                              | Elective    |
| 12     | EN312       | Surface & Ground Water Pollution                         | Elective    |
|        | N           | Minor in Environmental Remediation & Control             |             |
| S. No  | Course Code | Course Title   | Course Type |
| 1      | EN307       | Soil Pollution & Remediation                             | Compulsory  |
| 2      | EN315       | Automobile Emission & Control                            | Compulsory  |
| 3      | EN318       | Environmental Risk Assessment                            | Compulsory  |
| 4      | EN405       | Occupational Hazards, Health & Safety                    | Elective    |
| 5      | EN312       | Surface & Ground Water Pollution                         | Elective    |
| 6      | EN410       | Life Cycle Assessment                                    | Elective    |
| 7      | EN308       | Hazardous & Biomedical Waste Management                  | Elective    |
| 8      | EN311       | Environmental Pollution & E-waste Management             | Elective    |
| 9      | EN309       | Environmental Toxicology                                 | Elective    |
| 10     | EN415       | Noise Pollution & Control                                | Elective    |
| 11     | EN419       | Non-Conventional Energy Systems                          | Elective    |

# **Minors offered by Department of Information Technology**

| S. No.                            |             | 1,111101 111 11110111111111111111111111            | Minor in Information Technology |  |  |  |  |
|-----------------------------------|-------------|--|---------------------------------|--|--|--|--|
|                                   | Course Code | Course Title                                       | Course Type                     |  |  |  |  |
| 1                                 | IT203       | Data Structures                                    | Compulsory                      |  |  |  |  |
| 2                                 | IT208       | Algorithm Design & Analysis                        | Compulsory                      |  |  |  |  |
| 3                                 | IT303       | Computer Networks                                  | Compulsory                      |  |  |  |  |
| 4                                 | IT210       | Machine Learning                                   | Elective                        |  |  |  |  |
| 5                                 | IT301       | Compiler Design                                    | Elective                        |  |  |  |  |
| 6                                 | IT311       | Malware Analysis                                   | Elective                        |  |  |  |  |
| 7                                 | IT202       | Software Engineering                               | Elective                        |  |  |  |  |
| 8                                 | IT319       | Information and Network Security                   | Elective                        |  |  |  |  |
| 9                                 | IT419       | Big Data Analysis                                  | Elective                        |  |  |  |  |
| 10                                | IT204       | Operating Systems                                  | Elective                        |  |  |  |  |
| 11                                | IT304       | Cyber Security                                     | Elective                        |  |  |  |  |
| 12                                | IT318       | Natural Language Processing                        | Elective                        |  |  |  |  |
| 13                                | IT308       | Pattern Recognition and Applications               | Elective                        |  |  |  |  |
| 13                                | 11300       | Minor in Cyber Security                            | Elective                        |  |  |  |  |
| S. No.                            | Course Code | Course Title                                       | Course Type                     |  |  |  |  |
| 1                                 | IT310       | Secure Coding                                      | Compulsory                      |  |  |  |  |
| 2                                 | IT311       | Malware Analysis                                   | Compulsory                      |  |  |  |  |
| 3                                 | IT304       | Cyber Security                                     | Compulsory                      |  |  |  |  |
| 4                                 | IT421       | Ethical Hacking                                    | Elective                        |  |  |  |  |
| 5                                 | IT319       | Information and Network Security                   | Elective                        |  |  |  |  |
| 6                                 | IT309       | Cyber Laws   | Elective                        |  |  |  |  |
| 7                                 | IT413       | Information Security and Audit                     | Elective                        |  |  |  |  |
| 8                                 | IT406       | Mobile and Digital Forensics                       | Elective                        |  |  |  |  |
| 1                                 | Min         | or in Artificial Intelligence and Machine Learning | 1                               |  |  |  |  |
| S. No                             | Course Code | Course Title                                       | Course Type                     |  |  |  |  |
| 1                                 | IT307       | Deep Learning                                      | Compulsory                      |  |  |  |  |
| 2                                 | IT322       | Computer Vision                                    | Compulsory                      |  |  |  |  |
| 3                                 | IT318       | Natural Language Processing                        | Compulsory                      |  |  |  |  |
| 4                                 | IT308       | Pattern Recognition and Applications               | Elective                        |  |  |  |  |
| 5                                 | IT416       | Dependable AI                                      | Elective                        |  |  |  |  |
| 6                                 | IT316       | Digital Image Processing                           | Elective                        |  |  |  |  |
| 7                                 | IT429       | Generative AI                                      | Elective                        |  |  |  |  |
| 8                                 | IT417       | Multimodal Data Processing                         | Elective                        |  |  |  |  |
| 9                                 | IT404       | Speech & Natural Understanding                     | Elective                        |  |  |  |  |
| Minor in Internet of Things (IoT) |             |  |                                 |  |  |  |  |
| S. No.                            | Course Code | Course Title                                       | Course Type                     |  |  |  |  |
| 1.                                | IT313       | Internet of Things                                 | Compulsory                      |  |  |  |  |
| 2.                                | IT330       | Ubiquitous Sensing, Computing, and Communication   | Compulsory                      |  |  |  |  |
| 3.                                | IT431       | Embedded Systems for IoT                           | Compulsory                      |  |  |  |  |
| 4.                                | IT332       | Intelligent IOT                                    | Elective                        |  |  |  |  |
| 5.                                | IT418       | Sensor Technology                                  | Elective                        |  |  |  |  |
| 6.                                | IT433       | IoT with Arduino, ESP, and Raspberry Pi            | Elective                        |  |  |  |  |
| 7.                                | IT321       | Introduction to Security of Cyber-Physical Systems | Elective                        |  |  |  |  |

# Minors offered by Department of Mechanical Engineering

|        |             | Minor in Automotive Engineering                |             |
|--------|-------------|--|-------------|
| S. No. | Course Code | Course Title                                   | Course Type |
| 1      | AE210       | Mechanics of Solids                            | Compulsory  |
| 2      | AE303       | Design of Machine Elements                     | Compulsory  |
| 3      | AE302       | Manufacturing Technology - 2                   | Compulsory  |
| 4      | AE307       | Combustion Generated Pollution                 | Elective    |
| 5      | AE311       | Tyre Technology                                | Elective    |
| 6      | AE317       | Power Units and Transmission                   | Elective    |
| 7      | AE319       | Computer Simulation of I.C. Engine Process     | Elective    |
| 8      | AE310       | Quality Management & Six Sigma Applications    | Elective    |
| 9      | AE316       | Materials for Automobile Components            | Elective    |
| 10     | AE405       | Design of Automobile Components                | Elective    |
| 11     | AE411       | Vehicle Maintenance & Tribology                | Elective    |
| 12     | AE412       | Automobiles Vibration System Analysis          | Elective    |
| 13     | AE424       | Automobile Process Control                     | Elective    |
| 13     | 112121      | Minor in Mechanical Engineering                | Elective    |
| S. No. | Course Code | Course Title                                   | Course Type |
| 1      | ME209       | Mechanics of Solids                            | Compulsory  |
| 2      | ME208       | Manufacturing Technology-1                     | Compulsory  |
| 3      | ME305       | Refrigeration and Air Conditioning             | Compulsory  |
| 4      | ME307       | Power Plant Engineering                        | Elective    |
| 5      | ME317       | Computational Fluid Dynamics                   | Elective    |
| 6      | ME319       | Finite Element Methods                         | Elective    |
| 7      | ME316       | Computer Aided Manufacturing                   | Elective    |
| 8      | ME326       | Composite Material Technology                  | Elective    |
| 9      | ME419       | Advanced Manufacturing Process                 | Elective    |
| 10     | ME427       | Computer Integrated Manufacturing              | Elective    |
| 11     | ME404       | Computer Aided Design                          | Elective    |
| 12     | ME408       | Combustion Generated Pollution                 | Elective    |
|        |             | Minor in Production and Industrial Engineering |             |
| S. No. | Course Code | Course Title                                   | Course Type |
| 1      | PE207       | Machine Tools and Manufacturing                | Compulsory  |
| 2      | PE301       | Manufacturing Technology                       | Compulsory  |
| 3      | PE304       | Precision Manufacturing                        | Compulsory  |
| 4      | PE311       | Rapid Prototyping Tooling & Manufacturing      | Elective    |
| 5      | PE313       | Sustainable Manufacturing                      | Elective    |
| 6      | PE315       | Design Innovation & Manufacturing              | Elective    |
| 7      | PE319       | Total Life Cycle Management                    | Elective    |
| 8      | PE310       | Industrial Automation                          | Elective    |
| 9      | PE314       | Manufacturing of Composite Materials           | Elective    |
| 10     | PE409       | CNC Machine & Programming                      | Elective    |
| 11     | PE411       | Computer Integrated Design and Manufacturing   | Elective    |
| 12     | PE417       | Flexible Manufacturing System                  | Elective    |
| 13     | PE416       | Advance Manufacturing Processes                | Elective    |

# Minors offered by Department of Software Engineering

|   | Minor in Software Engineering |                                      |             |  |
|---|-------------------------------|--------------------------------------|-------------|--|
| S. No   | Course Code                   | Course Title                         | Course Type |  |
| 1   | SE209                         | Software Engineering Methodologies   | Compulsory  |  |
| 2   | SE208                         | Database Management Systems          | Compulsory  |  |
| 3   | SE204                         | Object-Oriented Software Engineering | Elective    |  |
| 4   | SE301                         | Software Testing                     | Elective    |  |
| 5   | SE303                         | Software Quality and Metrics         | Elective    |  |
| 6   | SE307                         | Software Requirement Engineering     | Elective    |  |
| 7   | SE302                         | Empirical Software Engineering       | Elective    |  |
| 8   | SE306                         | Software Reliability                 | Elective    |  |
| 9   | SE405                         | Software Maintenance                 | Elective    |  |
| 10  | SE423                         | Software Project Management          | Elective    |  |
| 11  | SE404                         | Advances in Software Engineering     | Elective    |  |
| 12  | SE335                         | Minor Project                        | Elective    |  |
| Minor in Data Analytics (For students of other Disciplines) |                               |                                      |             |  |
| S. No   | Course Code                   | Course Title                         | Course Type |  |
| 1   | SE203                         | Data Structures                      | Compulsory  |  |
| 2   | SE208                         | Database Management Systems          | Compulsory  |  |
| 3   | SE206                         | Machine Learning                     | Elective    |  |
| 4   | SE331                         | Predictive Analytics                 | Elective    |  |
| 5   | SE329                         | Methods for Data Analysis            | Elective    |  |
| 6   | SE324                         | Probability and Statistics           | Elective    |  |
| 7   | SE407                         | Deep Learning                        | Elective    |  |
| 8   | SE425                         | Data Warehouse and Data Mining       | Elective    |  |
| 9   | SE427                         | Data Management and Ethics           | Elective    |  |
| 10  | SE410                         | Semantic Web and Web Mining          | Elective    |  |
| 11  | SE414                         | Big Data Analytics                   | Elective    |  |
| 12  | SE335                         | Minor Project                        | Elective    |  |

# Minors offered by Vinod Dham Centre of Excellence for Semiconductors and Microelectronics (VDSemiX)

| Minor in Semiconductors and Microelectronics |             |   |             |
|--|-------------|---|-------------|
| S. No.                                       | Course Code | Course Title  | Course Type |
| 1  | SC301       | Advanced Semiconductor Device Physics                             | Compulsory  |
| 2  | SC302       | Compact Modelling and Process Simulation of Semiconductor Devices | Compulsory  |
| 3  | SC303       | Advanced Wafer Processing   | Compulsory  |
| 4  | SC304       | Advanced Chiplets Packaging and Reliability Engineering           | Compulsory  |
| 5  | SC306       | Semiconductor Optoelectronics                                     | Elective    |
| 6  | SC401       | Next Generation Semiconductor Materials                           | Elective    |
| 7  | SC402       | Memory Design   | Elective    |
| 8  | SC403       | MEMs and Sensor Design  | Elective    |
| 9  | EC409       | System On Chip Design   | Elective    |
| 10   | EC410       | Low Power VLSI Design   | Elective    |

### **Guidelines for Implementation of Minors**

- a) A student opting for a Minor offered by his/her own discipline shall have to earn only 20 credits (5 courses) from the prescribed basket whereas, for obtaining Minor of disciplines other than his/her own discipline, he/she will have to earn 24 credits (6 courses).
- b) Student desirous of opting a Minor shall register for the same in 4th semester of his/her program of study.
- c) Student shall be permitted to register for the courses pertaining to the Minor opted by him/her as and when they are offered by the respective department (i.e. odd or even semester) during his/her studies.
- d) If a student has already earned credits for a course from some discipline other than the one in the basket of a Minor, and its syllabus is similar to the course of Minor then an Equivalence Committee may examine and recommend for counting these credits towards requirement of Minor. The Constitution of Equivalence Committee shall be (i) HoD's of department offering Minor; (ii) Head of Department in which student is enrolled; (iii) Coordinator of the course.
- e) Academic departments shall ensure that courses across the Minors offered by the departments shall not be common/similar enough so that a student is able to earn two Minors on the basis of same courses. A student shall not be allowed to opt for Two Minors in any case.
- f) Academic departments shall offer sufficient number of electives. Normally, Maximum class strength for an elective shall not exceed 75 students. Electives shall be offered to students on first come, first served basis irrespective of his/her discipline.

### Procedure for Conduct and Evaluation of Mini Project

**Course Objective:** The aim of the mini project is to enable the students apply knowledge to address the real-world situation/problem and find the solutions for them. The students will be required to produce and present a working prototype at the end of the course.

### 1 Course Content

The requirement of this course is to design and develop a product which provides solution to a real-world situation/problem.

The outcome of the mini project would be considered for the award of credits based upon the development of a working prototype in the prescribed duration of the course.

### 2 Procedure for Conduct and Evaluation

- 1) This course will be offered in the 5th semester of the B. Tech. program and its total duration will be two semesters.
- 2) The student/team shall register for the course in the beginning of the 5th semester along with the name of the faculty advisor and consent letter from the faculty advisor. A team for mini project may have at the most two students only.
- 3) The student(s) shall be required to prepare a title that relates to the engineering discipline and the topic MUST emulate a real-world situation/problem. An early proposal in prescribed format (Format enclosed in 'Forms and Formats' Section) must be submitted describing the proposed idea and the expected output of the final product in the office of HOD within 10 days of registration.
- 4) The duration of the course will be one year. The evaluation will be based on two progress reports submitted in semester 5th and 6th and End-Term Examination (ETE) conducted at the end of 6th semester with the weightage of 40% and 60% respectively. During each semester two progress reports of 3-4 pages must be submitted briefing on the current progress.
- 5) The mid semester examination will be held in each of the 5th and 6th semesters with a total weightage of 40%. The Mid-Term examination will involve report submission, presentation and oral viva-voce by the student to the faculty advisor. The evaluation will be based on understanding of the project, quantum and quality of work done and regularity of the student.
- 6) The end term mini project examination will be carried out at the end of 6th semester (for 4 credits) and, within 10 days from the last theory paper. For this purpose, suitable examination committee will be appointed by the BoS, with at least one external examiner.

- 7) The students shall be required to submit a final project report after incorporating correction suggested by the project faculty advisor, with the signature of the faculty advisor, to the department, at least 3 days before the date of end semester mini project examination.
- 8) The final examination presentation may be in the form of demonstration of the product and viva-voce. The final evaluation will be based on the report quality, product demonstration, and presentation and question answer session.
- 9) Absolute grading system will be used for the mini project. The Grade Moderation Committee for the course will be the same as that for other courses of the class.
- 10) In case a student is awarded a failing grade in the mini project, he/she shall have to repeat the course in the form of a new project/register in some other departmental elective course having equivalent credits.
- 11) Normal attendance regulations will not apply to this course.

### The layout of the final report of the mini project report

- a. Title ("Final Report of Mini Project submitted by", name of students with roll numbers, "under the guidance of", name of faculty advisor, DTU Logo and, Delhi Technological University, Delhi, <Month name><Year>").
- b. Acknowledgement
- c. Table of Contents
- d. Introduction
- e. Product specifications/Software requirement specifications
- f. Design of the product (Methodology, structured chart, algorithm, pseudocode)
- g. System Manual
- h. Conclusion
- i. Future work
- i. References
- k. Appendix Code (if any)

### Procedure for Conduct and Evaluation of - Undergraduate Research Project

Course objective: The idea of the course is to develop analytical skills and critical thinking among the students. The course will enable the student learn appropriate research methodologies and to use them. The course will enable the student to develop a new idea. Further it will allow the student to understand, apply, interpret and evaluate the research concepts. To summarize, the research experience at the undergraduate level will not only allow the student to learn content, but they will also learn how knowledge is constructed in a particular discipline. The aim of the course is to promote and recognize published research work at the undergraduate level. Hence, the outcome of the course will be a publication in a reputed journal.

### 1. Course Content

The requirement of this course is to conduct original research. The ideas must be relevant, thoroughly analyzed and empirically validated using quantitative, descriptive, correlational, comparative, quasi- theoretical, and experimental techniques.

It may comprise of creative and meticulous work undertaken to contribute to the state of knowledge, including knowledge of universal, biological, societal systems, and the use of valid stock of knowledge to devise new applications. It may be used to establish or confirm facts, reaffirm the results of previous work, solve new or existing problems, support theorems, or develop new theories.

The outcome of the research would be considered for the award of credits based upon a published work in the reputed journals as listed with in the duration of the curriculum.

### 2. Prerequisites

The student must have obtained minimum 6\* CGPA at the end of fourth semester. The faculty advisor must have at least 5\* SCI/SCI-Expanded/Scopus publications.

### 3. Course Details and Publication Acceptance Criteria:

The course will be offered to the students in the 5th semester. The students will be allowed to earn 4 credits by publishing paper in the third and/or fourth year of B. Tech program provided:

The research work is published in one of the journals listed in the category of premier or commendable research as detailed in point 4;

Faculty advisor is co-author and the number of student authors is not more than two. Further, there cannot be any other co-author from outside /inside the university apart from faculty advisor in the publication.

### 4. Categories of Publication:

The publication made in the journals, which seeks publication fee (article processing charges or open access charges), shall not be considered for irrespective of the listing in the publication societies/ houses/ presses specified in the following lists.

### Category A) Premier Research Publications

The research publication must be in a journal, indexed in SCI or SCI expanded and published in the following:

- 1. Proceedings of Royal Society
- 2. American Mathematical Society
- 3. American Physical Society
- 4. American Society for Civil Engineers (ASCE)
- 5. American Society for Mechanical Engineers (ASME)
- 6. IEEE Transactions
- 7. Association for Computing Machinery (ACM) Transactions
- 8. Institute of Civil Engineering Publishing, London
- 9. Institute of Mechanical Engineering, London
- 10. American Society of Testing Materials (ASTM)
- 11. Nature Publishing Group

In addition to the above list, the journals with impact factor equal to or more than thirty (30) will be also be considered.

### Category B) Commendable Research Publications

The research publication must be in a journal indexed in SCI or SCI expanded and published in the following:

- 1. IEEE Journals
- 2. Springer
- 3. Elsevier (Science Direct)
- 4. Oxford University Press
- 5. Pergamon-Elsevier Science Ltd
- 6. Cambridge University Press
- 7. Wiley-Blackwell
- 8. Blackwell Publishing
- 9. John Wiley & Sons
- 10. Institute of Engineering and Technology (IET)
- 11. Biomedical Central Ltd
- 12. MIT Press
- 13. Indiana University Press

<sup>\*</sup>In case of the student extremely willing to pursue this course prerequisite can be waived with the recommendation of HOD/Dean IRD By the vice chancellor.

- 14. American Meteorological Society
- 15. American Physiological Society
- 16. American Society for Microbiology
- 17. American Chemical Society
- 18. American Institute of Physics
- 19. IOP Publishing Ltd.
- 20. Massachusetts Medical Society
- 21. IOS Press
- 22. Princeton University Press
- 23. Society of Industrial and Applied Mathematics
- 24. Proceedings of National Academy of Sciences of USA

In addition to the above list, SCI and SCI expanded indexed journal not included in the above list having impact factor equal to or more than five shall also be considered.

### 5. Process of Registration and Award of Grades

- A. The student will be required to register for the course in the beginning of the fifth semester along with the name of the faculty advisor and consent letter from the faculty advisor.
- B. The credits can be earned by the student in subsequent semester (VI-VIII) when the student provides evidence, through faculty advisor and HOD, of the online publication of the research paper. For, instance, if the student provides evidence of the online publication in semester 5th, 4 credits will be awarded to the student in semester 6th. However, in case the publication is made in the semester 8th, the student will be awarded credits in the same semester.
- C. The following grades will be awarded to the students based on the category of the publication:

| Publication Condition   | Grad<br>e |
|---|-----------|
| Publication in Premier/Commendable Research category with impact factor >=1                 | О         |
| Publication in Premier/Commendable Research category with impact factor between 0.1 to 0.99 | A+        |

- D. In case a student wants to withdraw from this course then he will have to earn 04 credits by registering in an alternative departmental elective course.
- E. If a student has not registered for this research course in 5th semester but is able to meet all other requirements for earning the credits from UG research project course then he/she may be allowed to replace his grade and credits earned from some other elective course with grade and credits earned from UG research project

### $Procedure \ for \ Conduct \ and \ Evaluation \ of \ Entrepreneurs hip \ and \ Venture \ Development$

**Course Objective:** The aim of the Entrepreneurship track is to help student to build-up entrepreneurial skills and encourage the start-up culture in the University.

The students who opt for entrepreneurship program will be required to produce credible evidence of establishing enterprise/start-up which has been conceptualized and started operation

### 1. Course Content

The requirements of this course is to conceptualize a business idea and develop the idea into the form of a Start-up/Enterprise/ Venture which comes into operation at the end of course with credible evidence of operation.

The outcome of the Entrepreneurship course would be considered for the award of credits based upon the credible evidence of operation of the start-up.

### 2. Course Registration

- a. The Entrepreneurship option will be offered to the students in the V semester as part of Departmental/General elective courses.
- b. The duration of the course shall be 1-2 year. The examination for the course will be conducted at the end of the VI to VIII semester.
- c. A maximum of four students can register for this elective out of which not more than two should be from the specific department.

### 3. Procedure of Conduct and Evaluation

- a. The registered student/team must submit a proposal detailing the enterprise being setup including innovative idea generation, planning, organizing, financing and marketing strategies of the proposed plan in the academic section within 10 days of registration, in the prescribed format. ((Format enclosed in Forms and Formats Section)
- b. An evaluation committee, comprising of (i) Chairperson(s) BOS of the respective department of the student/team (ii) Two faculty members and (iii) External expert; nominated by Vice chancellor will approve/reject proposals based on the merits and expected outcome of the proposals. The same committee may also assign the maximum possible grades for an approved proposal.
- c. The duration of the course shall be 1-2 years. The examination for the course shall be conducted at the end of the VI to VIII semester.
- d. The evaluation of the course will be based on mid-term and end term examination with a weightage of 40% and 60% respectively.
- e. The mid-term evaluation will be held at the end of each semester till the proposal approaches its outcome. The mid-term evaluation will be based on progress reports submitted and presentation at the end of every semester, before final submission.
- f. The end term examination will be carried out at the end of VI to VIII semester and not later than 10 days from the last theory paper examination. The examination will be conducted by the same committee which approved the proposal. However, in case of non-availability of any of the members the Vice Chancellor may nominate other examiners.
- g. The student/team shall be required to submit a final detailed project report (DPR) at least 3 days before the scheduled date of end semester examination for this course.
- h. The final evaluation will be based on the proposal outcome, report quality, presentation and viva voce.
- i. Absolute grading system will be used for the course. The Grade Moderation Committee for the course will be the same as that for other courses of the class.
- j. In case a student/team is awarded a failing grade in the course student/team shall have to repeat the course either in the form of a new project or register in some other departmental/generic elective course having equivalent credits as per their choice.
- k. In case a student/team wants to drop this course the student/team shall have to register in some other departmental/generic elective course having equivalent credits.
- 1. Normal attendance regulations will not apply to this course.

### **Guidelines for Evaluation of Industrial/Field Training**

- a) Every student will submit a written report to the Training and Placement Department on the work carried out during the training period along with a certificate from the Organization where training was undertaken. HoD of Training and Placement will forward all these reports to respective departments.
- b) A time slot of 2 hour/week/batch will be assigned in the student time table and the students will be asked to present their work in the form of a seminar of about 30-minutes duration, before a committee appointed by the BoS and other students of that batch.
- c) The performance of the students will be evaluated by the committee in marks on the basis of (i) the training report, (ii) presentation, (iii) viva-voce.

- d) Although normal attendance will not apply to this course component, 10-20% marks will be awarded on the basis of attendance in seminars to encourage participation of the entire class.
- e) The grades will be computed on the basis of the established procedure as for other courses.
- f) The grade moderation committee for the course will be the same as that for the other courses of the class.
- g) If a student is awarded a "F" grade in this course, he/she shall have to repeat the course by undergoing 6-10 week training either at the University or at an organization outside the University during the summer vacation following the eighth semester.

#### Procedure for Conduct and Evaluation of B. Tech. Project

- a) This course will be offered in the final year of the B. Tech. program and its total duration will be two semesters.
- b) Head of the department shall appoint a project coordinator on the advice of BoS from amongst the faculty members of the department who will act as the course coordinator.
- c) The project can be carried out by the student either individually or in a group. However the number of students in a group will generally not exceed three.
- d) The project coordinator will invite proposals from the faculty members and students and finalize the project problems allotted to various groups by August 31, in the 7th semester.
- e) An L-T-P loading of 0-0-4 and 0-0-8 will be shown in the time table of students in the seventh and eighth semesters, respectively and the students would be required to work on their projects during these periods. However, no teacher will be assigned for these periods and the progress of students will be monitored by their respective supervisors.
- f) The evaluation will be based upon Mid–Term examinations (MTE) and an End-Term examination (ETE) with a weightage of 40% and 60% respectively.
- g) Mid-Term examination will be held in each of the 7th and 8th semesters. The Mid-Term examination will involve report submission, presentation and oral viva-voce. For this purpose, suitable committees will be constituted by the BoS for evaluation of report, presentation and oral viva-voce. The project examination committees will award marks to individual students and forward them to the project coordinator who will maintain these record.
- h) The end term project examination will be carried out at the end of 7th (for 4 credits) and 8th (for 8 credits) semester respectively, within 10 days form the last theory paper. For this purpose, suitable examination committees will be appointed by the BoS in consultation with the project coordinator, with at least one external examiner. In case an examiner from outside the University is not available, faculty member of the University from outside the Department may be appointed as an external examiner after taking his/her consents.
- i) The students will be required to submit a final project report to the project coordinator, at least 3 days before the date of final project examination.
- j) The final examination may be in the form of demonstration in the laboratory and viva-voce or only viva-voce depending upon the nature of the project.
- k) The examination committee will award marks to individual students and forward them to project coordinator who will compute grades in accordance with the prescribed procedures as given in Project Grade Table below.
- 1) The students will be required to submit a final project report to the project coordinator, at least 3 days before the date of final project examination.
- m) The final examination may be in the form of demonstration in the laboratory and viva-voce or only viva voce depending upon the nature of the project.
- n) The examination committee will award marks to individual students and forward them to project coordinator who will compute grades in accordance with the prescribed procedures as given in Project
- o) The Grade Moderation Committee for the course will be the same as that for other courses of the class.
- p) In case a student is awarded a failing grade in the B.Tech. Project, he / she shall have to repeat the course in the form of a new project. Such a student will have to work full time on the project for a minimum period of 4 months.
- q) Normal attendance regulations will not apply to this course.

#### **Project Grade Table for Evaluation**

A. Grade table for evaluation of project

| Maximum | Conditions to be fulfilled.  |  |  |  |  |
|---------|--|--|--|--|--|
| Grade*  |  |  |  |  |  |
| O       | One paper accepted/published in SCI/SCIE/SSCI/Scopus indexed journal and on the basis of other rubrics of project evaluation such as scientific understanding, experimental design, continuous evaluation, project/dissertation report, presentation and performance during the viva-voce.   |  |  |  |  |
| A+      | One good quality full length paper accepted/published in peer reviewed ESCI Journal/Scopus indexed conference proceedings and on the basis of other rubrics of project evaluation such as scientific understanding, experimental design, continuous evaluation, project/dissertation report, presentation and performance during the viva- voce. |  |  |  |  |
| A       | On the basis of other rubrics of project evaluation such as scientific understanding, experimental design, continuous evaluation, project/dissertation report, presentation and performance during the viva- voce.   |  |  |  |  |

<sup>\*</sup>Committee may give any grade from F to Maximum grade.

- i) The student/ team who want to opt their major project as Startup or Product Development must submit a declaration form as prescribed format given in Annexure —I in the first week August to the coordinator. A department level committee may be constituted for evaluations of project based on Startup/Technology development with following composition.
  - a. Chairperson BOS or Professor nominated by BOS.
  - b. Two nominations from DTU-IIF in the category of Successful entrepreneur /angel investor or Venture Capitalist/Product or Technology Expert or Technology transfer expert.
  - c. Department Faculty Coordinator., Member Secretary.

#### B. Grade table for evaluation of project as Start -Up

| Maximum<br>Grade* | Conditions to be fulfilled  |
|-------------------|---|
| O                 | Department for Promotion of Industry and Internal Trade (DPIIT) recognized start-up or received seed funding from Govt. for startup and raised external funding of at least Rs. 30 lakhs and on the basis of other rubrics of project evaluation such as Value creation, Market Size, Sectoral Growth Rate, Scalability in the Business, Business execution & operation model, Risks involved and Mitigation Plans, Financial Returns and revenue model, Intellectual Property if any, Awards, Achievement, Accolades etc., continuous evaluation, project/dissertation report, presentation and performance during the viva- voce. |
| A+                | Establish the legal structure of the start-up company or DPIIT recognition or receiving seed funding from central/state Govt. schemes or from some incubator and on the basis of other rubrics of project evaluation such as Value creation, Market Size, Sectoral Growth Rate, Scalability in the Business, Business execution & operation model, Risks involved and Mitigation Plans, Financial Returns and revenue model, Intellectual Property if any, Awards, Achievement, Accolades etc., continuous evaluation, project/dissertation report, presentation and performance during the viva- voce.                             |
| A                 | On the basis of stage of start-up i.e. ideation, idea validation, prototyping, creating team and business plan, validation for product market fit, product with pre revenue stage, and other rubrics of project evaluation such as Value creation, Market Size, Sectoral Growth Rate, Scalability in the Business, Business execution & operation model, Risks involved and Mitigation Plans, Financial Returns and revenue model, Intellectual Property if any, Awards, Achievement, Accolades etc., continuous evaluation, project/dissertation report, presentation and performance during the viva- voce.                       |

<sup>\*</sup>Committee may give any grade from F to Maximum grade.

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## C. Grade table for evaluation of project as Product Development

| Maximum<br>Grade* | Conditions to be fulfilled   |
|-------------------|--|
| O                 | Achieving Technology Readiness Level (TRL) 6 i.e. Technology tested/demonstrated under a controlled environment and on the basis of other rubrics of project evaluation such as understanding of translational scientific research, proof-of-concept, testing of technology, continuous evaluation, project/dissertation report, presentation and performance during the viva- voce. |
| A+                | Achieving TRL — 5 i.e. Technology validated in a controlled environment and on the basis of other rubrics of project evaluation such as understanding of translational scientific research, proof-of-concept, testing of technology, continuous evaluation, project/dissertation report, presentation and performance during the viva-voce.  |
| A                 | Achieving TRL- 2 to 4 i.e. Experimental Proof of Concept/ Technology tested in a lab, and on the basis of other rubrics of project evaluation continuous evaluation, project/dissertation report, presentation and performance during the viva- voce.  |

<sup>\*</sup>Committee may give any grade from F to Maximum grade.



## DELHI TECHNOLOGICAL UNIVERSITY

(Formerly Delhi College of Engineering) Shahbad Daulatpur, Main Bawana Road, Delhi-42

F.No. DTU/Reg/Univ.Adm.Com./2023-24/133

Dated: 12.06.2025

### **NOTIFICATION**

Subject: Annual Fee Structure for the students seeking admissions in the Academic Session 2025-26 at DTU.

The Competent Authority has approved the Annual Fee structure of the following programs for the students seeking admission in the Academic Session 2025-26:-

- A. Bachclor of Technology (B.Tech)
- B. Bachelor of Design (B.Des)
- C. Dachelor of Technology (B.Tech) (Lateral Entry)
- D. Bachelor of Technology (B.Tech) (Continuing Education)
- E. Bachelor of Business Administration (BBA) & B.A Economics (H)
- F. Master of Technology (M.Tech)
- G. Master of Technology (M.Tech) (Parl Time)
- H. (i) Master of Business Administration (MBA)
  - (ii) MBA in Innovation, Entrepreneurship and Venturo Development (MBA-IEV)
  - (iii) MBA -Business Analytics (MBA-BA)
- 1. Executive MBA
- J. M.Sc. Programme & M.A (Economics)
- K. Integrated B.Sc & M.Sc.Program
- L. M.Tech by Research.
- M. Master of Dosign (M.Des).
- N. 유네D (Full Time/ Part Time)
- O. DASA Students (UG Programs)
- P. International Students (Admissions through ICCR)
- Q. International Students (Direct Admissions in DTU)
- R. Withdrawal Policy

Ree Structure for students scaking admissions in Academic Year 2025-26 📉 Page 1 of 15

## (A). Bachelor of Technology (B. Tech)

| 8.No. | Particulars   | Fee in<br>AY2025-26 | AY2026-27           | Fee in<br>AY2027-28 | Fee in<br>AY2028-29 |
|-------|---|---------------------|---------------------|---------------------|---------------------|
|       | Tuition Fee   | (Rs)                | (Rs)                | (Rs)                | (Rs)                |
| 1.    |   | 1,63,000            | 1,77,000            | 1,92,000            | 2,08,000            |
| 2.    | Non Govt. Component                                     | 1                   |                     |                     |                     |
| 2.1   | Student Welfare fee                                     | 22,000              | 25,500              | 27,000              | 28,500              |
|       | (Co-curricular Activities, Training & Placement, Extra- |                     |                     |                     | ļ                   |
|       | Curricular Activities, Annual Gathering, Students       |                     |                     |                     | :                   |
|       | welfare, Institutional Development, Outsourcing,        |                     |                     |                     | !                   |
|       | conference, seminar, workshop, innovative projects.     |                     |                     |                     | !                   |
|       | iskill development activities and Misc. Expenditure on  |                     |                     |                     |                     |
|       | unspecified items)                                      |                     | <b>-</b> <u>-</u> . |                     |                     |
| 2.2   | Facilities & Services Charges                           | 36,000              | 38,500              | 40,000              | 42,500              |
|       | (Research initiatives, training programmes, Awards,     |                     |                     |                     |                     |
|       | automation, facilities, entrepreneurship activities and |                     |                     |                     |                     |
|       | any misc. expenditure on unspecified items)             |                     |                     |                     |                     |
| 2.3   | Economically weaker section fund                        | 10,000              | 10,000              | 10,000              | 10,000              |
| 2.4   | Examination fee   | 15,000              | 17,000              | 17,000              | 17000               |
|       | (Examination infrastructure strengthening,              |                     | !                   |                     |                     |
|       | expenditure on examination activities, confidential     |                     |                     |                     |                     |
|       | printing etc.)  |                     |                     |                     |                     |
| 2.5   | DTU Medical facilities and promium amount for medi-     | 700                 | 700                 | 700                 | 700                 |
|       | claim of student (per annum)                            |                     |                     |                     |                     |
| 2.6   | Alumni Association life membership, registration fee    | 1000                |                     | -                   | -                   |
|       | (one time, non-refundable)                              |                     |                     |                     |                     |
| L     | Total   | 2,47,700            | 2,68,700            | 2,86,700            | 3,06,700            |

## (B) Bachelor of Design (B. Des)

| S.No. | Particulars  | Fee in<br>AY2025-26<br>(Rs) | Fee in<br>AY2026-27<br>(Rs) | Fee in<br>AY2027-28<br>(Rs) | Fee in<br>AY2028-29<br>(Rs) |
|-------|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1.    | Tuition Fee  | 1,63,000                    | 1,77,000                    | 1,92,000                    | 2,08,000.                   |
| 2     | Non Govt. Component  |                             |                             |                             |                             |
| 2.1   | Student Welfare fee (Co-curricular Activities, Training & Placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on unspecified items) |                             | 25,500                      | 27,000                      | 28500                       |
| 2.2   | Facilities & Services Charges<br>(Research initiatives, training programmes, Awards,<br>automation, tacilities, entrepreneurship activities and<br>any misc, expenditure on unspecified items)   | 36,000                      | 38,500                      | 40,000                      | 42500                       |
| 2.3   | Economically weaker section fund   | 10,000                      | 10,000                      | 10.000                      | 10,000                      |
| 2.4   | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.)  |                             | 17,000                      | 17,000                      | 17,000                      |
| 2.5   | DTU Medical facilities and premium amount for medi-<br>claim of student (per annum)  | 700                         | 700                         | 700                         | 700                         |
| 2.6   | Alumni Association life membership, registration fee (one time, non-refundable)  | 1000                        |                             |                             | -                           |
| ·     | Total  | 2,47,700                    | 2,68,700                    | 2,86,700                    | 3,06,700                    |

Fee Structure for students seeking admissions in Academic Year 2025-26

Page 2 of 15

## (C). Bachelor of Technology (B. Tech) (Lateral Entry)

| S .No.   | Particulars   | Fee in<br>AY2025-26<br>(Rs.) | Fee in<br>AY2026-27<br>(Rs.) | Fee in<br>AY2027-28<br>(Rs) |
|----------|---|------------------------------|------------------------------|-----------------------------|
| 1.       | Tuition Fee   | 1,63,000                     | 1,77,000                     | 1,92,000                    |
| 2.       | Non Govt. Component   |                              |                              |                             |
| 2.1      | Student Welfare fee   | 22,000                       | 25,500                       | 27,000                      |
|          | (Co-curricular Activities, Training & Placement, Extra  | :                            |                              |                             |
|          | Curricular Activities, Annual Gathering, Students   |                              |                              |                             |
|          | welfare, Institutional Development, Outsourcing,  | İ                            | !                            | !                           |
|          | conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on |                              |                              | !                           |
|          | unspecified items)  |                              |                              | İ                           |
| 2.2      | Facilities & Services Charges   | 36,000                       | 38,500                       | 40,000                      |
|          | (Research initiatives, training programmes, Awards,   |                              | '                            |                             |
|          | automation facilities, entrepreneurship activities and  |                              |                              |                             |
| <b>.</b> | any misc, expenditure on unspecified items)   |                              |                              |                             |
| 2.3      | Economically weaker section fund  | 10,000                       | 10,000                       | 10,000                      |
| 2.4      | Examination fee   | 15,000                       | 17,000                       | 17,000                      |
|          | (Examination Intrastructure strengthening, expenditure  |                              |                              | [                           |
|          | on examination activities, confidential printing etc.)  |                              |                              |                             |
| 2.5      | DTU Medical facilities and premium amount for medi-   | <b>j</b> 700                 | 700                          | 700                         |
|          | claim of student (per annum)  | ļ                            |                              |                             |
| 2.6      | Alumni Association life membership, registration fee  | 1000                         | -                            | -                           |
|          | (one time, non-refundable)  |                              |                              |                             |
|          | Total   | 2,47,700                     | 2,68,700                     | 2,86,700                    |

## (D). Bachelor of Technology (B.Tech) (Continuing Education)

| \$. No. | Particulars  | Fee in<br>AY2025-26<br>(Rs.) | Fee in<br>AY2026-27<br>(Rs.) | Fee in<br>AY2027-28<br>(Rs.) | Fee in<br>AY2028-29<br>(Rs) |
|---------|--|------------------------------|------------------------------|------------------------------|-----------------------------|
| 1.      | Tuition Fee  | 1,00,000                     | 1,00,000                     | 1,00,000                     | 1,00,000                    |
| 2.      | Non Govt. Component  |                              |                              |                              |                             |
| 2.1     | Student Welfare fee  | 16.000                       | 16,000                       | 16,000                       | 16,000                      |
|         | (Co-curricular Activities, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on unspecified items) | <u> </u><br> -               | :                            |                              |                             |
| 2.2     | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified items)  | 21,000                       | 21,000                       | 21,500                       | 21,000                      |
| 2.3     | Economically weaker section fund   | 500                          | 1000                         | 1000                         | 1000                        |
| 2.4     | Examination fee  | 15,000                       | 17,000                       | 17,000                       | 17,000                      |
| İ       | (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.)  |                              |                              | :                            |                             |
| 2.5     | DTU Medical facilities and premium amount for medicalm of student (per annum)  | 500                          | 700                          | 700                          | 700                         |
| 2.6     | Alumni Association life membership, registration fee (one time, non-refundable)  | 1000                         | -                            | -                            |                             |
|         | Total  | 1,54,000                     | 1,55,700                     | 1,55,700                     | 1,55,700                    |

Lee Structure for students seeking admissions in Academic Year 2025-26

Page 3 of 15

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158

#### (E), Bachelor of Business Administration (BBA) & B.A Economics (H)

| S. No.   | Particulars   | Fee in<br>AY2025-26<br>(Rs.) | Fee in<br>AY2026-27<br>(Rs.) | Fee in<br>AY2027-28<br>(Rs.) | Fee in<br>AY2028-29<br>(Rs) |
|----------|---|------------------------------|------------------------------|------------------------------|-----------------------------|
| -···· i. | Tuition Fee   | 62,500                       | 67,500                       | 70,500                       | 70,500                      |
| 2.       | Non Govt. Component   |                              |                              |                              |                             |
| 2.1      | Student Welfare Fee (Co-curricular activities, Training & placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, outsourcing, conference, seminar, workshop, innovative projects, skill development activities and, Misc. Expenditure on Unspecified Items) | 16,000                       | 18,000                       | 19,500                       | 19,500                      |
| 2.2      | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any mise, expenditure on unspecified items)   | 16,000                       | 18,000                       | 19.500                       | 19,500                      |
| 2.3      | Economically weaker section fund  | 6,000                        | 6,000                        | 6,000                        | 6,000                       |
| 2.4      | Examination fee (Examination Infrastructure strengthening expenditure on examination activities, confidential printing etc.   | 15,000                       | †7,000<br>                   | 17,000                       | 17.000                      |
| 2.5      | DTU Medical facilities and premium<br>amount for medi-claim of student (per<br>annum)   | 700                          | 700                          | : 700                        | 700                         |
| 2.6      | Alumni Association life membership, registration fee (one time, non-refundable)   | 1000                         |                              | -                            | -                           |
|          | GRAND TOTAL   | 1,17,200                     | 1,27,200                     | 1,33,200                     | 1,33,200                    |

Tige Structure for students seeking admissions in Academic Year 2025-26

Page 4 of 15

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#### (F). Master of Technology (M.Tech)

| S. No. | Particulars   | Fee in<br>AY2025-26<br>(Rs.) | Fee in<br>AY2026-27<br>(Rs) |
|--------|---|------------------------------|-----------------------------|
| 1.     | Tuition Fee   | 61,300                       | 61,300                      |
| 2.     | Non Govt. Component   |                              | <del></del>                 |
| 2.1    | Student Welfare Fee (Co-curricular activities, Training & placement, Extra Curricular Activities. Annual Gathering, Students welfare, Institutional Development, outsourcing, conference, seminar, workshop, innovative projects, skill development activities and, Misc. Expenditure on Unspecified Items) | 18,00 <b>0</b>               | 18,000                      |
| 2.2    | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc, expenditure on unspecified items)   | 25,000                       | 25,000                      |
| 2.3    | Economically weaker section fund  | 5,000                        | 5,000                       |
| 2.4    | Examination fee (Examination Intrastructure strengthening, expenditure on examination activities, confidential printing etc.  | 15,000                       | 17,000                      |
| 2.5    | DTU Medical tacilities and premium amount for medi-claim of student (per annum)   | 700                          | 700                         |
| 2.6    | Alumni Association life membership, registration fee (one time, non-refundable)   | 1000                         | -                           |
|        | GRAND TOTAL   | 1,26,000                     | 1,27,000                    |
|        | <u> </u>  | I                            | i                           |

#### (G). Master of Technology (Part Time)

| S. No. | Particulars   | Fee in<br>AV 2025-28<br>(Rs.) | Fee in<br>AY 2026-27<br>(Rs.) | Fee in<br>AY2027-28<br>(Rs) |
|--------|---|-------------------------------|-------------------------------|-----------------------------|
| 1.     | Tuition Fee   | 61,300                        | 61.300                        | 61,300                      |
| 2.     | Non Govt. Component   |                               | <u> </u>                      | <u></u> .                   |
| 2.1    | Student Welfare Fee (Co-curricular activities, Training & placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, outsourcing, conference, seminar, workshop, innovative projects, skill development activities and, Misc. Expenditure on Unspecified Items) | 18,000                        | 18,000 ""<br> <br>            | 18,000                      |
| 2.2    | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc, expenditure on unspecified items)   | 25,600                        | 25,000                        | 25,000                      |
| 2.3    | Economically weaker section fund  | 5,000                         | 5,000                         | 5,000                       |
| 2.4    | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.  | 15,000                        | 17,000                        | 17,000                      |
| 2.5    | DTU Medical facilities and premium amount for medi-claim of student (per annum)   | 700                           | 700                           | 700                         |
| 2.6    | Alumni Association (ife membership, registration fee (one time, non-refundable)   | 1006                          | <br>I                         |                             |
|        | GRAND TOTAL   | 1,26,000                      | 1,27,000                      | 1,27,000                    |

Lee Structure for students seeking admissions in Academic Year 2025-26

Page 5 of 15

dtu.ac.in 160

(H). (i) Master of Business Administration (MBA)
 (ii) MBA in Innovation, Entrepreneurship and Venture Development (MBA-IEV)
 (iii) MBA-Business Analytics (MBA-BA)

| S. No. | Particulars   | Fee in<br>AY 2025-26<br>(Rs.) | Fee in<br>AY2026-27<br>(Rs) |
|--------|---|-------------------------------|-----------------------------|
| 1.     | Tultion Fee   | 1,55,000                      | 157000                      |
| 2.     | Non Govt. Component   |                               |                             |
| 2.1    | Student Welfare Fee (Co-curricular activities, Training & placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, outsourcing, conference, seminar, workshop, innovative projects, skill development activities and, Misc. Expenditure on Unspecified Items) | 20,000                        | 23,900                      |
| 2.2    | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc, expenditure on unspecified items)   | 36,000                        | 39,000                      |
| 2.3    | Economically weaker section fund  | 10,000                        | 10,000                      |
| 2.4    | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.  | 15,000                        | 17,000                      |
| 2.5    | DTU Medical facilities and premium amount for medi-claim of student (per annum)   | 700                           | 700                         |
| 2.6    | Alumni Association life membership, registration fee (one time, non-refundable)   | 1000                          | -                           |
|        | GRAND TOTAL   | 2,37,700                      | 2,46,700                    |

#### (I). Executive MBA (EMBA)

| S.No. | Particulars  | Fee in<br>AY 2025-26 (Rs.) | Fee in<br>AY2026-27 (Rs) |
|-------|--|----------------------------|--------------------------|
| 1.    | Tuition Fee  | 2,14,300                   | 2,18,300                 |
| 2.    | Non Govt, Component  |                            |                          |
| 2.1   | Student Welfare Fee (Co-curricular activities, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on Unspecified Items) | 24,000                     | 24,000                   |
| 2.2   | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc expenditure on unspecified items)   | 36,000                     | 36,000                   |
| 2.3   | Economically weaker section fund   | 10,000                     | 10,000                   |
| 2.4   | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.   | 15,000                     | 17,000                   |
| 2.5   | DTU Medical facilities and premium amount for medi-<br>claim of student (per annum)  | 700                        | 700                      |
| 2.6   | Alumni Association life membership, registration fed (one time, non-refundable)  | 1000                       |                          |
|       | GRAND TOTAL  | 3,01,000                   | 3,06,000                 |

Fee Structure for students seeking admissions in Academic Year 2025-26

Page 6 of 15

161

#### (J). M.Sc Program & M.A (Economics)

| S.No. | Particulars  | Fee in<br>AY 2025-26 (Rs.) | Fee in<br>AY2026-27 (Rs.) |
|-------|--|----------------------------|---------------------------|
| 1.    | Tuition Fee  | 24,800                     | 28,500                    |
| 2.    | Non Govt. Component  |                            | _ <del></del>             |
| 2.1   | Student Welfare Fee (Co-curricular activities, Training & placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, outsourcing, conterence, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on Unspecified Items) |                            | 10,000                    |
| 2.2   | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified items)  |                            | 1,500                     |
| 2,3   | Economically weaker section fund   | 5,000                      | 5,000                     |
| 2.4   | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.   | 7,000                      | 7,000                     |
| 2.5   | DTU Medical facilities and premium amount for medi-<br>claim of student (por annum)  | 700                        | 700                       |
| 2.6   | Alumni Association tife membership, registration fee (one time, non-refundable)  | 1000                       | -                         |
|       | GRAND TOTAL  | 50,000                     | 52,700                    |

#### (K). Integrated B.Sc & M.Sc Program

| S. No.  | Particulars  | Fee in<br>AY 2025-26<br>(Rs.) | Fee in<br>AY 2026-27<br>(Rs.) | Fee in<br>AY 2027-28<br>(Rs.) | Fee in<br>AY 2023-29<br>(Rs.) | Pee in<br>AY 2029-30<br>(Rs.) |
|---------|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 1.      | Tuition Fee  | 41,300                        | 44.300                        | 48,300                        | 49,300                        | 52.300                        |
| ···· 2. | Non Govt. Component  | ' <u>-</u>                    |                               |                               |                               |                               |
| 2.1     | Student Walfare Fee (Co-corricular activities Training & placement, Extra Curricular Activities, Annual Gathering, Students welfure, Institutional Development, outsourcing, conference, seminar, workshop, innovative projects, skill development activities and, Misc. Expenditure on Unspecified Items) | 13.500                        | 15,000                        | 15,500                        | 15,500                        | 15,500                        |
| . 2.2   | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc, expenditure on unspecified items)  |                               | 15,000                        | 15,500                        | 15,500                        | 15,500                        |
| 2.3     | Economically weaker section fund   | 6,000                         | 6,000                         | 7,000                         | 7,000 -                       | 7,000                         |
| 2.4     | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential positing etc.   | 5,000                         | 5,000                         | 6000                          | 6,000                         | 6.000                         |
| 2,5     | DTU Medical facilities and premium amount for medi-claim of student (per anoum)  | 700                           | 700                           | 700                           | 700                           | 700                           |
| 2.6     | Alumni Association life membership, registration fee (one time, non-refundable)  | 1000                          |                               |                               | -                             | - :                           |
|         | GRAND TOTAL  | 81,000                        | 86,000                        | 91,000                        | 94,000                        | 97,000                        |

Fige Structure for students seeking admissions in Academic Year 2025-26 Page 7 of 15

162

#### (L). M. Tech by Research

| S. No.    | Particulars   | Fee in<br>AY 2025-26<br>(Rs.) | Fee In<br>AY 2026-27<br>(Rs.) |
|-----------|---|-------------------------------|-------------------------------|
| ₹ 1.<br>: | Tuition Fee   | 55,300                        | 55,300                        |
| 2.        | Non Govt. Component   |                               | <del>1</del>                  |
| 2,1       | Student Welfare Fee (Co-curricular activities, Training & placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, outsourcing, conference, seminar, workshop, innovative projects, skill development activities and, Misc. Expenditure on Unspecified Items) | 13,000                        | 13,000                        |
| 2.2       | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified items)   | 16,000                        | 17,000                        |
| 2.3       | Economically weaker section fund  | 5,000                         | 5,000                         |
| 2.4       | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.  | 10,000                        | 10,000                        |
| 2.5       | DTU Medical facilities and premium amount for medi-claim of student (per annum)   | 700                           | 700                           |
| . 2.6     | Alumni Association life membership, registration fee (one time, non-refundable)   | 1000                          | · ··-                         |
|           | GRAND TOTAL   | 1,01,000                      | 1,01,000                      |

#### (M). Master of Design (M.Des)

| S.No. | Particulars   | Fee in<br>AY 2025-26<br>(Rs.) | Fee in<br>: AY 2026-27<br>: (Rs.) |
|-------|---|-------------------------------|-----------------------------------|
| 1.    | Tuition Fee   | 1,55,000                      | : 1,63,000                        |
| 2.    | Non Govt. Component   | l                             | ·                                 |
| 2.1   | Student Welfare Fee (Co-curricular activities, Training & placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, outsourcing, conference, seminar, workshop, innovative projects, skill development activities and, Misc. Expenditure on Unspecified items) | 20,000                        | 20,000                            |
| 2.2   | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc expenditure on unspecified items)  | 36,000                        | 36,000                            |
| 2.3   | Economically weaker section fund  | 10,000                        | 10,000                            |
| 2.4   | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.  | 15,000                        | 17,000                            |
| 2.5   | DTU Medical facilities and premium amount for medi-claim of student (per annum)   | 700                           | 700                               |
| 2.6   | Alumni Association life membership, registration fee (one time, non-refundable)   | 1000                          | -                                 |
|       | GRAND TOTAL   | 2,37,700                      | 2,46,700                          |

Fee Structure for students seeking admissions in Academic Year 2025-26

Page 8 of 15  $\,$ 

#### (N). Ph.D (Full Time / Part Time)

| S.No. | Particulars  | Fee in year of<br>admission<br>(Rs.) | Fee in subsequent academic years * (Rs.) |
|-------|--|--------------------------------------|--|
| 1.    | The academic stall of DTU DCE staff (R.19.1) and Project staff pursying Ph.D as in R.19.11 | 18,000                               | 8,000                                    |
| 2.    | Other Full Time / Part Time candidates   | 32,000                               | 15,000                                   |
| 3.    | DTU Medical facilities and premium amount for modi-claim of student (per annum)            | 700                                  | 700                                      |
| 4.    | Alumni Association life membership, registration fee (one time, non-<br>refundable)        | 1000                                 | -  |

<sup>\*</sup> Fees is to be paid till the academic year in which the thesis is submitted.

#### (O). DASA Students (UG) (Admission under Mode M1)

| S.No              | Particulars   | Fee In<br>AY2025-25 | Fee In<br>.AY2025-27 | Fee in<br>AY2027-28 | Fee in<br>AY2028-29 |
|-------------------|---|---------------------|----------------------|---------------------|---------------------|
| (i)               | Foreign Nationals except from SAARC and ASEAN countries   | i                   |                      |                     |                     |
| 1.0               | Tuition Fce   | \$8000              | \$8000               | \$8000              | \$8000              |
| 2.0               | Non Govt. Component of fee  |                     |                      |                     | 1                   |
| 2.1               | Student Welfare fee (Co-curricular Activities, Training & Placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on unspecified items)  |                     | \$1180               | \$1200              | \$1400              |
| 2.2               | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc, expenditure on unspecified items)   |                     |                      |                     | <br> <br>           |
| 2.3               | Economically weaker section fund  | 1                   |                      | }                   |                     |
| 2.4               | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.)   |                     | <br>                 |                     |                     |
| 2.5               | DTU Medical facilities and premium amount for medi-claim of student (per annum)   | <u> </u>            | :                    |                     | <u>L.</u> .         |
| 2.6               | Alumni Association life membership, registration fee (one time, non-refundable)   | \$12                | -                    | -                   | -                   |
|                   | Grand Total   | \$9112              | \$9180               | \$9200              | \$9400              |
| (ii)              | Foreign Nationals from SAARC and ASEAN Countries (The candidate submit their fees in equivalent Indian Rupees. However, they will Rate Certificate from the bankers and submit the same)  |                     |                      |                     |                     |
| 1.0               | Tuition Fee   | \$4000              | \$4000               | \$4000              | \$4000              |
| 2.0               | Non Govt. Component of fee  |                     |                      |                     |                     |
| 2.1               | Student Weifare fee   |                     | \$1180               | 4.000               | \$1400              |
|                   | (Co-curricular Activities, Training & Placement, Extra Curricular Activities, Annual Gathering, Students weifare, institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. (Expenditure on unspecified items)   |                     |                      | \$1200              | 1400                |
| 2.2               | Activities, Annual Gathering, Students weifare, institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on unspecified items)  Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified items)   |                     |                      | .\$1200             | 11400               |
| 2.3               | Activities, Annual Gathering, Students weifare, institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on unspecified items)  Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified items)  Economically weaker section fund   |                     |                      | .\$1200             | 1400                |
|                   | Activities, Annual Gathering, Students weifare, institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on unspecified items)  Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified items)  Economically weaker section fund  Examination fee (Examination infrastructure strengthening, expenditure on examination activities, confidential printing etc.)  |                     |                      | .\$1200             | 1400                |
| 2.3<br>2.4<br>2.5 | Activities, Annual Gathering, Students weifare, institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on unspecified items)  Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified items)  Economically weaker section fund  Examination fee (Examination infrastructure strengthening, expenditure on examination activities, confidential printing etc.)  DTU Medical facilities and premium amount for medicalaim of student (per annum) |                     |                      | .\$1200             | 1400                |
| 2.3<br>2.4        | Activities, Annual Gathering, Students weifare, institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on unspecified items)  Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified items)  Economically weaker section fund  Examination fee (Examination infrastructure strengthening, expenditure on examination activities, confidential printing etc.)  DTU Medical facilities and premium amount for medicalarm of                     |                     |                      | .\$1200             | -                   |

Fee Structure for students seeking admissions in Academic Year 2025-26

Page 9 of 15

e.in 164

|       | <u>:</u>   |                              |                              |                             |                                      |
|-------|--|------------------------------|------------------------------|-----------------------------|--------------------------------------|
| S.No. | Particulars  | Fee in<br>AY2025-26<br>(Rs.) | Fee in<br>AY2026-27<br>(Rs.) | Fee in<br>AY2027-28<br>(Rs) | Fee in<br>AY2028-29<br>(Rs           |
| 10    | Tultion Fee  | 'Rs.1,63,000                 | Rs.1.77,000                  | 1.92,000                    | 2,08,000                             |
| 2.0   | Non Govt Component of fee  | :                            |                              |                             | _J · · · · · · · · · · · · · · · · · |
| 2.1   | Student Welfare fee<br>(Co-curricular Activities, Training & Placement,<br>Extra Curricular Activities, Annual Gathering,<br>Students welfare, Institutional Development,<br>Outsourcing, conference, seminar, workshop,<br>innevative projects, skill development activities<br>and Misc. Expenditure on unspecified items) | Rs.22,000                    | Rs.25,500                    | Rs 27,000                   | Ra.28500 .                           |
| 2.2   | Facilities & Services Charges (Research initiatives, truining programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified tems)   | Rs.36,000                    | Rs.38,500                    | Rs 40,000                   | 42500                                |
| 2.3   | Economically weaker section fund   | Rs.10,000                    | Rs.10,000                    | Rs.10.000                   | 10000                                |
| 2.4   | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.)  | Rs.15,000                    | Rs.17,000                    | (Rs.17,000                  | 17000                                |
| ≥.5   | DTU Medical facilities and premium amount for medi-claim of student (per annum)  | Rs 700                       | Rs. 700                      | Rs. 700                     | 700                                  |
| 2.6   | : Alumni Association life membership, registration for (one time, non-refundable)  | Rs. 1000                     |                              | -                           | -                                    |
|       | Grand Total  | Rs.2,47,700                  | Rs.2,68,700                  | Rz.2,86,700                 | Rs.3,06,700                          |

Fee Structure for students seeking admissions in Adademic Year 2025-26

- Page 10 of **15** 

tu.ac.in 165

## (P). Admissions of International Students through ICCR (Admission under Mode M2)

#### J. Undergraduate (UG)

| S.No | Particulars  | Fee in<br>AY2025-2   | Fee In<br>6 AY2026-2 | Fee in<br>7 AY2027-2 | Fee in<br>AY2028-29 |
|------|--|----------------------|----------------------|----------------------|---------------------|
| (i)  | Foreign Nationals other than from SAARC and  | ASEAN C              | ountries             |                      | <u>-</u>            |
| 1.0  | Tuition Fee  | \$ 5000              | \$ 5000              | \$ 5000              | \$ 5000             |
| 2.0  | Non Govt, Component of fee   |                      | 1                    |                      |                     |
| 2.1  | Student Welfare fee  | \$1100               | \$1180               | \$1200               | \$1400              |
|      | (Co-curricular Activities, Training & Placement,<br>Extra Curricular Activities, Annual Gathering,<br>Students welfare, Institutional Development,<br>Outsourcing, conference, seminar, workshop,<br>innovative projects, skill development activities<br>and Misc. Expenditure on unspecified items)  |                      | <u> </u><br>         |                      |                     |
| 2,2  | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc, expenditure on unspecified items)  | ٠,                   |                      |                      |                     |
| 2.3  | Economically weaker section fund   |                      |                      | 1                    |                     |
| 2.4  | Examination fee (Examination Infrastructure<br>strengthening, expenditure on examination<br>activities, confidential printing etc.)  | ı <sup>:</sup><br>-I |                      |                      | <br>                |
| 2.5  | DTU Medical facilities and premium amount for medi-claim of student (per annum)  | .                    |                      | . İ                  | <u> </u>            |
| 2.6  | Alumni Association life membership, registration fee (one time, non-refundable)  | 1) \$12              | · · · · ·            | A 1.                 |                     |
|      | Grand Total  | \$6112               | \$6180               | \$6200               | \$6400              |
| (ii) | Foreign Nationals from SAARC and ASEAN Co  | untries              |                      |                      |                     |
|      | <u></u>  |                      | \$ 2500              | \$ 2500              | \$2500              |
| 1.0  | Tuition Fee  | \$ 2500              | [ <del>φ</del> 2360  | 3                    |                     |
| 2.0  | Non Govt, Component of fee   |                      |                      |                      |                     |
| 2.1  | Student Welfare fee (Co-curricular Activities, Training & Placement Extra Curricular Activities, Annual Gathering Students welfare, Institutional Development Cutsourcing, conference, seminar, workshop innovative projects, skill development activities and Misc. Expenditure on anspecified items) | ,!<br>;              | \$1180               | \$1200<br> <br>      | \$1400              |
| 2.2  | Facilities & Services Charges (Research initiatives, training programmes Awards, automation, facilities, entrepreneurshi   |                      |                      |                      |                     |
|      | activities and any misc. expenditure on unspecified items)   | d<br>                |                      | !<br>                |                     |
| 2.3  | jactivities and any misc, expenditure on unspecifie  | d<br>                |                      | !                    |                     |
| .2.3 | activities and any misc. expenditure on unspecified items)  Economically weaker section fund  Examination fee (Examination Infrastructure strengthening, expenditure on examination  | d<br>                |                      | :                    |                     |
|      | activities and any misc. expenditure on unspecified items)  Economically weaker section fund  Examination fee (Examination Infrastructure)   | d  <br>              |                      |                      |                     |
| 2.4  | activities and any misc. expenditure on unspecified items)  Economically weaker section fund  Examination fee (Examination Infrastructur strengthening, expenditure on examination activities, confidential printing etc.)  DTU Medical facilities and premium amount for                              | d<br>e<br>ก<br>      | <br>                 |                      | <br> <br> <br> <br> |

Fee Structure for Students seeking admissions in Academic Year 2025-26

Page 11 of 15

ac.in 166

#### II. Postgraduate (PG)

| S.No | Particulars  | Fee in<br>AY 2025-26 | Fee in<br>AY 2026-27 |
|------|--|----------------------|----------------------|
| (i)  | Direct Admission for Foreign Nationals other than from SAARC   | and ASEAN            | Countries            |
| 1.0  | Tuition Fee  | \$ 5000              | \$ 5000              |
| 2.0  | Non Govt. Component of fee   |                      |                      |
| 2.2  | Facilities & Services Charges<br>(Research initiatives, training programmes, Awards, automation,<br>facilities, entrepreneurship activities and any misc. expenditure on<br>unspecified items)   | S 1100               | \$ 1180              |
| 2.3  | Economically weaker section fund   | !<br>:               |                      |
| 2.4  | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.)  | :                    |                      |
| 2.5  | DTU Medical facilities and premium amount for medi-claim of student (per annum)  | :<br>                |                      |
| 2.6  | Alumni Association life membership, registration fee (one time, non-refundable)  | <b>\$</b> 12         | -                    |
|      | Grand Total  | \$-6112              | \$ 6180              |
| (ii) | Foreign Nationals from SAARC and ASEAN Countries   | ·L                   |                      |
| 1.0  | Tuițion Fee  | \$ 2500              | \$ 2500              |
| 2.0  | Non Govt: Component of fee   |                      | Same of the second   |
| 2.1  | Student Welfare fee (Co-curricular Activities, Training & Placement, Extra Curricular Activities, Annual Calhering, Students welfare, Institutional Development, Outsourcing, conference, seminar, workshop, Innovative projects, skill development activities and Misc. Expenditure on unspecified items) |                      | \$1180               |
| 2.2  | Facilities & Services Charges<br>(Research initiatives, training programmes, Awards, automation,<br>facilities, entrepreneurship activities and any misc. expenditure on<br>unspecified items)   |                      | :                    |
| 2.3  | Economically weaker section fund   | _                    |                      |
| 2.4  | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.)  | :                    |                      |
| 2.5  | DTU Medical facilities and premium amount for medi-claim of student (per annum)  | F                    |                      |
| 2.6  | Alumni Association life membership, registration (see (one time non-refundable)  | <br>  \$12<br>       |                      |
| :    | Grand Total  | \$ 3612              | \$ 3680              |

Fee Structure for students seeking admissions in Academic Year 2075-76

Page 12 of 1

v.dtu.ac.in 167

## (Q). International Students (Directly applied to DTU) (Admission under Mode3)

## (I) Direct Admission for Foreign Nationals : B. Tech., B. Des

| S.No | Particulars  | Fee in<br>AY<br>2025-26 | Fee in<br>AY<br>2026-27 | Fee in<br>AY<br>2027-28 | Fee in<br>AY<br>2028-29 |
|------|--|-------------------------|-------------------------|-------------------------|-------------------------|
| 1.0  | Tuition Fee  | \$ 8000                 | \$ 8000                 | \$ 8000                 | \$ 8000                 |
| 2.0  | Non Govt. Component of fee   |                         |                         | <u> </u>                | :                       |
| 2.1  | Student Welfare fee (Co-curricular Activities, Training & Placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skiil development activities and Misc. Expenditure on unspecified items) |                         | \$1180                  | \$1200                  | \$1460                  |
| 2.3  | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entropreneurship activities and any misc expenditure on unspecified items) Economically weaker section fund  |                         |                         |                         |                         |
| 2.4  | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.)  | <br>                    | :<br> <br> <br>         |                         |                         |
| 2.5  | DTU Medical facilities and premium amount for medi-claim of student (per annum)  | •                       |                         |                         |                         |
| 2.6  | Alumni Association life membership, registration fee (one time, non-refundable)  | \$12<br>i               | -                       | -                       | -                       |
|      | Grand Total  | \$9112                  | S9180                   | \$9200                  | \$9400                  |

#### (B) Direct Admission for Foreign National :- BBA, BA(H) Economics

|     | Particulars   | Fee in<br>AY<br>2025-26 | Fee in<br>AY<br>2026-27 | Fee in<br>AY<br>2027-28 | Fee in<br>AY<br>2028-29 *                       |
|-----|---|-------------------------|-------------------------|-------------------------|---|
| 1.0 | Tuition Fee   | \$6000                  | 6000                    | \$6000                  | \$6000  |
| 2.0 | Non Govt. Component of fee  |                         |                         | J                       |   |
|     | Student Welfare fee (Co-curricular Activities, Training & Placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, Outsourcing, conference, seminar, workshop, innovative projects, skill development activities and Misc. Expenditure on unspecified items) Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified items) Economically weaker section fund |                         | \$1380                  | \$1200                  | \$1400  |
| 2.4 | Examination fee (Examination Infrastructure strengthening expenditure on examination activities, confidential printing etc.)  DTU Medical facilities and premium amount for medi-claim of   |                         | <b>:</b><br>:           |                         |   |
| 2.6 | student (per annum) Alumni Association life membership, registration fee (one time, non-refundable)   |                         |                         | -                       | <u>. ·                                     </u> |
|     | Grand Total   | \$7112                  | \$7:80                  | 57200                   | \$7400  |

\*For the students opting for four year degree program.

fiee Structure for students seeking admissions in Adademic Year 2025-26

Page 13 of 15

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168

# (III) Direct Admission for Foreign Nationals (PG) :

| S.No | Particulars   | Fee in<br>AY 2025-26 | Fee in<br>AY 2026-27 |
|------|---|----------------------|----------------------|
| 1.0  | Tuition Fee   | \$ 5000              | \$ 5000              |
| 2.0  | Non Govt, Component of fee  |                      | · · · · · · · · ·    |
| 2.1  | Student Welfare fee (Co-curricular Activities, Training & Placement, Extra Curricular Activities, Annual Gathering, Students welfare, Institutional Development, Outsourcing, conference, seminar, workshop, innovative projects skill development activities and Misc. Expenditure on unspecified items) |                      | \$1180               |
| 2.2  | Facilities & Services Charges (Research initiatives, training programmes, Awards, automation, facilities, entrepreneurship activities and any misc. expenditure on unspecified items)   |                      | :                    |
| 2.3  | Economically weaker section fund  |                      | 1                    |
| 2.4  | Examination fee (Examination Infrastructure strengthening, expenditure on examination activities, confidential printing etc.)   |                      |                      |
| 2.5  | DTU Medical facilities and premium amount for medi-claim of student (per annum)   |                      | :                    |
| 2.6  | Alumni Association life membership, registration fee (one time, non-refundable)   | \$12                 | ·                    |
|      | Grand Total   | \$6112               | \$6180               |

#### (IV) Direct Admission for Foreign Students (Ph.D):

|   | Fee of Admission | Fee in subsequent academic year |
|---|------------------|---------------------------------|
| Ph.D fee  | \$ 5000          | \$ 5000                         |
| Nan Govl. Component of fce  | \$ 1100          | \$ 1180                         |
| Alumni Association life membership, registration fee (one time, non-refundable) | : \$12           |                                 |
| Total   | \$ 6112          | \$ 6180                         |

Fee Structure for students seeking admissions in Academic Year 2025-26

Page 14 of 15

vw.dtu.ac.in

#### (R). Withdrawal Policy #

| S.No.    | Percentage of Refund of aggregate fee * | Point of Time when Notice of withdrawal of admission is served to HEI                  |  |
|----------|---|--|--|
| 1.       | 100%                                    | 15 days or more before the formally notified last date of admission.                   |  |
| 2.       | 90%                                     | Less than 15 days before the formally notified last date of admission                  |  |
| 3.       | 80%                                     | 15 days or less after the formally notified last date of admission                     |  |
| ' 4.<br> | 50%                                     | 30 days or less, but more žhan 15 days latter formally notified last date of admission |  |
| 5.       | 00%                                     | - More than 30 days after formally notified last date of admission                     |  |

<sup>\*(</sup>Inclusive of Tuition fees and Non Govt. Component).

- # This policy shall not be applicable for B.Tech (Admissions through Joint Admission Counselling(JAC)); MBA,BBA (Admissions through Common Management Admission Committee(CMAC)) and for these programs, respective policies of JAC,2025 and CMAC,2025 shall be applicable.
- # Tuition fee and NGF Fee for all International students are non-refundable.

Student permitted for semester/year withdrawal as per ordinance has to pay the fees for the semester/year for which he/she has been granted withdrawal. However, he/she will not be charged the fees when he/she is completing his/her semester/year against withdrawal semester/ year.

Subject to the provisions of the Act, Statues and Ordinances, the issues not covered in the notice or in the event of differences of interpretation, the Vice Chancellor may take a decision. The decision of the Vice Chancellor shall be final.

In special circumstances, the Vice Chancellor may approve amendment, modification, insertion or deletion which in his opinion is necessary or expedient for the smooth running of a program.

This issues with the prior approval of the Competent Authority.

(Prof. Wadhusudan Singh) Registrar

Dated: 12.06.2025

F.No. DTU/Reg/Univ.Adm.Com./2023-24

Copy to :

- 1. PA to VC for kind information of the Hon'ble Vice Chancellor,
- 2. All the Deans & Heads of the Academic Department of DTU
- 3. Director (EDC)/HoD (USME)
- 4. Chairperson, B.Tech Admission Committee (2025)
- 5. Controller of Examination/ Controller of Finance/Chief Operating Officer
- 6. All Branch In-charges

Head (CC) with a request to upload the same on University website.

(Prof. Madinisudan Singh) Registrar

Fee Structure for students seeking admissions in Academic Year 2025-25

Page 15 of 15

#### **DELHI TECHNOLOGICAL UNIVERSITY**



(Estd. By Govt. of Delhi vide Act No. 6 of 2009) (Formerly Delhi College of Engineering)

Shahbad Daulatpur, Main Bawana Road, Delhi-110042 Tel: +91-11-27296337, Fax: +91-11-2787 1023

ACADEMIC (UG) SECTION

F. No. 105(641) DTU/Acad-UG/2018-19/19718-24

Dated 26 06 25

#### Notification

#### Subject: - Academic Calendar of all UG, PG & Ph.D Programs For Academic Year-2025-2026

Following is the Academic Calendar of all UG, PG & Ph.D Programs for Academic Year-2025-2026 duly approved by the Competent Authority: -

| AY 2025-26 Odd Semester   | 9 / 1                                       |
|---|---|
| Online Course Registration for all UG, PG, & Ph. D Programs (Notification to be issued by Examination Branch) | 07.07.2025 (Monday) onwards                 |
| Orientation cum Induction Program for First Year Students of all UG and Integrated BSc. MSc Programs          | 28.07.2025 - 01.08.2025 (Monday- Friday )   |
| Commencement of Teaching for 2 <sup>nd</sup> Year Onwards   | 29.07.2025 (Tuesday)                        |
| Commencement of Teaching for 1st Year Students  | 04.08.2025 (Monday)                         |
| Mid Semester Notification for Shortage of Attendance by<br>Respective Departments                             | 18.09.2025 (Thursday)                       |
| Mid Term Examination  | 22.09.2025 (Monday) onwards                 |
| Evaluated Answer Script Viewing By Students   | 03.10.2025 - 09.10.2025 (Friday-Thursday)   |
| Presentation to UGPEC/PGPEC*  | 13.10.2025 - 15.10.2025 (Monday-Wednesday   |
| Arena '25-26 / Yuvaan'25-26<br>(Sports/ Literary Festival)  | 17.10.2025 – 19.10.2025 (Friday-Sunday)     |
| Classes in Online Mode  | 20.10.2025 - 24.10.25 (Monday-Friday)       |
| Batch Photography   | 07.11.2025 (Friday)                         |
| Teaching Ends   | 13.11.2025 (Thursday)                       |
| Practical Examination for PRS and PRE Components  | 14.11.2025 - 19.11.2025 ( Friday- Wednesday |
| Display of Sessional Marks and Shortage of Attendance   | 18.11.2025 (Tuesday)                        |
| End Semester Theory & Project Examination   | 21.11.2025 (Friday)                         |
| Grade Moderation and Display of Grades  | 12.12.2025 (Friday)                         |
| Course Feedback   | 12.12.2025 - 17.12.2025 (Friday-Wednesday)  |
| Declaration of Result   | 22.12.2025 (Monday)                         |

v.dtu.ac.in 17

| Online Course Registration for all UG, PG, & Ph. D      | 15.12.2025(Monday) onwards                  |
|---|---|
| Programs  |   |
| Notification to be issued by Examination Branch)        |   |
| Commencement of Teaching                                | 01.01.2026 (Thursday)                       |
| Fechfest'26/ Engifest'26                                | 09.02.2026 to 15.02.2026 (Monday-Sunday)    |
| Feaching Suspended (for UG & PG Students only)          |   |
| Aahvan 25-26  | 19.02.2026 to 21.02.26 (Thursday- Saturday) |
| Mid Semester Notification For Shortage of Attendance by | 27.02.2026 (Friday)                         |
| Respective Departments                                  |   |
| Classes in Online Mode                                  | 02.03.2026 to 06.03.2026 (Monday-Friday)    |
| Mid Term Examination                                    | 09.03.2026 (Monday) onwards                 |
| Evaluated Answer Script Viewing By Students             | 23.03.2026 - 27.03.2026 (Monday-Friday)     |
| Presentation to UGPEC/PGPEC*                            | 30.03.2026 - 03.04.2026 (Monday-Friday)     |
| Teaching Ends   | 22.04.2026 (Wednesday)                      |
| Practical Examination for PRS and PRE Components        | 23.04.2026 - 28.04.2026 (Thursday-Tuesday)  |
| Display of Sessional Marks and Shortage of Attendance   | 29.04.2026 (Wednesday)                      |
| End Semester Theory & Project Examination               | 01.05.2026 (Friday) onwards                 |
| Grade Moderation and Display of Grades                  | 22.05.2026(Friday)                          |
| Course Feedback   | 22.05.2026 - 26.05.2026 (Friday- Tuesday)   |
| Declaration of Result                                   | 29.05.2026(Friday)                          |
| Summer Vacation   | 01.06.2026 - 31.07.2026                     |
| Industrial Training/Internship                          | After End Term Examination/Summer           |

<sup>\*</sup> UGPEC/PGPEC: Under-Graduate & Post-Graduate Program Executive Committee.

(Prof. Rajeshwari Pandey) Dean Academic (UG)

Rlandry

105(641) DTU/Acad-UG/2018-19 19718-24

Dated 26 06 25

- Copy to 1) PA to the VC for kind information to the Hon'ble Vice Chancellor, DTU.
- 2) Registrar.
- 3) All Deans
- 4) All HoDs
- 5) Controller of Examination
- 6) Head (CC), with a request to upload notice on DTU website and intimate the students through ERP portal.

7) Guard File.

(Prof. Rishu Chaujar) Associate Dean Academic (UG)

# FEE CONCESSION FOR STUDENTS BELONGING TO ECONOMICALLY WEAKER SECTIONS

DTU has well established guidelines for extending fee concession to the needy students with lean economical background. Applications are invited from all the desirous students; a designated Fee Concession Screening Committee interacts with those students and their parents and accordingly recommends the full or half fee concession on tuition fee to them.

All the desirous and eligible students of DTU who belongs to lower income group and wish to seek financial assistance for fee concession may submit the application online on www.btechstudentportal.dtu.ac.in (portal will be active in the month of August/September). The criteria and guidelines for the fee concession and concession in hostel fee are as under:-

- 1. The students whose family income from all sources is less than Rs. 4,50, 000/- per annum will only be eligible for fee concession. Income Certificate should be valid at the time of online application issued by SDM/1st Class Magistrate in case of others, ITR for previous financial year in case of Govt. Employee.
- 2. The students of 1st year and 3rd year shall deposit the University annual fee at the start of the academic session and fee concession amount will be reimbursed if he/she fulfills the criteria of fee concession. In 2nd and 4th year the student will deposit the fee as per the applicable fee concession received in 1st and 3rd year respectively.
- 3. First year student has to submit the copies of the all mark sheets starting from 12th class and JEE Rank Card.
- 4. Any student who availed fee concession in 1st year will continue to be eligible for Fee Concession in 2nd year also, similarly student availing fee concession in 3rd year will continue to be eligible for the same in 4th year also provided he/she has acquired minimum required credits for promotion from 1st year to 2nd year / 3rd year to 4th year respectively.
- 5. The student has to submit an undertaking duly counter signed by his/her parents on stamp paper of Rs. 10/- duly attested by public Notary that "he/she has not obtained or applied for any grant/ financial help for the same purpose from any other Ministry/ Govt. Department of India/ State, any Public/ Private Organization." The application of the candidate concealing the facts will automatically stand cancelled.
- 6. The student should not be involved in any act of indiscipline and misconduct in the University.
- 7. Copy(ies) of Death Certificate of earning parent(s).
- 8. Copy of award letter of Scholarship/fellowship if any, being awarded any Govt. or non-govt. organization.
- 9. Copy of student Bank Passbook mentioning IFSC and Bank A/C No.
- 10. The full fee concession may be given to the student's maximum upto five (05) % of the sanctioned intake for the particular year in the respective program or equivalent to the number of double, the half fee concession may be granted to the deserving students.
- 11. The full fee concession will be granted to the wards (up to two children only) of all the Group C' employees and half fee concession may be granted to the wards (up to two children only) of all the "Group B' employees of the DTU/DCE over and above the student's maximum upto five (05) % of the sanctioned intake for the particular year. All shortlisted students will be required to appear for personal interview by a designated Committee for which dates will be announced later. Applications will be accepted only through online portal, hand written applications will not be accepted.

#### FINANCIAL SUPPORT TO STUDENTS

Merit scholarship to the toppers of each branch of Bachelor of Technology.

The merit Scholarship is awarded strictly on principle of academic merit of the candidates who satisfy the following conditions:

- 1. Merit scholarship shall be given only to the toppers of all branches of B Tech program (F/T) annually with the condition that the student concerned has secured 75% or above as aggregate marks or CGPA =7.5 in an academic year.
- 2. The student who has passed all the subject of the semester in one attempt.
- 3. The student should have a sound moral character and should not have indulged into any act of misconduct during his/her studies at the University.
- 4. In case of tie, all awardees will be given Rs 5000/- each.

Approval accorded during 11th meeting of Academic Council held on 24.06.2015 and confirmed by BOM vide minutes of 17th BOM, DTU held on 17.07.2015.

# Financial Assistance to students for presenting Research Paper/Poster in National/ International Conference /Events

This scheme is aimed at promoting research and development activities in various areas of professional education in an academic department by providing opportunity to students to interact at national and international level to update with the global changes in the concerned fields / area of specialization.

#### Financial Assistance for Students' Innovative Projects

To strengthen the student innovative projects and to facilitate student teams venturing for innovative projects, there is a provision for financial support for which approval is accorded during 19th meeting of Academic Council held on 16.11.2018 and confirmed by BOM vide minutes of 29th BOM, DTU held on 30.11.2018.

#### Financial assistance for students for attending internship overseas

The scheme for financial assistance to students for attending internship overseas has been instituted keeping in view the importance of state of the art research and international exposure to students for which approval is accorded during 19th meeting of Academic Council held on 16.11.2018 and confirmed by BOM vide minutes of 29th BOM, DTU held on 30.11.2018.

#### PM-Vidyalaxmi Scheme

The Government of India has approved PM-Vidyalaxmi scheme to provide financial support to meritorious students so that financial constraints do not prevent any youth of India from pursuing quality higher education. A special loan product has been introduced to enable for collateral free, guarantor free education loans to meritorious students who get admission in the top 860 quality higher educational institutions of the nation; made accessible through a simple, transparent, student-friendly and entirely digital application process. Furthermore, for students with up to Rs. 8 lakhs annual family income, the scheme will also provide for 3% interest subvention on loans up to Rs 10 lakh.

#### **Application Process**

Step 1: To apply for education loan and avail the interest subvention benefits, eligible students to visit the official unified portal of DoHE https://pmvidyalaxmi.co.in

Step 2: Student to register through AADHAAR for availing interest subsidy under the schemes.

#### **Disbursement Process**

The subsidy amount will be credited to PM VIDYALAXMI DIGITAL RUPEE APP (CBDC WALLET) of the beneficiary and on redemption on the app by the beneficiary, the amount will be transferred to the beneficiary loan account.

# SCHOLARSHIP SCHEMES



| S.<br>No. | NAME OF THE SCHEME  | CRITERIA  | AMOUNT   |  |
|-----------|---|---|--|--|
|           | FEE CONCESSION DTU SCHEME (THROUGH DTU PORTAL)  |   |  |  |
| 1         | Fee Concession  | Income up to Rs.4.5 Lac   | 100% full fee waiver, 100 & 50% tuition fee waiver   |  |
| C         | <b>ENTRAL GOVT SCHE</b>   | MES AT NSP PORTAL   | Link: https://scholarships.gov.in/   |  |
| 1         | Post Matric Scholarships Scheme<br>for Minorities   | 50% marks or equivalent grade in the previous final examination and the annual income Rs.2.00 lac   | Tuition fee Rs. 10,000/- per annum   |  |
| 2         | PM Yasasvi Central Sector<br>Scheme of Top Class Education<br>in College for OBC, EBC and DNT<br>Students   | Income up to 2.5 Lac.   | (i) Full tution fee and non-refundable charges (ii) Academic allowance of Rs. 86,000 in the first year of study and Rs. 41,000 in every subsequent year, to take care of living expenses, books and stationery,  |  |
| 3         | Post-matric Scholarship for<br>Students with Disabilities   | Income up to Rs.2.5 Iac. and 40% disability   | (i) Reimbursement of compulsory Non-<br>refundable Rs.1.50 lac per annum,<br>(ii) Maintenance allowance: for hosteller<br>Rs. 1600/- per month and Rs. 750/- for day<br>scholar<br>(iii) Book Allowance: Rs.1500/- per annum<br>(iv) Disability allowance (a) Visually Impaired<br>Rs. 4000/-<br>(b) Hearing Impaired Rs. 2000/-, (c) Physically<br>Disabled (OH) Rs. 2000/-, (d) Intellectual<br>Disabilities Rs. 4000/-(e) All other types of<br>disability not covered under above Rs. 2000/- |  |
| 4         | Scholarships for Top Class<br>Education for Students with<br>Disabilities.  | Income up to Rs.8 Lac and 40% disability  | (i) Tuition fees and non-refundable Up to Rs. 2. lac (ii) Maintenance Allowance Rs.3,000/- per month for hostellers, Rs. 1,500/- per month for day scholars (iii) Special reader allowance, escort allowance, helper allowance etc.) Rs. 2,000/- per month (iv) Books & Stationery Rs. 5,000/- per annum. (v) computer/ laptop Rs. 45,000/- as a one time (vi) aids and Assistive devices Rs. 30,000/-   |  |
| 5         | Top Class Education Scheme for<br>SC Students   | Income up to Rs. 8 lac, selection only 10 students as per JEE rank and 30% slots for girls students   | (i) full tuition fee and non-refundable charges (ii) Academic allowance of Rs. 86,000 in the first year of study and Rs. 41,000 in every subsequent year, to take care of living expenses, books and stationery, computer/laptop   |  |
| 6         | National Fellowship and<br>Scholarship for Higher Education<br>of ST Students - Scholarship<br>(Formally Top Class Education for<br>Schedule Tribe Students) - only<br>for Scholarships | Income up to Rs.6 Lac   | (i) full tuition fee and non-refundable charges (ii) Academic allowance of Rs. 86,000 in the first year of study and Rs. 41,000 in every subsequent year, to take care of living expenses, books and stationery, computer/laptop   |  |
| 7         | Central Sector Scheme of<br>Scholarships for College and<br>University Students   | Students who are above 80th percentile of successful candidates in the relevant stream from the respective Board of Examination in Class XII of 10+2 pattern or equivalent, Income Rs. 4.5 lacs per annum | The rate of scholarship is Rs.12,000/-per<br>annum at graduation level for first three<br>years of College and University courses  |  |

| 8  | Prime Minister's Scholarship<br>Scheme for Central Armed Police<br>Forces and Assam Rifles                                 | I) Wards/widows of deceased II) CAPFs & AR personnel died in harness/election duty, wards of personnel disabled due to causes attributable to Government service and Wards of ExCAPFs & AR personnel in receipt of Gallantry Awards. III) Wards/widows of retired and serving CAPFs & AR Personnel. (Personnel below Officer Rank)   | Rs. 36,000/- per annum to each girl & Rs 30,000/- per annum to each boy                                  |
|----|--|--|--|
| 9  | Prime Minister's Scholarship<br>Scheme for Wards of States/UTs<br>Police Personnel Martyred during<br>Terror/Naxal Attacks | I) Wards/widows of deceased C II) CAPFs & AR personnel died in harness/election duty, wards of personnel disabled due to causes attributable to Government service and Wards of ExCAPFs & AR personnel in receipt of Gallantry Awards. III) Wards/widows of retired and serving CAPFs & AR Personnel. (Personnel below Officer Rank) | Rs. 36,000/-to each girl & Rs 30,000/- to each boy   |
| 10 | Prime Minister's Scholarship<br>Scheme for RPF/RPSF  | Students should have secured 60% and above in 12th Std., The scholarship is admissible for only two wards per family   | Rs. 2500/- per month for male students and<br>Rs. 3000/- per month for female students                   |
| 11 | Financial Support to the Students<br>of NER for Higher Professional<br>Courses (NEC Merit Scholarship)                     | Income up to Rs.8 Lac only, resident of any of the North Eastern States.   | Rs. 22,000/- per annum   |
| A  | ICTE SCHEMES AT N  | ISP PORTAL   | Link: https://scholarships.gov.in/   |
| 1  | Pragati Scholarship<br>Scheme for Girl Students<br>(Technical Degree)  | The girl candidate should be admitted to First year of Degree level course OR Second year of Degree level course through lateral entry, income up to Rs. 8 lac per annum   | Rs. 50,000/- per annum   |
| 2  | Saksham Scholarship Scheme for<br>Specially Abled Student (Technical<br>Degree)  | The candidate should be admitted to First year of Degree level course OR Second year of Degree level course through lateral entry, disability of not less than 40%. income up to Rs. 8 lakh per annum  | Rs. 50,000/- per annum   |
| 3  | AICTE – Swanath Scholarship<br>Scheme (Technical Degree)   | (i) Orphan OR (ii) Either or both<br>parents died due to Covid 19 OR<br>(iii) Wards of Armed Forces and Central<br>Paramilitary Forces martyred in action<br>(Shaheed) AND 2)income up to Rs. 8 lakh per<br>annum  | Rs. 50,000/- per annum   |
| S  | TATE SCHEMES DEL   | HI (EDISTRICT PORTAL)  | Link: https://edistrict.delhi.gov.in/  |
| 1  | Post Matric Scholarship Schemes for SC   | Income Limit Rs. 2.5 Lac, Resident of Delhi  | Full fee + maintenance allowance Rs. 7000/- per annum  |
| 2  | Merit Scholarship to SC/ST/OBC<br>Students of College/Professional<br>Institutions   | No income limit for SC/ST , for OBC Rs. 2.5<br>Lac, Resident of Delhi  | Rs. 12,000/- per annum   |
| 3  | Post Matric Scholarship Schemes for OBC  | Income limit Rs. 2.5 Lac, Resident of Delhi  | Rs. 20,000/- for day scholar and Rs. 25,000/- for hosteller  |
| 4  | Delhi Higher & Technical<br>Education Support Scheme   | Income up to 3 Lac. only for Delhi Residents   | 100% Tution Fee  |
| S  | TATE SCHEME MADE   | IYA PRADESH Link: http://  | www.scholarshipportal.mp.nic.in/   |
| 1  | Mukhyamantri Medhavi Vidyarthi<br>Yojna (MMVY)   | Resident of Madhya Pradesh, Income up to<br>Rs. 6 lac, Applicants must have scored 75%<br>of marks from the Madhya Pradesh board or<br>85% marks from the CBSE board Students<br>who have scored rank within 1,50,000 in JEE<br>Mains are eligible to apply for the scholarship  | Rs. 1.5 Lac per annum  |
| S  | TATE SCHEME RAJA   | STHAN  | Link: https://sso.rajasthan.gov.in/  |
| 1  | Post Matric Scholarship for SBC<br>Students  | Resident of Rajasthan, income up to Rs. 1 lac  | Maintenance allowance, study tour cost, mandatory non-refundable fee reimbursement, book allowance, etc. |
|    |  |  |  |

# RULES FOR CHANGE OF NAME OF STUDENT IN ACADEMIC RECORDS

The Board of Management, Delhi Technological University in its 43rd meeting held on 21.05.2021 vide agenda number 43.11 approved revisions of existing rules for correction/change of name of student in academic record. Revised rules notified vide letter No. F.DTU/Order/BOM/25/2014/Vol-III/150 are as under:

There quest pertaining to change of name are divided into two categories:

- a) Category `A'- related to Correction
  - Correction in name to the extent of correction in spelling errors, factual typographical errors in the candidate's name/surname, name of father/mother/guardian/date of birth etc. may be considered within 05 years of the declaration of results. If the request comes after 05 years the case may be considered by the Vice Chancellor on its merit.
- b) Category 'B' related to Change
  - The change in the name/ surname of candidate, date of birth, and name of father/ mother/ guardian name may be considered within 05 years of declaration of results provided the changes have been admitted by CBSE/ State Boards/Other related Boards/ Universities wherein from the qualifying examination was passed.
  - All such requests covered in category A and Category B may be considered within 05 years of declaration of final result of the programme to which the student was admitted to the University. If the request comes after 05 years the case may be considered by the Vice Chancellor on its merit.

#### Following documents need to be submitted by the students while applying:

- a) For category A
  - I. An application in prescribed format duly forwarded by the Head of the concerned Department.
  - ii. An affidavit as per prescribed format on a non-judicial stamp paper worth Rs. 20/- (in original) executed in the court and sworn before First Class Magistrate, First Class Metropolitan Magistrate/Executive Magistrate/Sub Divisional Magistrate regarding change in name. (Original)
  - iii. Self-attested copy of Roll Number issued by the University.
  - iv. Fee receipt of payment of prescribed fee by the University for correction/change of name.
  - v. A copy of revised certificates issued by CBSE or any other Board/ University from wherein the qualifying examination was passed bearing the corrected name/surname, name of father/mother, Date of Birth.
  - vi. In case mistake is found from the University side, no fee will be charged for any correction.

**For category B:** In addition to the documents mentioned for Category `A', the student is also required to submit following document:

- i. Original copy of the Government of India Gazette, notifying the change in name.
- ii. Original copy of two newspapers (daily English/ Hindi newspaper at the national level and daily newspaper in a vernacular language circulated in the locality city), in which the desired change has been published.
- iii. Original undertaking, in prescribed format duly sworn before the Judicial Magistrate, first class Metropolitan Magistrate/ Executive Magistrate/ Sub Divisional Magistrate.

Once approved by the Competent Authority, the name of student/ father/ mother/guardian, date of birth as applicable shall be read as:-

The name after change will be read as changed name alias/nee earlier name in DTU record. Further, the revised mark-sheet/degree/certificate shall bear the following details:

| "This mark-sheet/degree is issued subsequent to the name change of |       |                            |
|--|-------|----------------------------|
| (old name) to  |       | (new name)as notified vide |
|  | dated |                            |

#### **ORDINANCE-6**

#### (Maintenance of Discipline)

No. F.DTU/ORG/Notification/04(1)/2009.....n exercise of the powers conferred by sub-section (2) of Section 32 of the Delhi Technological University Act, 2009 (Delhi Act 6 of 2009), the Board of Management, Delhi Technological University, hereby makes Ordinanace-6 Maintenance of Discipline among students.

#### 1. Short title and Commencement:

- (a) These Ordinance may be called the Delhi Technological University (Sixth) Ordinance, 2012.
- (b) They shall come into force with effect from the date of meeting of the Board of Management i.e. 28.12.2010

#### 2. Definitions:

- (i). In these ordinances, unless the context otherwise requires:-
  - (a). "Act", "statutes", "ordinance" and "regulations" mean respectively the Delhi Technological University Act, 2009 (6 of 2009), the statues, the ordinance and the regulations of the Delhi Technological University.
  - (b). "Department", and "School" means the academic departments and schools of Delhi Technological University.
- (ii). Words and expression used, but not defined, in these ordinances shall have the meanings assigned to them in the Act and the statues.

#### 3. Power to vest in the Vice Chancellor

- (i). All powers relating to maintenance and enforcement of discipline among and disciplinary action against the students of the University shall vest in the Vice Chancellor.
- (ii). The Vice Chancellor may delegate all or any such of his powers, as he deems proper, to such other officers and authorities of the university as he may specify in this behalf.

#### 4. Acts of indiscipline and misconduct

- 1. Without prejudice to the generality of the power to maintain and enforce discipline under this ordinance, the following shall amount to acts of indiscipline or misconduct on the part of a student of the University:-
- (a) Physical assault, or threat to use physical force, against any member of the teaching or non-teaching staff of any Department or school of the University or against any student or the University.
- (b) Remaining of co-curricular activity which he/ she is expected to participate in;
- (c) Carrying of, use of or threat to use, any weapon:
- (d) Mis behavior, using abusive language or cruelty towards any other student, teacher or any other employee of the University.
- (e) Use of drugs or other intoxicants except those prescribed by a qualified doctor;
- (f) Any violation of the provisions of the Civil Rights Protection Act, 1976;
- (g) Indulging in or encouraging violence or any conduct which involves moral turpitude;
- (h) Any form of gambling;
- (i) Violation of the status, dignity and honour of a student belonging to a scheduled caste or a schedule tribe.
- (j) Discrimination against any student or a member of staff on grounds of caste, creed, language, place of origin, social and cultural background or any of them.
- (k) Practicing casteism and untouchability in any form or inciting any other person to do so;
- (l) Any act or gesture, whether verbal physical or otherwise verbal physical or otherwise, derogatory to women;
- (m) Consuming tobacco, liquor or smoking;
- (n) Any attempt at bribing or corruption of any manner or description;
- (o) Wilful destruction of the property of the University.

- (p) Behaving in a rowdy, intemperate or discovery manner in the premises of the University or encouraging or inciting any other person to do so;
- (q) Causing disruption of any manner or description of the academic functioning of the University system;
- (r) Indulging in or encouraging any form of disruptive activity connected with tests, examinations or any other activity of the University.
- (s) Indulging in or encouraging any form of disruptive activity connected with tests, examinations or any other activity of the University;
- (t) (Truancy and unpunctuality;
- 2. The Vice Chancellor may amend or add to the list of malpractices under clauses (1)

#### 5. Penalties for breach of discipline

Without prejudice to the generality of his powers relating to the maintenance of discipline and taking such action in the interest of maintaining discipline as deemed appropriate by him.

- (1) The Vice Chancellor may in exercise of his powers aforesaid, order or direct that any student or students-
  - (a) Be expelled from the University in which case he/she shall not be re-admitted to the University, from where his expelled; or
  - (b) Be, for a stated period, rusticated in which case he/ she not be admitted to the University till the expiry of the period of rustication; or
  - © Be, for a stated period expelled from the University Hostel/hall of residence or;
  - (d) Be not, for a stated period, admitted to a course or courses of study of the University; or
  - (e) Be imposed with the fine of a specified amount of money;
  - (f) Be debarred from taking a University examination or examinations for one or more years.
- (2) The Vice Chancellor, in exercise of his powers aforesaid or on the recommendations of Board of Discipline, may also order or direct that the result of the student concerned of the examination or examinations at which he/ she has appeared, be canceller.
- (3) The Chairman, Board of Discipline, Head of Teaching Departments and schools, Wardens of different hostels, Librarian and In-charge of any centralized facilities in the university shall have the authority to exercise disciplinary powers over students in their respective domain, in the university as may be necessary for the proper functioning of the department, hostel, library, central facility, which may include issuing warning, suspension from the classes/ hostels and/ or debarring from using the central facilities for a maximum period of one month. However, in all such cases, the final decision shall be taken by the Board of Discipline.

#### 6. Ragging

Ragging for the purpose of this ordinance, shall ordinarily mean any act, conduct or practice by which the dominant power or status of senior students if brought to bear upon the students who are in any way considered junior or inferior by the former and includes individual or collective acts or practices which:

- (a) Involve physical assault or threat to use physical force;
- (b) Violate the status, dignity and honour of students, in particular woman/ girl students and those belonging to a schedules caste or a schedules tribe;
- (c) Expose students to ridicule or contempt or commit an act which may lower their self-esteem; and
- (d) Entail verbal abuse, mental or physical torture, aggression, corporal punishment, harassment, trauma, indecent gesture and obscene behaviour.

#### A. What constitutes Ragging?

Ragging constitutes one or more of the following acts:

(a) Any conduct by any students whether by words spoken or written or by an act which has the effect of teasing, treating or handling with rugnesses a fresher or any other students;

- (b) Indulging in rowdy or indisciplined activities by any student or students which causes or is likely to cause annoyance, hardship, physical or psychological harm or to raise fear or apprehension thereof in any fresher or any other student;
- © Asking any student to do any act which such student will it in the ordinary course do and which has the effect of causing or generating a sense of shame, or torment or embarrassment so as to adversely affect the physique or psyche of such fresher or any other student;
- (d) Any act by a senior student that prevents, disrupts or disturbs the regular academic activity of any other student or a fresher;
- (e) Exploiting the services of a fresher or nay other student for completing he academic tasks assigned to an individual or a group of students;
- (f) Any act of financial extortion or forceful expenditure burden put on a fresher of any other student by students;
- (g) Any act of physical abuse including all variants of it: sexual abuse, homosexual assaults, stripping, forcing obscene and lewd acts, gestures causing bodily harm or any other danger to health or person;
- (h) Any act or abuse by spoken words, emails, post, public insults which would also include deriving perverted pleasure, vicarious or sadistic thrill from actively or passively participating in the discomfiture to fresher or any other student;
- (i) Any act that affects the mental health or self-confidential of a fresher or any other student with or without an intent to derive a sadistic pleasure or showing off power, authority or superiority by a student over any fresher or any other student.

#### B. Prohibition of Ragging

- (a) Ragging in any form is strictly prohibited in University campus and any part of University system, as well as on public transport or at any place, public or private.
- (b) Any individual or collective act or practices of ragging constitutes gross indiscipline and shall be dealt with relevant provisions.
- (c) The Head of the Department/ school, Proctor, wardens of Hostels, Librarian, In-charge of any central facility, security officer or any faculty member of the university shall take immediate action on receipt of any information of the occurrence of ragging.
- (d) Notwithstanding anything in clause (iii) above, the Chairman, Board of Discipline may also suo-moto enquire into, any incident of ragging and make a report to the Vice Chancellor of the identity of those who have engaged in ragging and the nature of the incident.
- (e) The Chairman, Board of Discipline may also submit an initial report to VC establishing the identity of the perpetrators, of ragging and the nature of the ragging incident.
- (f) If the Head of the Department/ Schools, Proctor, Chief Warden, Librarian, In-charge-Central Facility and Chairman, Board of Discipline is satisfied that for some reason, to be recorded in writing, it is not feasible to hold such an enquiry, he/ she may so advice the Vice Chancellor accordingly.
- (g) When the Vice Chancellor is satisfied that it is not expedient to hold such an enquiry into an incident of ragging, his/her decision shall be final.
- (h) One the receipt of a report under clause (iv) of (v) or determination by the relevant authority under clause (vi) disclosing the occurrence of ragging incidents described in clause 5 (A), the Vice Chancellor shall take appropriate penal action which may include rustication of a student or student for a specific number of year from University, debarring from appearing in University examination and/or take any other measure as prescribed by Hon'ble Supreme Court or any Court of Law.
- (i) The Vice Chancellor may in other cases of ragging order or direct that nay student or students be expelled or be not for a stated period admitted to a course of study or in a University Examination, for one or more years or that the result of student/ students concerned in the examination in which they appeared be cancelled.

- (j) In case any students who have obtained degrees of Delhi Technological University are found guilty under this Ordinance, appropriate action for withdrawal of degrees conferred by the University shall be initiated.
- (k) For the purpose of this Ordinance, abetment to ragging whether by way of any act, practice or incitement of ragging will also amount to ragging.
- (1) All students shall be required to submit written undertaking(s) to the University in the beginning of academic session that they shall indulge into any act of ragging.

#### 5. Declaration to be signed by a student

At the time of admission, every student shall be required to sign a declaration

On oath that he/ she shall submit himself/ herself to the disciplinary jurisdiction of the Vice Chancellor and other authorities of the University.

#### 6. Constitution of the Board of Discipline

- (1) The Boards of Discipline at the level of the University shall be constituted by the Vice Chancellor as follows:-
- (a) A Professor of the University to be nominated by the Vice Chancellor Chairman
- (b) Chief Warden of the University Hostels
- (c) Two senior teachers of the University to be nominated by the Vice Chancellor, members.
- (d) One senior lady teacher of the University to be nominated by the Vice-Chancellor, member.
- (e) Head of the concerned department/school and hostel warden to which the act of indiscipline of misconduct by a student or students pertains to the Chairman in case feels that input from the student(s) are required for better examination of a case may do so by calling the student(s).
- (f) Assistant Registrar (Academic) shall be the Member Secretary of the Board of Discipline.
- (2) The members of the board including Chairman shall hold office for a period of two years and a vacancy occurring in the Board of Discipline shall be filled for the remaining period of the term of the member whose department has caused the vacancy.
- (3) Three members of the Board of discipline including the Chairman, shall form the quorum.
- (4) In the absence of the Chairman, the senior most member of the Board of Discipline shall act as the Chairman.

#### 7. Functions of the Board of Discipline

- (1) The Board of Discipline shall perform the following functions;-
- (a) To consider matters concerning maintenance of discipline among the students in the University.
- (b) To enquiry into the acts of indiscipline or misconduct committed by a student or students whenever such cases are referred to the Board of Discipline and to submit their findings conclusions and recommendations for the quantum of punishment under the provision of this ordinance to the Vice Chancellor or the person authorized by the Vice Chancellor in this behalf.
- (c) To supervise and monitor the disciplinary climate prevailing in the University.
- (d) To take preventative and precautionary steps such as issue of notices, warning, instructions etc. as the case may be, for the purpose of forestalling acts of individual or collective indiscipline, misconduct and ragging etc.
- (e) To maintain liaison with the police authorities and the concerned departments of the Government, neighbouring institutions and the concerned authorities of the University regarding maintenance of law Chancellor from time to time.
- (2) The decision in each case shall be conveyed by the Chairman communicating the penalty or penalties, if any, imposed on a student or students.
- (3) A student or students, who are aggrieved with the penalty imposed upon them, may appeal to the vice chancellor whose decision in this regard shall be final and binding upon the parties.

# FORMS AND FORMATS MINI PROJECT PROPOSAL FORMAT

| Nam  | e                             |   |
|------|-------------------------------|---|
| Roll | Number                        |   |
| Depa | artment                       |   |
| Prop | osed Project Title            |   |
| Nam  | e of proposed faculty advisor |   |
| Aims | s of the Project              |   |
| i    | Abstract and specific aims    | A one paragraph summary of the project proposal and summary of the project goals.   |
| ii   | Introduction                  | Justification for the need of the proposed project, expected outcomes and its applications. (Approx. 01 page)                                 |
| Iii  | Project Design                | Detailed description of the project design plan, methods and procedures to be used and description of final form of the product.(1 - 2 pages) |
| iv   | Project budget                | Details of budgetary requirement and justification. (1-2 pages)   |
| v    | Project Timeline              | Outline the anticipated dates of completion of various stages of the project  |
| V    | References                    | List of references  |

# ENTREPRENEURSHIP AND VENTURE DEVELOPMENT PROPOSAL FORMAT

| Nam   | e                          |  |
|-------|----------------------------|--|
| Roll  | Number                     |  |
| Depa  | artment                    |  |
| Title | of proposal                |  |
| Aim   | s of the Proposal          |  |
| i     | Abstract and specific aims | A one paragraph summary of the idea and summary of the proposal goals.   |
| ii    | Introduction               | Justification for the need of the proposed idea, expected outcomes and its uses. (Approx. 01 page)                                     |
| Iii   | Project Design             | Detailed description of the innovative idea generation, proposal planning, organizing finances and marketing strategies.  (1 -2 pages) |
| iv    | Proposal budget            | Details of budgetary requirement and justification. (1-2 pages)  |
| V     | Proposal Timeline          | Outline the anticipated dates of completion of various stages of the proposal  |

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# FORM FOR REPORTING CASES OF USE OF OR ATTEMPT TO USE UNFAIR MEANS AT THE UNIVERSITY EXAMIANTION

Note: One sheet should be used for one candidate only, if printed forms run short, the form should be photocopied and used.

#### PART - I

| Name   | of examination   |
|--------|--|
|        | of Student   |
|        | lete Postal Address (Including Phone/Mobile No.)   |
| Subjec | et in which the candidate is reported to have used or intended to use unfair means   |
|        | Date   |
| 1.     | Particular of book, papers, electronic gadgets etc. found in possession of the student and submitted along with the answer sheet (all these materials should be signed by the Invigilator of examination and the student). Name of book (if any) |
|        | (a)  |
|        | (b)  |
|        | ©  |
| Numbe  | er of leaves of books  |
| Numb   | er of (a) Manuscript slips:  |
| Any of | ther articles such as electronic gadget etc.   |
|        | (a)  |
|        | (b)  |
|        |  |

# FORM FOR REPORTING CASES OF USE OF OR ATTEMPT TO USE UNFAIR MEANS AT THE UNIVERSITY EXAMIANTION

#### PART -I I

| Statement of the student to be obtained                | at once in his/her own handwriting         |                                |
|--|--|--------------------------------|
| Were the above articles recovered from                 | your possession?                           |                                |
| Why did you keep them with you inspi                   | te of clear instructions?                  |                                |
| Did you make any use of them?                          |  |                                |
|  |  |                                |
| Have you anything else to state?                       |  |                                |
|  |  |                                |
| DateTime.  | (Signature of Student).                    |                                |
| Certified that this statement was made                 | in my presence.                            |                                |
| Certified that the candidate declined to invigilator)] | give any statement. (Certificate not appli | cable should be crossed by the |
| Date   | Time                                       | (Signature of Invigilator)     |
| Date   | Time                                       | (Signature of Superintendent)  |

# **Disclaimer**

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## **DTU URLs: QUICK REFERENCE**

http://www.dtu.ac.in http://www.exam.dtu.ac.in

DTU Academic UG Section DTU Times

http://www.dtu.ac.in/Web/Academics http://www.dtutimes.dtu.ac.in

DTU Academic UG Ordinance and Regulations DTU Equal Opportunity Cell

http://www.dtu.ac.in/Web/Academics/ordinance.php http://www.dtu.ac.in/Webleoc/about

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DTU Training and Placement DTU Hostels

http://www.tnp.dtu.ac.in http://www.hostels.dtu.ac.in/II

DTU Central Library DTU Students Welfare

http://www.library.dtu.ac.in http://www.dsw.dtu.ac.in

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## **DELHI TECHNOLOGICAL UNIVERSITY**

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