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# Delhi Technological University

दिल्ली प्रौद्योगिकी विश्वविद्यालय



2024

## QUALITY MANUAL

गुणवत्ता पुस्तिका

(Formerly Delhi College of Engineering, Govt. of NCT, Delhi)

Estd. By Govt. of NCT, Delhi vide Act 6 of 2009

Shahbad Daulatpur, Bawana Road Delhi – 110042, India

16771C

## TABLE OF CONTENTS

S. No.	CONTENTS	PAGE NO.
<b>1</b>	<b>SCOPE</b>	<b>4</b>
1.1	DISTRIBUTION LIST	4
<b>2</b>	<b>REFERENCES</b>	<b>6</b>
<b>3</b>	<b>TERMS AND DEFINITIONS</b>	<b>6</b>
<b>4</b>	<b>CONTEXT OF THE ORGANIZATION</b>	<b>8</b>
4.1	PROFILE OF THE UNIVERSITY	8
4.1.1	ACADEMIC UNITS OF THE UNIVERSITY	9
4.1.1.1	DEPARTMENTS	9
4.1.1.2	SCHOOLS	9
4.1.1.3	CENTRES	9
4.1.2	ACADEMIC PROGRAMMES	10
4.1.2.1	ENGINEERING & TECHNOLOGY	10
4.1.2.2	DESIGN, HUMANITIES, MANAGEMENT & SCIENCE	12
4.1.2.3	Ph.D.	12
4.1.3	CONTINUING EDUCATION PROGRAMME	12
4.1.4	SALIENT FEATURES OF THE DEGREE PROGRAMME	12
4.1.5	MEDIUM OF INSTRUCTION	13
4.1.6	SOURCES OF FUNDING	13
4.1.7	BUSINESS DIMENSIONS	13
4.1.8	FEATURES OF ACADEMIC PROGRAMMES	14
4.1.8.1	UNDERGRADUATE PROGRAMME	14
4.1.8.2	POST-GRADUATE PROGRAMME	18
4.1.8.3	DOCTORAL DEGREE PROGRAMME	21
4.1.9	EVALUATION SYSTEM OF STUDENTS	21
4.2	INTERESTED PARTIES	23
4.3	SCOPE OF THE QUALITY MANAGEMENT SYSTEM	23
4.3.1	LOCATIONS	24
4.4	QUALITY MANAGEMENT SYSTEM AND ITS PROCESSES	24
4.4.1	GENERAL REQUIREMENTS	24
4.4.2	QUALITY MANUAL	24
4.4.3	QUALITY SYSTEM OPERATING PROCEDURES (SOPS)	25
4.4.4	WORK INSTRUCTIONS	25
4.4.5	FORMS/FORMATS/CHECK LISTS	25
4.4.6	RECORDS	25
<b>5</b>	<b>LEADERSHIP</b>	<b>26</b>
5.1	LEADERSHIP AND COMMITMENT	26
5.1.1	GENERAL	26
5.1.2	CUSTOMER FOCUS	26
5.2	POLICY	26
5.2.1	QUALITY POLICY	26
5.3	ORGANIZATION ROLES, RESPONSIBILITIES AND AUTHORITIES	27
5.3.1	AUTHORITIES OF THE UNIVERSITY	27
5.3.2	OFFICERS OF THE UNIVERSITY AND THEIR RESPONSIBILITY	30
<b>6</b>	<b>PLANNING</b>	<b>50</b>
6.1	ACTIONS TO ADDRESS RISKS AND OPPORTUNITIES	50
6.2	QUALITY OBJECTIVES AND PLANNING TO ACHIEVE THEM	50
6.3	PLANNING OF CHANGES	54
<b>7</b>	<b>SUPPORT</b>	<b>54</b>
7.1	RESOURCES	54
7.1.1	GENERAL	54
7.1.2	PEOPLE	55
7.1.3	INFRASTRUCTURE	55
7.1.4	ENVIRONMENT FOR THE OPERATION OF PROCESSES	56
7.1.5	MONITORING AND MEASURING RESOURCES	56

7.1.6	ORGANIZATIONAL KNOWLEDGE	57
7.2	COMPETENCE	57
7.3	AWARENESS	57
7.4	COMMUNICATION	57
7.5	DOCUMENTED INFORMATION	57
7.5.1	GENERAL	58
7.5.2	CREATING AND UPDATING	58
7.5.3	CONTROL OF DOCUMENTED INFORMATION	58
<b>8</b>	<b>OPERATION</b>	<b>59</b>
8.1	OPERATION PLANNING AND CONTROL	59
8.2	REQUIREMENTS OF PRODUCTS AND SERVICES	60
8.2.1	CUSTOMER COMMUNICATION	60
8.2.2	DETERMINING THE REQUIREMENTS FOR PRODUCT AND SERVICES	61
8.2.3	REVIEW OF THE REQUIREMENTS FOR PRODUCT AND SERVICES	62
8.2.4	CHANGES TO REQUIREMENTS FOR PRODUCT AND SERVICES	62
8.3	DESIGN AND DEVELOPMENT OF PRODUCTS AND SERVICES	63
8.3.1	GENERAL	63
8.3.2	DESIGN AND DEVELOPMENT PLANNING	64
8.3.3	DESIGN AND DEVELOPMENT INPUTS	64
8.3.4	DESIGN AND DEVELOPMENT CONTROLS	64
8.3.5	DESIGN AND DEVELOPMENT OUTPUTS	65
8.3.6	DESIGN AND DEVELOPMENT CHANGES	66
8.4	CONTROL OF EXTERNALLY PROVIDED PROCESSES, PRODUCTS AND SERVICES	66
8.4.1	GENERAL	66
8.4.2	TYPE AND EXTENT OF CONTROL	68
8.4.3	INFORMATION FOR EXTERNAL PROVIDERS	69
8.5	PRODUCTION AND SERVICE PROVISION	69
8.5.1	CONTROL OF PRODUCTION AND SERVICE PROVISION	69
8.5.2	IDENTIFICATION AND TRACEABILITY	71
8.5.3	PROPERTY BELONGING TO CUSTOMER OR EXTERNAL PROVIDERS	72
8.5.4	PRESERVATION	73
8.5.5	POST-DELIVERY ACTIVITIES	73
8.5.6	CONTROL OF CHANGES	74
8.6	RELEASE OF PRODUCTS AND SERVICES	74
8.7	CONTROL OF NONCONFORMING OUTPUTS	74
8.7.1	REVIEW AND DISPOSITION OF NON-CONFORMING PRODUCT	75
<b>9</b>	<b>PERFORMANCE EVALUATION</b>	<b>75</b>
9.1	MONITORING, MEASUREMENT, ANALYSIS AND EVALUATION	75
9.1.1	GENERAL	75
9.1.2	CUSTOMER SATISFACTION	76
9.1.3	ANALYSIS AND EVALUATION	76
9.2	INTERNAL AUDIT	78
9.3	MANAGEMENT REVIEW	79
9.3.1	GENERAL	79
9.3.2	MANAGEMENT REVIEW INPUTS	79
9.3.3	MANAGEMENT REVIEW OUTPUTS	80
<b>10</b>	<b>IMPROVEMENT</b>	<b>80</b>
10.1	GENERAL	80
10.2	NONCONFORMITY AND CORRECTIVE ACTION	80
10.2.1	PREVENTIVE ACTION	81
10.3	CONTINUAL IMPROVEMENT	82

1676/c

## 1. SCOPE

Scope of Certification to ISO 9001:2015 Quality Management System covers:

- i. Design, Development, Delivery, and Assessment of Under Graduate, Post Graduate and Doctoral Curriculum leading to award of B.A., B.B.A., B. Des., B.Tech., Five-year integrated B.Sc. and M.Sc., M.A., M.B.A., M. Des., M.Sc., M. Tech., M. Tech. by Research and Ph. D., degrees as per applicable AICTE/ UGC norms in Design, Engineering & Technology, Humanities, Management, Sciences, and Allied disciplines.
- ii. Provision of Research and Consultancy projects for Govt. agencies and Industry.
- iii. Provision of other allied activities such as Placements, Internships, and international affiliations as required to achieve course objectives.

### 1.1 DISTRIBUTION LIST

Copy no.	Copy Holder/ department	Email
1.	Vice Chancellor	vcdu@dtu.ac.in
2.	Registrar	registrar@dtu.ac.in
3.	Dean, Academics (PG)	deanacademicpg@dtu.ac.in
4.	Dean, Academics (UG)	deanacademicug@dtu.ac.in
5.	Dean, Student Welfare	deansw@dtu.ac.in
6.	Dean, Industrial Research Development	ird@dtu.ac.in
7.	Dean, Alumni Affairs	deanalumniaffairs@dce.ac.in
8.	Dean, International Affairs	dean.ia@dtu.ac.in
9.	Dean, Outreach & Extension Activities	deanoutreach@dtu.ac.in
10.	Dean, Student Discipline	deansd@dtu.ac.in
11.	Dean, Planning & Consultancy	dean_planning_consultancy@dtu.ac.in
12.	Director, HRDC	directorhrdc@dtu.ac.in
13.	Director, Equal Opportunity Cell	directoreoc@dtu.ac.in
14.	Director, Centre for Competitive Examination	directorece@dtu.ac.in

1674/C

34  
35

15.	Director, IQAC	iqac@dtu.ac.in
16.	Director, Recruitment Cell	recruitment@dtu.ac.in
17.	Director, East Delhi Campus	directoredc@dtu.ac.in
18.	Director, Physical Education	sports@dtu.ac.in
19.	Director, World Class Skill Centre	directorwsc@dtu.ac.in
20.	Director, Centre for Community Development and Research	director.ccdr@dtu.ac.in
21.	Director Nodal Centre for Energy of Excellence in Energy Transition	directornceet@dtu.ac.in
22.	Head of Academic Departments	head.ac@dtu.ac.in head.am@dtu.ac.in hod.physics@dtu.ac.in head.bt@dtu.ac.in head.cse@dtu.ac.in hod.ce@dtu.ac.in head_dsm@dtu.ac.in Hod.ece@dtu.ac.in dod.head@dtu.ac.in hod.ee@dtu.ac.in hod.ene@dtu.ac.in hodhumanities@dtu.ac.in hod.it@dtu.ac.in hod.me@dtu.ac.in hod.se@dtu.ac.in hod.usme@dtu.ac.in
23.	Controller of Examinations	coe.dtu@dtu.ac.in
24.	Chief Vigilance Officer	vigilance@dtu.ac.in
25.	Controller of Finance	cof@dtu.ac.in
26.	Chief Operating Officer & Head (CC)	head.cc@dtu.ac.in
27.	Security & Transport Officer	security_office@dtu.ac.in, transport_office@dtu.ac.in
28.	PRO & Coordinator, Studio	pro@dtu.ac.in
29.	CEO, DTU IIF (DTU Innovation and Incubation Foundation)	ceo.dtuif@dtu.ac.in
30.	Chief Warden	chiefwarden@dtu.ac.in
31.	Librarian	library@dtu.ac.in
32.	Chief Project Officer / Estate Officer	cpo@dtu.ac.in
33.	Head (Training & Placement)	placements@dtu.ac.in

1673/c

34.	Head (B.Tech continuing education)	hod.continuingeducation@dtu.ac.in
35.	Suptd. (Exam)	superintendentexam@dtu.ac.in
36.	Associate Dean (Academic - UG)	associatedeanacadug@dtu.ac.in
37.	Associate Dean (Academic - PG)	adean.academicpg@dtu.ac.in
38.	Associate Dean (Alumni Affairs)	associatedean.alumni@dtu.ac.in
39.	Associate Dean (IRD)	associatedean.ird@dtu.ac.in
40.	Associate Dean (Planning & Consultancy)	associatedean_planning_consultancy@dtu.ac.in
41.	Associate Dean (Student Discipline)	associatedean.studentdiscipline@dtu.ac.in
42.	Associate Dean (Student Welfare)	associatedean.studentwelfare@dtu.ac.in
43.	Associate Dean (Outreach & Extension)	adeanoutreach@dtu.ac.in
44.	Officer-in-charge (Guest House & Hostel)	oic-gh@dtu.ac.in
45.	Officer-in-charge (Health Centre)	oic-uhc@dtu.ac.in
46.	Officer-In-Charge, Workshop	oic-ws@dtu.ac.in
47.	Deputy Controller of Accounts	ddo@dtu.ac.in
48.	Deputy Registrar (General Administration)	ga@dtu.ac.in
49.	Deputy Registrar (Establishment and Pension)	establishment@dtu.ac.in
50.	Assistant Registrar (Store & Purchase)	sp@ dtu.ac.in
51.	Assistant Registrar, (Vigilance, Legal), PIO & NO (PGMS)	vigilance@dtu.ac.in
52.	Assistant Registrar (USME)	arusme@dtu.ac.in
53.	EDP Manager & OSD (Results)	exam.conf@dtu.ac.in

## 2. REFERENCES

ISO 9001: 2015, Quality Management System – Fundamentals and Vocabulary

## 3. TERMS AND DEFINITIONS

Abbreviation used	Meaning
B. Tech.	Bachelor of Technology
B. Des.	Bachelor of Design
BA	Bachelor of Arts

BBA	Bachelor of Business Administration
Ph.D.	Doctor of Philosophy
MBA	Master of Business Administration
MA	Master of Arts
M. Tech.	Master of Technology
M. Sc.	Master of Science
M. Des.	Master of Design
UG	Under-Graduation
PG	Post-Graduation
HOD	Head Of Department
HRDC	Human Resource Development Centre
IQAC	Internal Quality Assurance Cell
T&P	Training & Placement
R&D	Research & Development
IRD	Industrial Research & Development
AA	Alumni Affairs
NAAC	National Assessment and Accreditation Council
TEQIP	Technical Education Quality Improvement Program
APAR	Annual Performance Appraisal Report
BOM	Board Of Management
IPR	Intellectual Property Rights
IIF	Innovation and Incubation Foundation
NIRF	National Institute Ranking Framework
DTTE	Directorate of Training and Technical Education
NIELIT	National Institute of Electronics & Information Technology
NBA	National Board of Accreditation
PDF	Professional Development Fund
CAS	Career Advancement Scheme
USIP	University Student Internship Program
AIPR	Annual Immovable Property Report
SW	Student Welfare
GIAN	Global Initiative of Academic Networks
NCEET	Centre for Excellence in Energy Transition
CCDR	Centre for Community Development and Research

## **4. CONTEXT OF THE ORGANIZATION**

### **4.1 PROFILE OF THE UNIVERSITY**

Delhi Technological University (formerly Delhi College of Engineering) is a non-affiliating teaching-cum-research University engaged in fostering excellence in education, research and innovations in engineering and technology, applied sciences, humanities, and management. Delhi College of Engineering, (initially established as 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 was set up at 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 programmes in engineering, technology, arts and sculpture, architecture, pharmacy and commerce. In 1952 the college was affiliated with University of Delhi and started formal Degree level Programmes. From July 2009, the Delhi College of Engineering became Delhi Technological University a non-affiliating Technological University vide Delhi Government Act 6 of 2009. As Delhi Technological University (DTU) it has the desired autonomy to excel and shape itself as a world class Technological University committed to foster engineering excellence and scientism together. University offers undergraduate, postgraduate and research programs in Design, Engineering & Technology, Humanities, Management, Sciences and allied disciplines. The University is inspired by talent and driven by innovations and is firmly committed to provide industry relevant, socially responsible manpower to meet the challenges of 21<sup>st</sup> Century. The culture of research and innovations is vibrant in the DTU campus which inspires students from UG levels onwards to engage in cutting edge technology development and discover the value and worth of the knowledge acquired by them during their studies. With its illustrious history the institution is marching on the pathways of excellence and is one of the highly sought- after University for the inspired students community and faculty. Our alumni have excelled in varied fields such as business and industry, administrative and regulatory services, research and education and social and human rights organizations.

#### **4.1.1 ACADEMIC UNITS OF THE UNIVERSITY**

The academic units of the University are Departments and schools which organizes and conducts undergraduate, postgraduate, and doctoral (Ph.D.) programmes in relevant fields such as engineering & technology, humanities, management, sciences, and allied disciplines. The University also has several centres. The centres are special inter-disciplinary units serving the



1670/c

University as a whole. As of date, the academic units and centres of the University are:

#### **4.1.1.1 DEPARTMENTS**

1. Department of Applied Chemistry
2. Department of Applied Mathematics
3. Department of Applied Physics
4. Department of Biotechnology
5. Department of Civil Engineering
6. Department of Computer Science and Engineering
7. Department of Design
8. Department of Electrical Engineering
9. Department of Electronics and Communication Engineering
10. Department of Environmental Engineering
11. Department of Humanities
12. Department of Information Technology
13. Department of Mechanical Engineering
14. Department of Software Engineering

#### **4.1.1.2 SCHOOLS**

1. Delhi School of Management
2. University School of Management and Entrepreneurship (East Campus)

#### **4.1.1.3 CENTRES**

1. Central Library
2. Central Workshop
3. Centre for Advanced Production and Industrial Engineering
4. Centre for Advanced Studies and Research in Automotive Engineering
5. Centre of Excellence in Disaster Risk Reduction (COEDRR)
6. Centre for Community Development and Research
7. Centre of Executive Education
8. Centre for Value Based Education
9. Centre of Excellence for Science of Happiness
10. Centre of Excellence Electric Vehicles and Related Technologies

11. Computer Centre
12. DTU Innovation and Incubation Foundation
13. DTU Studio
14. Entrepreneurship Development Centre
15. Equal Opportunity Cell
16. Intellectual Property Rights Cell
17. Health Centre
18. Human Resource Development Centre
19. Kitchen Waste Plant
20. Multidisciplinary Centre for Geoinformatics
21. Nodal Centre of Excellence in Energy Transition
22. Solar Energy Centre
23. Training & Placement Cell
24. Vinod Dham Centre of Excellence for Semi-Conductor

#### **4.1.2 ACADEMIC PROGRAMMES**

The University as of date offers the following academic programmes.

##### **4.1.2.1 ENGINEERING & TECHNOLOGY**

###### **A. BACHELOR OF TECHNOLOGY (B. TECH.)**

1. B. Tech. in Bio-Technology
2. B. Tech. in Chemical Engineering
3. B. Tech. in Civil Engineering
4. B. Tech. in Computer Science & Engineering
5. B. Tech. in Electrical Engineering
6. B. Tech. in Electronics & Communication Engineering
7. B. Tech. in Engineering Physics
8. B. Tech. in Environmental Engineering
9. B. Tech. in Information Technology
10. B. Tech. in Mathematics & Computing
11. B. Tech. in Mechanical Engineering
12. B. Tech. in Mechanical Engineering with Specialization in Automotive Engineering
13. B. Tech. in Production & Industrial Engineering

1668/e

14. B. Tech. in Software Engineering
15. B. Tech. in Electrical Engineering (Evening)
16. B. Tech. in Electronics & Communication Engineering (Evening)
17. B. Tech. in Mechanical Engineering (Evening)

**B. MASTER OF TECHNOLOGY (M. TECH.)**

1. M. Tech. by Research
2. M. Tech. in Artificial Intelligence (AI)
3. M. Tech. in Bioinformatics
4. M. Tech. in Computer Aided Analysis and Design (CAAD)
5. M. Tech. in Computer Science and Engineering
6. M. Tech. in Control & Instrumentation
7. M. Tech. in Data Science
8. M. Tech. in Energy Systems & Management (ESM)
9. M. Tech. in Environmental Engineering
10. M. Tech. in Geo informatics (GINF)
11. M. Tech. in Geotechnical Engineering
12. M. Tech. in Hydraulics & Water Resources Engineering
13. M. Tech. in Industrial Bio Technology
14. M. Tech. in Industrial Engineering and Management (IEM)
15. M. Tech. in Information System
16. M. Tech. in Material Science and Technology
17. M. Tech. in Microwave and Optical Communication Engineering
18. M. Tech. in Polymer Technology
19. M. Tech. in Production Engineering
20. M. Tech. in Power Electronics and Systems (PES)
21. M. Tech. in Power System
22. M. Tech. in Signal Processing & Digital Design
23. M. Tech. in Software Engineering
24. M. Tech. in Structural Engineering
25. M. Tech. in Thermal Engineering
26. M. Tech. in VLSI Design and Embedded System

#### **4.1.2.2 DESIGN, HUMANITIES, MANAGEMENT & SCIENCE**

1. Bachelor of Arts (Economics)
2. Bachelor of Business Administration (BBA)
3. Bachelor of Design (B. Des.)
4. Executive MBA (Data Science & Analytics)
5. Integrated M.Sc.
6. Master of Business Administration (MBA)
7. MBA (Business Analytics)
8. Master of Business Administration (Executive)
9. MBA Family Business & Entrepreneurship
10. MBA Innovation, Entrepreneurship and Venture Development (IEV)
11. M. A. (Economics)
12. Master of Design (M. Des.)
13. M. Sc. in Biotechnology
14. M.Sc. in Chemistry
15. M.Sc. in Mathematics
16. M. Sc. in Physics

#### **4.1.2.3 Ph.D.**

University offers Doctor of Philosophy (Ph.D.) Degree in Design, Engineering & Technology, Humanities, Management, Sciences, and allied areas.

#### **4.1.3 CONTINUING EDUCATION PROGRAMME**

The University organizes various need-based workshops and short term courses ranging from one day to several weeks duration for the in-service professionals, engineers, managers, faculty, staff and students. On the successful completion of this programme, participants are awarded certificates.

#### **4.1.4 SALIENT FEATURES OF THE DEGREE PROGRAMMES**

- B. Des and M. Des sponsored / self-sponsored projects
- Continuous assessment & evaluation of the students' performance
- Credit based promotion
- Choice based Credit System (CBCS) based on rich electives
- Industrial Training

- 1662/C
- Letter grades
  - Project based learning & assessment
  - MOOC Courses
  - Minor specialization
  - Semester system
  - Multiple entry and exit
  - Academic bank of credit (ABC)

#### **4.1.5 MEDIUM OF INSTRUCTION**

The medium of instruction at University is English.

#### **4.1.6 SOURCES OF FUNDING**

- Government of NCT of Delhi
- UGC, AICTE and other Central/ State Ministries/ departments
- Tuition fee
- Research & consultancy projects, design and testing services
- Donations

These funds are used for infrastructure development, modernization & upgradation of laboratories, recurring expenditure and other facilities. All the activities in the University are governed by the rules and regulations of the University and also by the conditions imposed by the funding agencies, wherever applicable.

#### **4.1.7 BUSINESS DIMENSIONS**

The domain of activities of the University broadly covers the following:

- Design, Engineering & Technology, Humanities, Management, Sciences, and allied disciplines leading to B.A., B.B.A., B.Des., B.Tech., Five year integrated B.Sc. and M.Sc., M.A., M.B.A., M.Des., M.Sc, M.Tech., M.Tech by Research, and Ph.D, degrees
- Imparting knowledge to students beyond the prescribed curriculum.
- Continuing education for in-service professional-engineers and managers.
- Consultancy and Testing services.
- Design, Research & Development activities.
- Innovation & Incubation, IP creation

1665/c

#### **4.1.8 FEATURES OF ACADEMIC PROGRAMMES**

Over the years, engineering and technology education in India has undergone significant changes in terms of goals, approach and contents. Today, a well-trained engineer/ technologist is expected to possess knowledge of basic and applied sciences and scientific methods, an in-depth understanding of the subject domain and professional competency in his/her area of specialization, versatility to work with inter-disciplinary groups and sensitivity to the needs and aspirations of the industry in particular and the society at large. The curriculum at DTU is designed to produce engineers, technologists who would be capable of meeting these goals. The curriculum is reviewed and updated periodically to ensure continued relevance.

##### **4.1.8.1 UNDERGRADUATE PROGRAMME**

###### **A. BACHELOR OF TECHNOLOGY (B.Tech.)**

Undergraduate engineering students are taught a series of courses in basic sciences to develop understanding of scientific principles and methods, analytical ability and rigor. These courses are followed by courses in engineering and technology to provide a smooth transition from basic sciences to professional engineering courses. A series of courses in technical arts are designed to develop engineering skills through training in engineering drawing, measurements, computing skills, manufacturing technology and effective communication. The professional courses in the chosen field of specialization are meant to develop creative abilities for the application of basic and engineering sciences to engineering and technology problems involving planning, design, manufacturing, maintenance and research & development and innovation. In addition, courses in humanities and economics are incorporated to develop appreciation of the impact of science and technology on society. The under-graduate curriculum consists of two main components i.e. core courses and professional courses. The core courses lay emphasis on concepts and principles. It involves teaching of subjects in Basic Sciences, Humanities and Economics, Design and Engineering Science. Attention is also paid to develop communication skills in English language - the medium of instructions. The Professional courses lay emphasis on system analysis, design, manufacturing and professional practice. There is an in-built flexibility to encourage students to specialize in streams of their choice through a system of professional and free electives. Presentation of a Seminar, Industrial Training/ internship in addition to the course work and further carrying out a thesis/dissertation are necessary components of undergraduate degree. Additionally, the curriculum includes Allied Engineering courses (AEC)/ Value Added Courses (VAC) and Skill Enhancement Courses (SEC) as per NEP

1664/c

2020.

The University strives to foster among its students a strong desire and capacity for continuous learning as well as self-appraisal to develop sterling human & professional qualities and a strong sense of service to society through designed, curricular, co-curricular activities and congenial campus environment.

## **B. BACHELOR OF BUSINESS ADMINISTRATION (BBA)**

The Bachelor of Business Administration (BBA) programme provides a comprehensive education in various aspects of business and management. A BBA degree is typically designed to equip students with a strong foundation in business principles and skills, preparing them for entry-level managerial positions in various industries. The curriculum of a BBA program covers a range of business disciplines, including accounting, finance, marketing, management, economics, operations, and more. Students learn about fundamental concepts, theories, and practices in these areas to develop a well-rounded understanding of how businesses operate. The course structure will include multidisciplinary courses to broaden the intellectual experience of the students; ability enhancement courses to enable the students to acquire and demonstrate the core linguistic skills, including critical reading and expository and academic writing skills, and skill-enhancement courses, including value-added courses which will seek to impart practical skills, hands-on training, soft skills, etc., to enhance the employability of students.

The BBA four-year programme has been designed in line with New Education Policy which offers minor specialisation, interdisciplinary, value-added, and ability enhancement courses. Our BBA four years program offers multiple entry and exit options along with minor specialisation in data sciences and economics. Also, students are offered an option of discipline specific specialisation in finance, marketing and human resource management. Overall, the program offers a comprehensive and holistic combination business, entrepreneurship, data science, and value-added courses and experience. The University is offering a four-year undergraduate program (FYUP) in BBA program from the 2023-24 academic sessions. The programme is based on the philosophy and structural elements proposed in the New Education Policy 2020, and the Curriculum and Credit Framework for undergraduate programs published by the UGC in December 2022. The major elements of NEP 2020 such as a structure of certification providing flexibility of learning curriculum, multiple entry and exit points, multidisciplinary of learning, interdisciplinary courses, providing for deeper learning in dual disciplines, through a Minor in a multidisciplinary area. Such Minor options have been brought

into the curriculum. It is envisaged that along with BBA, the minor would be available in streams of Economics and/or Decision Sciences/Analytics that have proven to be of great value. The programme will offer multiple exit options to the students with an option to obtain a one year certificate/two year diploma in Management, or a 3-Year BBA degree with or without the Minor Specialization/4-Year Honours Degree with or without the Minor Specialization.

### **C. B.A. (HONOURS) ECONOMICS**

The Four-Year B.A. (H) Economics programme offered at USME, East Delhi Campus, DTU aims to provide a sound understanding of core, pure and applied economics. While students study economics in considerable depth in this specialized degree, students also apply ideas and techniques from many other disciplines too. The program includes courses in analytics, computers applications and programming, mathematics, statistics, and other ability enhancement and value-added courses. Apart from building core knowledge in economics, the course permits students to adopt Electives of their interest in management/data science courses.

The University is offering a four-year undergraduate program (FYUP) in B.A. (H) Economics from the 2023-24 academic session. The programme is based on the philosophy and structural elements proposed in the New Education Policy 2020, and the Curriculum and Credit Framework for undergraduate programs published by the UGC in December 2022. The major elements of NEP 2020 such as a structure of certification providing flexibility of learning curriculum, multiple entry and exit points, multidisciplinary of learning, interdisciplinary courses, providing for deeper learning in dual disciplines, through a Minor in a multidisciplinary area. Such Minor options have been brought into the curriculum. It is envisaged that along with Economics, the Minor would be available in streams of Management and/or Decision Sciences/Analytics that have proven to be of great value. The core learning in Economics will be strengthened with the provision of a minor in either area for greater job readiness and in alignment with workforce skills at managerial levels in future.

The programme will offer multiple exit options to the students with an option to obtain a one year certificate/two year diploma in Economics, or a 3-Year Degree in Economics with or without the Minor Specialization/4-Year Honours Degree with or without the Minor Specialization. Drawing upon the strengths of the University and the department, the minor specialization will be offered in the areas of Management and Data Science. In line with the objectives of NEP 2020 and the curriculum framework of undergraduate programmes proposed by UGC, the course structure will include multidisciplinary courses to broaden the intellectual



1662/c

experience of the students; ability enhancement courses to enable the students to acquire and demonstrate the core linguistic skills, including critical reading and expository and academic writing skills, and skill-enhancement courses, including value-added courses which will seek to impart practical skills, hands-on training, soft skills, etc., to enhance the employability of students.

#### **D. BACHELOR OF DESIGN (B. Des.)**

Undergraduate design students are taught a series of courses in basic design to develop understanding of principles and methods regarding modern design. These courses are followed by advance courses used in technology to provide a smooth transition from basic design to professional designers. A series of courses in design, craft, arts animation are designed to develop skills through training in drawing, art, workshop, measurements, computing skills, manufacturing technology and effective communication. The professional courses in the chosen field of specialization related to design are meant to develop creative abilities for the application of basic design problems involving planning, design, manufacturing, maintenance and research & development and innovation. In addition, courses in humanities and economics are incorporated to develop appreciation of the impact of science and technology on society. The under-graduate curriculum consists of two main components i.e. core courses and professional courses. The core courses lay emphasis on concepts and principles. It involves teaching of subjects in Sciences, Humanities and Economics, Management, Design and Engineering Science. Attention is also paid to develop communication skills in English language - as the medium of instructions. The Professional courses lay emphasis on system analysis, design, manufacturing and professional practices. The advance specializations in Design emphasises areas including Product/Pattern Making Design, Interaction Design, Visual Communication Design, Fashion Design, Film Design, Transportation Design, Game Design, Service Design, and Lifestyle & Accessory Design

There is an in-built flexibility to encourage students to specialize in streams of their choice through a system of professional and free electives. Presentation of a Seminar, Industrial Training, Internship, Field Visit, Design Degree Show in addition to the course work and further carrying out a thesis/dissertation are necessary components of undergraduate degree. Additionally, the curriculum includes Allied Engineering courses (AEC)/ Value Added Courses (VAC) and Skill Enhancement Courses (SEC) as per NEP 2020.

The University strives to foster among its students a strong desire and capacity for continuous

learning as well as self-appraisal to develop sterling human & professional qualities\ and a strong sense of service to society through designed, curricular, co- curricular activities and congenial campus environment.

**4.1.8.2 POST-GRADUATE PROGRAMME**

**A. MASTER OF TECHNOLOGY (M. Tech.)**

The University in offering various M. Tech. programmes having uniformly maintained basic structure and philosophy of the post-graduate education in engineering in the country as per NEP 2020 guidelines. All M. Tech. programmes, regular or part-time, have their corresponding course work classified into two major categories: Core Courses and Elective Courses. The core courses are aimed at imparting knowledge of the relevant basics analytical-tools & techniques necessary to build-up on them elective (professional) courses. Core courses of a particular programme are compulsory for all the students registered in that programme. Elective courses are of professional nature. To be eligible for a degree, a student must complete requisite number of core and elective courses. However, to bring in flexibility a basket of electives is offered to the students in order to widen their horizon. A student has to earn 80 credits for award of the M. Tech. degree. Research methodology is a mandatory core paper. Further, the courses include Skill Enhancement Courses and Audit course

Presentation of a minor project in addition to the course work and further carrying out a thesis/dissertation are necessary components of post-graduate degree. The minor project should be on a topic relevant to the area of study, presenting the state-of-art work done on the subject. The literature survey conducted during the minor project should highlight the areas for further research work on the subject. The problem taken up for the thesis/ dissertation should be as far as possible on the work done during minor project. Both the minor project and thesis/dissertation are submitted in bound form and are presented during their respective evaluation. In case a student fails to undertake, complete & clear thesis work he/ she will not be eligible for award of post-graduate degree. A student has the EXIT option at the end of successful completion of the first year after earning 48 credits. In such case, the student will be awarded the "PG Diploma" in that particular branch.

**B. MASTER OF BUSINESS ADMINISTRATION (MBA)**

The programme is highly business centric that enables students to learn all the essential basic management knowledge required for handling business. The students learn broad business understanding, effective communication skills, strategic problem solving, networking skills,

7660/c

resource and time management, analytical skills and leadership. In the duration of the course, students are fostered with managerial skills to manage effectively all possible situations related to business problems and decision making. The different MBA programs offered by the University include MBA, MBA (Business Analytics), MBA (Innovation, Entrepreneurship, and Venture Development), MBA (Family Business & Entrepreneurship), and MBA (Executive). The core courses in MBA programmes cover various areas of business such as accounting, finance, marketing, human resources, operations, and statistics. The specialisations include Marketing Management, Financial Management, Human Resource Management, Supply Chain Management, Information Technology Management and Analytics. Apart from learning basic management skills, these courses focus on students to develop skillsets, toolkits and attitude suited for the complex business environment.

#### **C. MASTER OF SCIENCE (M.Sc.)**

The Two Years M.Sc. Degree Programme offers quality education in the disciplines of Mathematics, Physics, Chemistry and Biotechnology. The course is designed to provide a Basket of 'Elective' courses as an integral component of curriculum, for catering to the varied interests of the students, so that students can develop 'specialization' in the areas of their academic and professional interest. The interdisciplinary content of the curricula which is based on Choice Based Credit System (CBCS) guidelines issued by University Grants Commission (UGC) equips the students with the ability to utilize scientific knowledge foundation for practical and industrial applications. The medium of instruction is English for all programmes.

#### **D. MASTER OF DESIGN (M. Des.)**

The vision behind the establishment of Department of Design is to pursue excellence in design thinking, design scholarship and design practice for the betterment of society in a holistic manner. Design is viewed as a driver of innovation and is recognized as a key differentiator for providing a competitive edge to products and services. It involves an integrated humanistic approach to design products, it involves an integrated humanistic approach to design products, services and systems. It seeks to delve deeper into an understanding of technological, Commercial and societal context in conception, developments and delivery of innovative products and services as well as tools, techniques and methods required in the practice of design suitable for the environment.

**E. M.A. (Economics)**

The MA Economics programme offered at USME, DTU has a strong foundation in core economics and leverages the University's strengths in analytics and management by giving an option to study up to 3 electives from MBA (Business Analytics) and 4 optional audit courses in management (MBA). The students get a chance to choose discipline-specific electives from cutting-edge emerging streams in economics such as Behavioral Economics, GIS and Remote Sensing, Spatial Econometrics, Energy Economics, Health Economics, Analytics, Applied Quantitative Finance and Emerging Financial Markets. The programme includes mandatory workshops on key economic/financial databases (NSSO, NFHS, ASI, CMIE, Eikon) as well as hands on workshops/lab-based courses in data extraction, visualization, analytics, modelling, simulation, primary data collection and analysis. The programme offers an immersive industry exposure through projects and interactions.

**F. M. Tech. by Research**

The M. Tech. by Research programme is designed for students who wish to explore a career in R&D. The programme can serve as a first step either towards a Ph.D. or towards a high-end R&D oriented career in industry. The duration of the programme is flexible with a duration of 2 years. The programme is for those students who are interested in exploring specified in-depth research problem or real-world problem through research, pursue their career in M. Tech. by Research programme. The programme is open to students with a bachelor's degree in all engineering disciplines. The 30% credits of core course and elective course can be covered from online course as per NEP 2020 policy. The programme is focused on conducting quality and innovative research. The outcome of this programme is one SCIE journal paper and one SCOPUS indexed conference. The programme is different from M.Tech. and M.Sc. programme in terms of research component. The credits of the M.Tech by research programme is 80 as per NEP 2020. The programme scheme is categorized in two parts, where 2/3 part of the scheme is focused on research and remaining 1/3 part of the scheme is focused on University core course, department core course and elective course. Further, if the student wants to explore the research in more detail, then based on the performance in 1<sup>st</sup> year and research potential may convert to Ph.D. programme. In this case, the student is not required to do course work of the Ph.D. The 1<sup>st</sup> year scheme of the programme is designed same as of Ph.D. course work in addition to the research component.

1658/c

#### **G. Five-year Integrated B. Sc. and M. Sc.**

DTU offers quality education in the disciplines with five year Integrated M.Sc Programs in Applied Mathematics, Applied Physics, Applied Chemistry, Humanities and Biotechnology Departments of DTU w.e.f. Academic Year 2024-25. The programme offers multiple entries & exits (Single Major with Minors). A student is given an EXIT option and receives Certificate, diploma, B.Sc., B.Sc. (Honors), and M.Sc. after successfully completing one, two, three, four, and five years, respectively.

#### **4.1.8.3 DOCTORAL DEGREE PROGRAMME**

High caliber students with demonstrated capability can register themselves for Ph.D. degree even after their Bachelor degree in any branch of Design, Engineering & Technology, Humanities, Management, Sciences, and Allied areas in the University. However, candidates registered in this programme directly after Bachelor degree are required to take-up adequate number of make-up courses from M. Tech. programme in the area the candidate is preparing to carry out research work. There is laid down course work requirement for the Doctoral Degree Programme for candidates registering after obtaining under graduate and post graduate degrees as per University norms. The provisions in the rules and regulations governing the programme, aim at ensuring high quality of research leading to Ph. D. degree. DTU also offers Ph.D. for “industry/working professional” in part-time mode. Ph. D. programmes are offered on both regular and part-time basis. Ph. D. thesis is evaluated by a panel of examiners drawn from the peer group on the topic, both from India and abroad.

#### **4.1.9 EVALUATION SYSTEM OF STUDENTS**

The University follows semester system of education, namely odd and even semesters in a year. The salient features of the evaluation system of students are continuous assessment and evaluation of the students’ performance and credit based promotion. Each course carries a numeral weightage called “Credit” to be earned by the students after successful completion of the course. At the end of the semester the students are awarded a letter grade in each course, depending upon the overall class performance. The evaluation is through Mid Semester Examination, End-Semester Examination, Class work sessional and Practical sessional. Class work sessional may include unannounced and announced quiz, test, tutorial work, home assignments, and subject seminar.

1657/1

Letter Grade	Performance rating	Grade Point equivalent
O	Outstanding	10
A+	Excellent	9
A	Very Good	8
B+	Good	7
B	Above Average	6
C	Average	5
P	Pass	4
F	Fail	0
I	Incomplete	-

O, A+, A, B+, B, C and P grade are the pass grades.

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:

$$\text{S.G.P.A} = \frac{\sum_{i=1}^n C_i \times P_i}{\sum_{i=1}^n C_i}$$

Where,

$C_i$  = Number of Credits of the  $i^{\text{th}}$  course of a semester for which SGPA is to be calculated.

$P_i$  = Grade Point obtained in  $i^{\text{th}}$  course.

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

$$\text{C.G.P.A} = \frac{\sum_{i=1}^m C_i \times P_i}{\sum_{i=1}^m C_i}$$

where,

$C_i$  = Number of Credits of the  $i^{\text{th}}$  course of a semester.

$P_i$  = Grade Point obtained in  $i^{\text{th}}$  course. A grade lower than 'P' (i.e. grade point < 4) in a course shall not be taken into account.

$i = 1, \dots, m$ , 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.

1656/c

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".

#### 4.2 INTERESTED PARTIES

- Govt. of NCT of Delhi
- University Grants Commission (UGC)
- All India Council of Technical Education (AICTE)
- Ministry of Human Resource Development (MHRD), Govt. of India
- National Board of Accreditation (NBA)
- National Assessment and Accreditation Council (NAAC)
- Board of Management, DTU
- Industry
- Students of University
- Parents
- Employers
- Teachers of University
- Technical and non-technical Staff
- University Administration
- Alumni of University
- Academic departments of University
- Non-academic departments providing support services
- National Informatics Centre (NIC)
- Central Board of Secondary Education (CBSE)
- Auditors
- Vendors

#### 4.3 SCOPE OF THE QUALITY MANAGEMENT SYSTEM

The University has established, documented, implemented and is maintaining a Quality Management System (QMS) as per the requirements of ISO 9001: 2015 international standard. Continuous improvement in the effectiveness of QMS is as per planned arrangement, reviews and necessary actions. The University has:

- a) Determined the processes needed for the quality management system and their application throughout the organization process pertaining to all requirements of ISO 9001:2015 standards are being carried out in the University and no clause is excluded. The processes needed for the process for management activities, provision of resources, instructional design, delivery and control and measurement. The block diagram is shown at Annexure-II.
- b) Determined the sequence and interaction of the processes of the quality management system.

1655/e

This includes processes pertaining to instruction planning, delivery and control as well as support, service and administrative processes.

- c) Determined the criteria and methods needed to ensure that both the operation and control of these processes are effective. The risk analysis is placed at Annexure-III.
- d) Ensured that all the resources and information required for operation and monitoring of the processes are available from time to time.
- e) Has planned arrangements for monitoring measurement, wherever applicable, and analysis of the processes.
- f) Has implemented the planned arrangements along with their control mechanism for the achievement of planned results and for continual improvement of the processes.

#### **4.3.1 Locations**

- i. Delhi Technological University, Bawana Road, Delhi – 110042
- ii. University School of Management and Entrepreneurship, Vivek Vihar, Delhi-110095

### **4.4 QUALITY MANAGEMENT SYSTEM AND ITS PROCESSES**

#### **4.4.1 GENERAL REQUIREMENTS**

The University management in accordance with the requirements of ISO 9001:2015 International standard is managing the processes. The University has not outsourced any process that affects conformity to requirements. The University conforms to all regulatory requirements of UGC, AICTE, Ministry of HRD, NAAC, and NBA.

The University has established the following documents of the quality managementsystem:

- a) Statement of Quality Policy
- b) Statement of Quality Objectives
- c) Quality manual (this document)
- d) Documented procedures and records, as required by ISO 9001:2015 standard documents like forms, formats, work instructions, checklists and others which are required to ensure effective planning, operation and control of the processes.
- e) Records of performance of various activities of the quality management system. The documents are in the form of hard copy, as well as soft copy.

#### **4.4.2 QUALITY MANUAL**

The quality manual covers the requirements of ISO 9001:2015 standard opted for



1654/c

5.

implementation at DTU. The quality manual makes reference to the quality system procedures and outlines the structure of documentation used in the quality system. The responsibility for maintaining/ updating the quality manual lies with Management Representative (MR). The quality manual is distributed as per the distribution list, given in the beginning of this manual.

The University has established a quality manual that include:

- a) The scope of the quality management system.
- b) An outline of the documented proceedings established for the quality management system and a reference to the detailed procedures contained in the procedural manual.
- c) Flow charts of processes depicting the procedure of performance of activities and also the interaction between various processes of the quality management systems.

#### **4.4.3 QUALITY SYSTEM OPERATING PROCEDURES (SOPs)**

Quality system procedures define the scope, responsibility, operating methods and the logical sequence of activities to complete the process/ functional activity. The procedures are contained in the functional manual of a department/ school/ centre including the system procedure common to all departments/ centres. The functional manual is duly indexed and contains list of associated work instructions and formats for records.

#### **4.4.4 WORK INSTRUCTIONS**

Work instructions for all activities lay down the step-by-step method of carrying out a task.

#### **4.4.5 FORMS/FORMATS/CHECK LISTS**

For recording the performance data of various tasks, forms/ formats are used. The forms/ formats depict the sequence of activities & allow for space to record observations of data against every activity. Check lists are the documents which are designed to ensure

- i) timely actions in the performance of tasks
- ii) necessary inputs from all concerned

#### **4.4.6 RECORDS**

Records are the objective evidences showing that the established quality system has actually been in use and are effective. The records as mentioned in various clauses of the quality system are maintained by the concerned functional heads satisfying the requirements of "Record Control".

## **5. LEADERSHIP**

### **5.1 LEADERSHIP AND COMMITMENT**

#### **5.1.1 GENERAL**

The management of the University is committed to develop and implement the quality management system. The management of the University is determined for continual improvement of the quality management system for its effectiveness. The commitment of the University management is manifested from the following:

- a) A quality policy of the University has been established, and exhibited at prominent places in the University to disseminate the intent of the quality policy and the commitment contained in it.
- b) The quality objectives and their means and measures have been established for various processes and functions at each level.
- c) The management of the University regularly communicate the importance of maintaining high quality of instructional process, satisfying the requirements of students, employing industry/organizations, and society through circulars, notices, meetings etc.
- d) Management reviews are conducted at planned intervals to ensure the continuing suitability, adequacy and effectiveness of the quality management system.
- e) The University management ensures the availability of resources as and when required for carrying out activities to maintain high quality.

#### **5.1.2 CUSTOMER FOCUS**

The management follows all the applicable statutory and regulatory requirements consistently and ensures that the requirements of students are addressed. University management regularly through established mechanism checks the satisfaction level of the stakeholders and take appropriate action to enhance the satisfaction level of all the stakeholders.

### **5.2 POLICY**

#### **5.2.1 QUALITY POLICY**

The quality policy of the University has been written in the English language and approved by BOM. The same is given below.

“The University is committed to achieving global standards of excellence in the field of Science,

1652/c

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.”

It is exhibited at prominent places in the University for exposure to stake holders. All the employees of the University have been explained the meaning of and commitment to the quality policy. It has been ensured that all employees have clearly understood the policy with regard to its meaning, relevance and their commitment to it. The quality policy is reviewed at the time of management review for its continuing suitability.

### **5.3 ORGANIZATION ROLES, RESPONSIBILITIES AND AUTHORITIES**

The University management has ensured that the authority and responsibilities are defined and communicated within the organization. The Organizational Chart of the University is given in the Annexure-I.

#### **(a) Visitor of the University**

The President of the Republic of India is the Visitor of the University. Any dispute arising between the University and any other University, established by Law in Delhi may be referred to the Visitor whose decision shall be final and binding on the parties.

#### **(b) Chancellor of the University**

The honorable Lieutenant Governor, Govt. of NCT of Delhi is the Chancellor of the University. The Chancellor, by virtue of his office shall be the Chairperson of the Court.

### **5.3.1 AUTHORITIES OF THE UNIVERSITY**

#### **(A) University Court**

As per DTU Act 6 of 2009 read with section 20, the court shall review from time to time, the broad policies and programmes of University and suggest measures for the improvement and development of the University.

The court shall also have the following other powers and functions:

- (a) To consider and pass resolutions on the annual report and annual accounts of the University and the report of its auditors on such accounts.
- (b) To advise the Chancellor in respect of any matter which may be referred to it for advice.
- (c) To perform such other functions as may be prescribed.

1651/c

**(B) The Board of Management**

- The Board of Management has the power of management and administration of the revenues and properties of the University and the conduct of all administrative affairs of the University not otherwise provided for.
- Subject to the provisions of the Act, the Statutes and the Ordinances, the Board of Management has, in addition to the other powers vested in it by and under the Statutes, have the following powers, namely :
  - a) to create teaching and other academic posts in the University and to define the functions and conditions of service of the Professor, Associate Professors, Assistant Professors, other teachers and the academic staff employed by the University after taking into consideration the recommendations of the Academic Council.
  - b) to prescribe qualifications and other conditions of eligibility for teachers and other academic staff after taking into account the recommendations of the Academic Council.
  - c) to make appointments of such Professors, Associate Professors, Assistant Professors, other teachers and such academic staff as may be necessary, on therecommendations of the selection committees constituted for the purpose.
  - d) to make appointments to temporary vacancies of any academic and non-teaching staff.
  - e) to specify the manner of appointments to temporary vacancies of the academic and non- teaching staff.
  - f) to provide for the appointment of visiting professors, chaired professors and determine the terms and conditions of such appointment.
  - g) to create administrative, ministerial, technical and other necessary posts after taking into account the recommendations of the Finance Committee and to specify the manner of appointment thereto.
  - h) to prescribe qualifications and other conditions of eligibility for non-teaching staff.
  - i) to make appointments of non-teaching staff as may be necessary, on the recommendations of the selection committees constituted for the purpose.
  - j) to regulate and enforce discipline amongst the employees in accordance with the Statues and the Ordinances.
  - k) to transfer or accept transfers of any immovable or movable property on behalf of the University.

1650/C

- l) to entertain, adjudicate upon or redress the grievances of the employees and the students of the University who may, for any reason feel aggrieved.
- m) to fix the remuneration payable to invigilators and travelling and other allowances payable after consulting the Finance Committee.
- n) to select a common seal for the University and to provide for the use of such seal.
- o) to delegate any of its powers to the Vice-Chancellor, and on the recommendations of the Vice-Chancellor to the Pro Vice-Chancellors, Registrars, the Controller of Finance or any other Officer, employee or authority of the University or to a Committee appointed by it.
- p) to institute fellowships, scholarships, studentships.
- q) to exercise such other powers and perform such other functions as may be conferred or imposed by the Act or the Statutes.
- The Board of Management exercises all the powers of the University not otherwise provided for by the Act, the Statutes, the Ordinances and the Regulations for the fulfilment of the objectives of the University. The Board of Management shall meet at least once, in every three months.

**(C) The Academic Council**

The academic council shall:

- a) exercise general supervision over the academic policies of the University and to give directions regarding methods of instruction, evaluation or research or improvement in academic standards;
- b) consider matters of general academic interest either on its own initiative or on a reference from the Planning Board or a Department/School of studies or the Board of Management and to take appropriate action thereon; and
- c) Frame such regulations as are consistent with the Statutes and the Ordinances regarding the academic functioning of the University, including discipline, admissions, award of fellowships and studentships, fees and other academic requirements.
- d) The academic council shall meet at least once, in every four months.
- e) The academic council shall draw up a list of experts/professionals to be members of selection committees constituted under Clause 16(2) and 16(3). Such a list of experts/professionals shall be submitted to the Government, through Secretary, Department of Training & Technical Education and as may be required by the Government, experts/professionals would be dropped/ substituted in the list drawn up by the academic council.

**(D) The Planning Board**

- a) The Planning Board shall consist of the Vice-Chancellor and not more than six members to be nominated by the Board of Management.
- b) All the members of the Planning Board, other than the Vice-Chancellor, shall hold office for a term of three years.
- c) The Planning Board shall design and formulate appropriate plans for development and expansion of the University, and it shall, in addition, have the right to advise the Board of Management and the Academic Council on any matter which it may deem necessary for the fulfilment of the objects of the University.
- d) The Planning Board may constitute such committees as may be necessary for planning and monitoring the programmes of the University.
- e) The Planning Board shall meet at such intervals as it deem expedient, but it shall meet at least twice in a year.

**(E) The Finance Committee**

- a) The Finance Committee shall develop financial policies of the University and to oversee the revenues and expenditures of the University.
- b) The Finance Committee shall make recommendations on generating revenues through the University's activities and these recommendations of the Finance Committee shall be placed before the Board of Management for a decision.
- c) The Finance Committee shall make recommendations on improving the operational efficiency of the University's activities, measures for revenue generation, and on major expenditure proposals of the University, as may be required by the Board of Management.
- d) The Controller of Finance shall be the ex-officio Member-Secretary of the Finance Committee.
- e) The annual accounts and the budget of the University prepared by the Controller of Finance shall be placed before the Finance Committee for approval before being submitted to the Board of Management.

**5.3.2 OFFICERS OF THE UNIVERSITY AND THEIR RESPONSIBILITY**

The authority, responsibility and interrelationship of personnel/bodies managing, performing and verifying all activities affecting quality of instruction, evaluation and other aspects of functioning of the University have been defined in the Delhi Technological University

1648/c  
along ...  
Act, 2009 (Delhi Act 6 of 2009), Statutes, Ordinances and Administrative Orders.

The responsibilities of some of the key personnel managing the QMS are listed below:

**(A) VICE-CHANCELLOR**

- The Vice-Chancellor is ex-officio Chairperson of the Board of Management, the Academic Council, the Planning Board and the Finance Committee.
- Vice-Chancellor ensures that the Act, the Statutes, the Ordinances and the Regulations are duly observed and he has all the powers necessary to ensure such observance.
- The Vice-Chancellor exercises control over the affairs of the University and shall give effect to the decisions of all the authorities of the University.
- The Vice-Chancellor has all the powers necessary for the proper maintenance of discipline in the University and he may delegate any such power to such officer or officers as he may deem fit.
- The Vice-Chancellor is empowered to grant leave to any officer of the University and make necessary arrangements for the discharge of the functions of such officer during his absence.
- The Vice-Chancellor has the power to convene or cause to be convened the meeting of the Court, with the approval of the Chancellor, and the meetings of the Board of Management, the Academic Council, the Planning Board and the Finance Committee.
- The Vice-Chancellor has the power to make short-term appointments, with the approval of the Board of Management, for a period not exceeding six months, of such persons as he may consider necessary for the functioning of the University.

**(B) PRO-VICE CHANCELLOR**

- Pro Vice-Chancellor assist the Vice-Chancellor in respect of such matters as may be specified by the Vice-Chancellor in this behalf from time to time and also exercise such powers and perform such functions as may be delegated to them by the Vice-Chancellor.
- The appointment of Pro Vice-Chancellor is co-terminus with Vice-Chancellor

**(C) REGISTRAR**

- Registrar has the power to take disciplinary action against such of the employees, excluding teachers, as may be specified by the Board of Management by general or special order made in this behalf.
- In cases where an inquiry discloses that a punishment beyond the powers of the Registrar is called for, the Registrar consequent to the inquiry, makes a report to the Vice-Chancellor

along with his recommendations for such action as the Vice- Chancellor may deem fit, provided that in such a case an appeal shall lie to the Board of Management against an order of the Vice-Chancellor imposing any penalty on an employee.

- The Board of Management designates a Registrar to act in one or more of the following capacities:
  - i. Secretary to the Court.
  - ii. Secretary to the Board of Management
  - iii. Secretary to the Academic Council.
  - iv. Secretary to the Planning Board.
- Registrar is in relation to the authority concerned-
  - i. is the custodian of the records, the common seal and such other properties of the University as the Board of Management may commit to his charge;
  - ii. issues notices and convene meetings of that authority and the committees appointed by it;
  - iii. keeps the minutes of the meetings of that authority and the committees appointed by it;
  - iv. conducts the official proceedings and correspondence; and
  - v. Supplies to the Chancellor a copy each of the agenda of the meetings of the authorities of the University as soon as it is issued and the minutes of such meetings.
- Registrar may be designated by the Vice-Chancellor to represent the University in suits or proceedings, by or against the University, sign powers of attorney, verify pleadings and depute his representative for the purpose.
- Registrar holds and manage the properties of the University, including trust and immovable properties, for fulfilling any of the objects of the University.
- Registrar ensures that the registers of properties of the University are maintained properly and that stock checking is conducted of the equipment and other material in the offices and branches of the University including colleges and the institutions maintained by the University.
- Registrar performs such other functions as may be specified in the Statutes, Ordinances or Regulations or as may be required from time to time by the Board of Management or the Vice-Chancellor.



1646/c

**(D) CONTROLLER OF FINANCE**

- The Controller of Finance exercises general supervision over the funds of the University and advise it as regards its financial policies and perform such other financial functions as may be assigned to him/her by the Board of Management or as may be prescribed by the Statutes or the Ordinances, provided that the Controller of Finance shall not incur any expenditure exceeding three lakh rupees or such other amount as may be fixed by the Board of Management, without the prior approval of the Competent Authority.
- Subject to the control of the Vice-Chancellor and the Board of Management, the Controller of Finance –

- a) ensures compliance of financial rules and regulations as prescribed by the University;
- b) is responsible for proper and timely investment of University funds with the approval of the Vice-Chancellor;
- c) is responsible to get formats of books of accounts approved by the finance committee;
- d) is responsible for getting internal and external audit of the books of accounts of the University;
- e) sees that the limits fixed by the Finance Committee for recurring and non- recurring expenditure for a year are not exceeded and the money is expended or spent for the purposes for which it was granted or allotted;
- f) is responsible for the preparation of the annual accounts and the budget of the University and for their presentation to the Board of Management after they have been considered by the Finance Committee;
- g) keeps a constant watch on the cash and bank balances and investments;
- h) watches the progress of collection of revenues and advise on the methods of collection employed;
- i) brings to the notice of the Vice-Chancellor any unauthorized expenditure or any other financial irregularity and suggest appropriate action against person at fault; and calls from any office of the University, including colleges maintained by the University, any information or report that he/she may consider necessary for the performance of his functions.

Any receipt given by the Controller of Finance or by the person or persons duly authorized in this behalf by the Board of Management shall be sufficient discharge for payment of moneys to the University.

## **(E) CONTROLLER OF EXAMINATIONS**

### **Pre-Examination work:**

- Course Registration by the students.
- Handling requests by the students for course/subject change.
- Preparation of schedule/date-sheet of Examinations for Mid Semester, End Semester, Makeup Examination.
- Appointment of Paper-setters, Examiners, Tabulators, Moderators and Scrutinizers for all the examinations.
- Appointment of Center Superintendent and Coordinator of Central Evaluation, Fixing of venue of Central Evaluation Center.
- Making arrangement for advances to the University Departments for conduct of various exams.
- Receive Question Papers from Paper Setters.

### **Conduct of Examination**

- Arrangement for Vigilance Squads for visiting centers/halls
- Visit various examinations centers/halls.
- Arrangement for collecting the answer books from the various examinations centers/halls.
- Receive the report of the unfair means cases reported by the Superintendent from the examination centers/halls.

### **Post Examination work**

- Carry out the work of assessment of answer books by the examiners in Central Evaluation Centre and collect the award sheets submitted by them there itself for onward transmission to Result Section.
- Receive the Practical/Project examinations Award sheet from the concerned department.
- Feed the awards/grades into the Results Processing System
- Generate tabulations sheets and get verified by the tabulators
- Generate moderation sheets and moderate the results as recommended by the committee
- Declare results of various examinations and uploading on University Website

1644/c

- Make the arrangement for distribution of degrees
- Make arrangement of the answer books received from the Central Evaluation center and preserve the record of examination
- Deal with the cases of Unfair means, lapses on the part of the students
- Generate and print mark sheets of declared results and handover to the respective sections.
- Issue Duplicate mark sheet required if any
- Prepare and declare consolidate result of the candidates who fulfill the requirements for the award of degree
- Print and generate consolidated mark sheets
- Print degree, scroll, etc. for convocation
- Process bill related to examination activities
- Verification of Mark sheets/Degrees
- Provide data related to Examinations requested by various stakeholder

**(F) DEANS**

The Deans are the head of the functional cluster assigned to them and are responsible for the conduct and maintenance of the standards of work in the functions assigned to them. The Deans perform such other functions as may be prescribed by the Ordinances. The Deans have the right to be present and to speak at any meeting of the Board of Studies or a committee of the Department/School but shall not have the right to vote there at unless he is a member thereof.

**DEAN ACADEMICS (UG)**

- a) Admission of students at UG level
- b) Design and Development of Instructional Process
- c) Framing and revising rules and regulations pertaining to academic through Academic Council
- d) Preparation & distribution of academic Calendar and central time table
- e) Decisions regarding offering of backlog courses
- f) Granting semester leave on genuine grounds to the students as per University rules and regulations
- g) Maintenance of records of UG admissions, verification of documents from issuing authorities.

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- h) Printing and issuing of ID cards to UG students
- i) Dealing correspondence pertaining to Foundation electives, AECs, VACs, Research Project, Mini Project, Entrepreneurship, MOOCs, Minors
- j) Conduct of Mid and end semester Makeup Examinations
- k) Monitoring of attendance of students and annual academic fees of UG students
- l) Responding to RTIs, Student Grievances at UGC portal.
- m) Monitoring and extending of various Scholarship schemes, merit scholarship and fee concession at UG level.
- n) Conduct of orientation programme and Convocation for UG students of the University
- o) Preparation of various certificates, provisional, Bonafide, Character, Migration, Fee structure, Transcripts for students
- p) Extending financial assistance on conferences/competitions/academic activities/internship
- q) Issuing of schedule for distribution of Mark sheets, degrees, and Identity cards
- r) Financial assistance to students for travel grant for presenting research paper/ poster in National/ International Conference

**DEAN ACADEMICS (PG)**

- a) Admission of students at PG level
- b) Admission, progress monitoring and evaluation of Ph.D. candidates.
- c) Design and Development of Instructional Process
- d) Framing and revising rules and regulations pertaining to academicsthrough Academic Council
- e) Preparation & distribution of academic Calendar and central time table
- f) Registration of students at the beginning of each semester
- g) Decisions regarding offering of backlog courses
- h) Approval of examiners for various examinations at under-graduate and post-graduate levels
- i) Granting semester leave on genuine grounds to the students as per University rules

1642/c

- and regulations
- j) Granting extensions etc. in the time period for submission of Seminar, and/or Thesis of M.Tech., and Ph.D. as per University rules and regulations
  - k) Scrutiny and recommendations for Excellence in Teaching award
  - l) Financial assistance to students for travel grant for presenting research paper/ poster in National/ International Conference

#### **DEAN (IRD)**

- a) Promotion of Research Activities in the University.
- b) Initiating, submission and follow-up of project proposals to sponsoring agencies and timely completion of the sponsored projects.
- c) Protection of IP created in the University and commercialization.
- d) Develop the strategies to foster research collaborations within faculty across institutions/industries and other organisations.
- e) To invite proposals from faculty for research grant and process for grant of research funds at University level.
- f) Policy matters related to plagiarism, copyright, royalty etc.
- g) Scrutiny and recommendation for research excellence awards, citation awards, patent awards etc. in the University.
- h) Framing guidelines and monitoring of implementation of NEP-2020.

#### **DEAN (STUDENT WELFARE)**

- a) Welfare of students in the University, their conduct, discipline, seriousness to studies, health, scholarships, fee concessions etc.
- b) NSS programmes and financial support to NSS activities
- c) Nominations/Elections for the posts of Class Representative/Student Association
- d) Formation of and financial assistance to Cultural, Technical and Sports Councils
- e) Financial assistance to Innovation Teams
- f) Financial assistance to students for participation in sports, literary, technical and cultural activities
- g) Industrial visits of academic departments

#### **DEAN (INTERNATIONAL AFFAIRS)**

- a) Admission of the foreign national students
  - Direct mode

1641/c

- Through ICCR
  - Through DASA
- b) Mobility of faculty for promotion and branding.
  - c) Signing of MoUs with International Institutions.
  - d) Facilitation to students and recommendation of internship in abroad.
  - e) Enhancing international research and academic collaboration, faculty and student exchange programs, establishing networking with reputed institutions.
  - f) creating opportunity for our own faculty and students through creation of meaningful MoUs, admission of foreign students and establishing brand DTU globally to name a few.
  - g) Promotion of relationship between Foreign Universities/Institution through signing of Memoranda of Understanding (MoUs) related to Faculty and student exchange programme and providing an opportunities to the foreignnational students for study in DTU under UG/PG and Ph.D programmes.

#### **DEAN (OUTREACH and EXTENSION ACTIVITIES)**

- a) Provides leadership for the organization, content, and effectiveness of extension and outreach programs in the University.
- b) Represents University to external stakeholders and to Extension/outreach partners.
- c) Encourages and supports development of new outreach programme that addresses emerging issues and opportunities.
- d) Encourage innovation and excellence in Extension/outreach programme of the University.
- e) Perform University and community service as appropriate.

#### **DEAN (DISCIPLINE)**

- a) Promoting/Maintaining state of Order/Discipline among the Student community in the University campus.
- b) Spreading awareness about the rules and regulations related to disciplinary matters among the students of the University.
- c) Addressing issues of complaints about any indiscipline, received by students.
- d) Calling meeting of Board of Discipline, if needed and impose punishment (as per the provisions), if the Board agrees.

- 1640/c
- e) Issuing guidelines for maintaining Order/Discipline, during students Fests/Program/Special Occasion etc.
  - f) Preparation and updation of Code of Conduct for the Students (time to time as required).

#### **DEAN (PLANNING AND CONSULTANCY)**

- a) Formulation of policy related to all types of consultancies and its execution.
- b) Monitoring and record keeping of different consultancy and funded research projects being executed by the University.
- c) Planning and monitoring of different infrastructural projects, upgrading of existing infrastructure and coordinating meetings of Planning Board.
- d) Recruitment/engagement of consultant/project staffs.
- e) Coordinate faculty level workshops/seminars on research related issues.
- f) To facilitate growth of research activity in the faculty including development mechanism and targets to achieve.
- g) To establish a central facility for material testing in the University.
- h) Any other matters assigned by the Competent Authority from time to time.

#### **DEAN (ALUMNI AFFAIRS)**

- a) Maintain Relation with Alumni through regular communication and interaction.
- b) Connect with Alumni for creating new infrastructure, starting new initiatives like creation of Centre of Excellence, sponsored research projects, and supporting entrepreneurship related initiatives.
- c) Connect with Alumni for establishing scholarship, medals and other student welfare related initiatives.
- d) Arranging research grants to students for their activities and to the faculty in areas of global significance.
- e) Collaborate with alumni for initiatives related to students like upskilling, and mentorship program for existing students.
- f) Celebrating Alumni Meets (Reunions) and enhancing Alumni engagement activities.

#### **DEPARTMENT HEADS**

The Head of Department shall be responsible for the management, growth and quality of the department's teaching, research and student support services.

**a) Vision and Leadership**

- i. To develop and implement a strategic plan in line with the strategic plan of the University.
- ii. To take responsibility and accountability for setting and advancing the strategic plan of the department.
- iii. To be actively involved and contribute as a member of the academic council.
- iv. To develop an appropriate structure for management, decision-making, and communication with students, faculty and staff.
- v. To support and develop interdisciplinary activities and research.
- vi. To support and assist the Vice Chancellor in various activities for the growth and development of the University.
- vii. To administer day-to-day activities of the department, organize and conduct department meetings, and constitute committees for smooth functioning of the department.
- viii. To organize and conduct meetings of Board of Studies of the department.
- ix. To carry out his/her responsibility in a timely manner.
- x. To promote and represent the University internally and globally.

**b) Program and Students**

- i. To provide students with the best possible learning experience in the department.
- ii. To develop new programs and courses in emerging and important areas.
- iii. To ensure the students' participation at various levels of decision making in the department.
- iv. To revise the curriculum from time-to-time.
- v. To address student concerns by appointing mentors, providing guidance and resolving problems

**c) Research and Innovation**

- i. To promote research and create a research environment in the department for both teachers & students and to ensure the highest levels of quality and ethics in research.
- ii. To collaborate with industries and explore opportunities for getting projects in the new areas of teaching and research .
- iii. To provide opportunity and engage students in innovative projects.



1638/C

b) Facult

**d) Human Resource Management**

- i. To ensure the performance of the teachers and staff in the department and fair distribution of workload.
- ii. To create a culture of cooperation, respect, and excellence in academics within and outside the department.

**e) Finance and Infrastructure Management**

- i. To take responsibility for departmental budget including infrastructure and equipment purchase plans and manage them effectively, complying with the University finance rules.
- ii. To develop facilities such as classrooms, laboratories, equipment in the department.
- iii. To facilitate knowledge and information network for the advantage of teachers, staff and students of the department.
- iv. To monitor the condition of the infrastructure of the department and informing the administration whenever necessary.

**f) Quality Assurance**

- i. To ensure that all activities are carried out in the highest possible standards and ensure that there is an improvement in the teaching and learning processes.
- ii. To comply with quality audits and standard operating procedures of the University.
- iii. To ensure the health and safety of students, teachers, and staff.
- iv. To adhere to the rules and regulations of the University.

In addition to the above roles and responsibilities, the Head of Department shall perform such functions or activities as assigned by the Vice Chancellor from time-to-time.

**HEAD OF CENTRES**

- a) Efficient functioning and prompt discharge of the responsibilities assigned to the centre as per their documented system.
- b) Effecting pro-active & reactive improvement in the centre.
- c) Maintenance of documents, records and physical infrastructure.
- d) Active participation in continuing education programmes.

The activities of each Centre differ widely depending upon their role and responsibilities.

**HEAD (CONTINUING EDUCATION)**

- a) Overall planning, direction, organization, and implementation of the educational programs of adult and continuing education.

- b) Faculty development programme, Short-term training programme, Seminar, workshop, conference, symposium etc.

**OFFICER IN-CHARGE, CENTRAL WORKSHOP**

- a) Imparting basic technical knowledge and developing requisite skills in various manufacturing processes e.g. Machining, metal Casting, Smithing, and Forging, Sheet Metal Work, Welding and Fitting etc.
- b) Providing on-the-job training to students covering practical, managerial and commercial aspects of manufacturing
- c) Guiding and assisting UG/PG students and research scholars to apply knowledge of manufacturing processes and workshop practices in fabrication and assembly of various experimental rigs and set-ups required in their Research/Project and Professional work.
- d) Modernization and up gradation of infrastructural facilities
- e) Take care of various hazards of workshop and apply various standard safety procedures.

**HEAD, TRAINING AND PLACEMENT (T&P) CELL**

- a) Organizing Campus placement of students.
- b) Promoting Industry-University-Interaction.
- c) Assisting the departments in the placement of students in public/private sector undertaking for project semester and summer term training, if required.
- d) Collecting feed-back from Industry about performance of students employed and transmitting the same appropriately for reactive corrections.
- e) Collecting information regarding offering of various continuing education programmes, sponsored/ in-house short-term courses, winter/ summer schools, workshops etc. and transmitting the same to industries/ institutions/ users through brochures.

**CEO, DTU INCUBATION AND INNOVATION FOUNDATION**

- a) Promote start-ups by creating incubation infrastructure, friendly policy for start-up funding, use of start-up products in govt. sector, start-up spaces and marketing support programs for start-up
- b) Changes to current curricula with the aim of developing entrepreneurship in students- “catch them young”.

1636/c

- c) Include entrepreneurship as a subject/ add-on course/ elective in Institutions.
- d) Conduct entrepreneurship boot camps during summer to encourage students participate in entrepreneurial activities.
- e) Offer start-up founders the option to participate in placement in the year after graduation to increase risk-taking ability.
- f) Offer incentives to faculty for risk-taking and start-up incubation/ commercialization of technology.
- g) Conduct Boot Camps for start-ups, Business Plan competition etc. where the winners get a chance to utilize the incubation centres being set-up.
- h) Create entrepreneurship challenges based upon existing problems to foster Innovation.
- i) Develop a mentorship body to provide support to entrepreneurs; partner with ecosystem players as possible.
- j) Create entrepreneurship clubs amongst the student community.

#### **LIBRARIAN**

- a) Acquisition, stocking and display of books, journals, back volumes, national/international standards, CD-ROM, databases, audio and video cassettes, etc.
- b) Cataloguing the acquired library material
- c) Ensuring smooth access, issue and return of library material as per documented procedures.
- d) Providing reprographic facility for reference material.
- e) Maintenance of library equipment and material.
- f) Annual physical stock verification of library material.
- g) Inter library networking for library and information services to users.
- h) Organising information literacy program/ user awareness program

#### **HEAD, COMPUTER CENTER**

- a) Ensuring the availability of computing facilities as required by the users.
- b) Continuous modernization and upgradation of the computing facilities as per the latest technology.
- c) Creating world class physical infrastructure and its maintenance through preventive and corrective maintenance.
- d) Extending services for purchase and installation of IT related instruments/ equipment/devices by Departments.

- e) Offering consultancy to outside organizations.
- f) To coordinate with internet service providers for the delivery of high speed internet services.
- g) Ensure smooth functioning of ERP system.

### **CHIEF WARDEN**

- a) To have overall supervision of hostel matter.
- b) To decide all policy matters regarding hostels.
- c) To allot hostel accommodation.
- d) To assign/distribute works to subordinates.
- e) Any other matter related to Hostel/ Hostel Office as per hierarchy.
- f) Any other work assigned by the VC.
- g) Principal authority for hostels.
- h) Discretionary powers for any matter related to all the hostels.
- i) To recommend appointment of HOI/Wardens.
- j) To appoint Assistant Warden
- k) To constitute committee for various tasks/procedures related to hostel matters.
- l) To chair Hostel Purchase Committee
- m) To chair Hostel Warden Council
- n) To chair Hostel Allotment Committee (HAC)

### **OFFICER IN-CHARGE, HEALTH CENTRE**

- a) Providing preliminary medical services to the University community and if need be to refer them to the specialists
- b) Training the campus community for healthy living as well as extending preliminary medical aid in times of emergency
- c) Participating in special health drives for prevention/ eradication of various diseases.

**DIRECTOR IQAC**

- a) Preparation and control of quality system documents
- b) Organizing training in quality system, ensuring that the employees understand the quality policy, objectives and working of the installed quality system.
- c) Planning and implementation of internal quality audits.
- d) Maintaining the quality system & reporting on its functioning; implementation of all corrective and preventive actions
- e) Liaison with the external agencies/bodies on matters related to quality system
- f) Arranging for Management Reviews.
- g) Maintenance of Records of the operative Quality System and its constituent documents.
- h) Holding Management Review Meetings and updating the Quality System.
- i) Coordination for NAAC accreditation of University.
- j) Coordination for NBA accreditation of the programmes offered by different departments of the University.
- k) Coordination of all Quality initiatives on behalf of the University.
- l) Feedback collection from students and other stakeholders and its analysis.
- m) Scrutinizing application of the teachers for promotion under Career Advancement Scheme
- n) Coordination for All India Survey on Higher Education (AISHE)

**DIRECTOR EQUAL OPPORTUNITY CELL**

- a) Organizing expert lectures on awareness regarding Equal Opportunity Cell in DTU.
- b) Organizing lectures, seminars, workshops on relevant topics like sexual harassment and gender-based discrimination against women, issues of contemporary significance for empowering, educationally and culturally, students belonging to the marginalized sections and promote awareness on such issues among students and teaching staff.
- c) Assisting students from deprived sections, financially for participation in national, international academic events.
- d) Organizing remedial classes for improving the academic performance of students from SC, ST, OBC, women and persons with disabilities (whether at undergraduate, postgraduate, PhD or other levels) and/or to monitor the implementation of such programs/schemes.
- e) Providing help or assistance in mid and end semester examination like writer, additional

invigilator etc.

- f) Counseling and training the deprived section of students to boost their morale, confidence, self-respect and inculcate values.

**DIRECTOR (PHYSICAL EDUCATION)**

- a) Maintenance of various grounds of sports i.e. indoor and outdoor games.
- b) Organize various tournaments inside campus and outside campus.
- c) Conduct Training Program for various games.
- d) Conduct coaching camp for various games.
- e) Provide facilities to students in respect of sports items.
- f) Purchase of sports related items.
- g) Organize State, National and International sports conference.
- h) Liason with administration and student.
- i) Maintain record and registers of sports department.

**DIRECTOR (HRDC)**

- a) To identify resource persons in various fields of specialization for organizing orientation programs and refresher courses as per requirement, and familiarizing resource persons with the philosophy and guidelines for the courses.
- b) To organize leadership-oriented programs for senior administrators, Heads of departments, Deans and other decision-makers to familiarize them with the philosophy of orientation intended to facilitate reforms in higher education through appropriate modification of the management systems at various levels.
- c) To undertake pedagogical and technical (in association with technical departments) teacher training programs, as per the requirement of the departments, to keep teachers updated on the latest developments and teaching methodologies.
- d) To create a culture of learning and self-improvement among teachers and ensuring they stay updated with educational advancements and contribute to a dynamic and innovative environment, as an integral part of the educational system.
- e) To provide opportunities for in-service teachers to exchange experience with peers and promote mutual learning and the sharing of best practices for continuous improvement in teaching and learning strategies.

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#### **DIRECTOR (EAST DELHI CAMPUS)**

- a) Coordinating in all matters related to functioning and resources of East Delhi Campus, with Competent Authority and other functionaries and leadership at DTU (Main Campus).
- b) Coordinating with HOD(s) at East Delhi Campus, USME and other centers such as Entrepreneurship Development Center, EDC-IIF, ODC, and any other upcoming Centers and activities, for all academic and other matters, events, etc.
- c) Streamline and coordinate with various DTU functionaries for administrative matters including Estate, Security, Staff and Faculty matters.
- d) Forwarding and receiving authority for all communications related to East Delhi Campus activities and academics.
- e) Use of delegated financial powers for smooth functioning of East Delhi Campus as approved by Competent Authority, including matters relating to approvals of Expenditure Sanction of guest lectures, experts etc. and Administrative Approval in other matters as approved in BoM earlier/in future.
- f) Appointment of guest faculty and other matters along with HoD(s) at USME, and function as head of school if more department are created, till suitable arrangements are approved and implemented.
- g) Overall coordination and execution of matters at East Delhi Campus as directed by Competent Authority

#### **DIRECTOR (RECRUITMENT)**

- a) The recruitment Branch is headed by Director (Rectt.) and he/she supervises all the activities of recruitment Branch
- b) Co-ordinate all the activities related to recruitment matters of the University and/or any other recruitment matters deemed fit by the competent authority of the University.
- c) Convenes the meeting of the Committee for recruitment related matters.
- d) Administrative approval/directions/recommendations on the proposal submitted by recruitment Branch.
- e) Supervise the work of Recruitment Branch.
- f) Distribution of work to the dealing assistant.
- g) To get maintained records of the Recruitment Branch.
- h) Channel of Supervision.

- i) Custodian of records of Recruitment Branch.

**DIRECTOR (WORLD CLASS SKILL CENTRE)**

- a) Supervise administrative and academic activities of the centre which may include but not limited to programs development, program review, curriculum development, policies and regulations, facility management, staff engagement, budget plans and general supervision of the teams, services, and activities of the centre.
- b) Creating key performance indicators (KPI) to help employees to focus their efforts.
- c) Managing all aspects of the employees of the centre and is responsible for performance management.
- d) To maintain quality of the instructions and extension programs conducted by the centre.
- e) To initiate the proposals for skill related courses depending upon the requirements from the community and availability of space and funds allocated.
- f) To ensure all-academic plans, promote excellence in teaching and professional activities.
- g) To foster collaborative relationships with key stakeholders and partners in teaching, research and knowledge exchange.
- h) To collaborate and sign active MoUs with relevant industries/organizations for practical exposure to students of centre.
- i) To engage the startups and incubators in terms of mentor and mentee in the teaching-learning process.
- j) To foster a culture of excellence, co-operation and respect, drives a commitment to equality diversity and inclusion for all students, staff and other stakeholders.
- k) To adopt National Skill Qualification Framework (NSQF) policy for all the skill courses and strengthen the employability skills and ensure all skill programs enables the youth to be employable and market ready.
- l) To implement mentoring program to establish a centre for continuous learning.
- m) To maintain the general discipline in r/o staff and students of the centre.
- n) To manage and motivate centre staff, to enable the students to receive skilled education in the subject, in a positive, encouraging and effective working environment.
- o) Act as chairperson, board of studies, DPC and other high-level committee constructed time to time for WCSC.



1630/c

(b)

**DIRECTOR (NCEET)**

- a) Administration of centre through Heads of each Technical Divisions and of Enterprise Management Division being section 8 company of DTU
- b) Scouting networking opportunities, doing MoUs and their execution.
- c) Revenue generation/ acquiring Grant-in-Aids from Govt. depts./their Societies/ PSUs/CSR of Industries along with Heads of Division and Enterprise Management cell for the activities of NCEET.
- d) Scouting opportunities for supporting Training and Capacity building in the area of energy transition for Govt Dept/PSUs/Industries/MSME/ Startups/ITI & Technicians/NGOs etc.
- e) Scouting opportunities from Industry and MSME by interfacing and supporting R&D for load manufacturing and specialized training of their staff/scientist/ officers.
- f) Establishing new multidisciplinary academic programs and courses for academic's ecosystem of the University in collaboration with NCEET team
- g) Propose and monitor the development of specialized research laboratories for staff and students of the University.
- h) Scouting opportunities for Testing and Certification for cutting edge Technologies.
- i) Providing support of Governance and Policy making to different Govt. agencies in association with Heads of each Technical Divisions and of Enterprise Management Division.
- j) Facilitation of International Collaboration for Joint research projects, exchange of highly skilled scientific/technical manpower etc.

**DIRECTOR (CCDR)**

- a) The office of CCDR is headed by the Director (CCDR), who supervises and coordinates the activities of the CCDR office, along with any other work assigned by the Vice Chancellor, DTU.

**MANAGEMENT REPRESENTATIVE (M.R.)**

The Vice Chancellor appoints Management Representative (MR) who over and above his responsibilities is assigned the responsibility and authority for:

- (a) Establishing, implementing and maintaining a quality system in accordance with ISO9001:2015 requirements and coordinating different functions and activities

1629/c

within the University in the said regard.

- (b) Reporting the performance of the quality system to the University management for periodic review & improvement.
- (c) Ensuring the promotion of awareness of students and employing industry's requirements throughout the University.
- (d) Liaison with external agencies on matters relating to the quality of Instructional System at DTU.

## 6 PLANNING

### 6.1 ACTIONS TO ADDRESS RISKS AND OPPORTUNITIES

University has mechanism in place to address the risk in all the processes important for achieving the set objectives. This includes identifying the risk, eliminating the risk, converting a possible risk into opportunity and retaining it by informed decision. Each department has identified the risk and documented it in its SOP along with actions needed to address the risk.

The University sees the changing customer requirement as an opportunity to adopt new practices, launching new courses, collaborating with new organization/ institutions, using latest technologies, opening new centres. This strengthens the University and also satisfy the customer's needs. University management is committed to address the opportunities arising from any source to achieve improvement, enhance output to assure the intended results from the Quality management system in place.

### 6.2 QUALITY OBJECTIVES AND PLANNING TO ACHIEVE THEM

University has well documented Quality objectives as listed below.

- To produce highly skilled, analytic and proficient technocrats, and management professionals.
- To develop a new knowledge base for research and innovation.
- To develop academia-industry relations to fulfil the technological need of mankind for current and future perspective.
- To develop human potential with analytic ability, ethics, social values, and integrity.
- To assess and provide environment-friendly reasonable and sustainable technology for local and global needs.

1628/c

- To act as a facilitator for incubation, product development, transfer of technologies and entrepreneurship.
- To develop and inculcate knowledge, skills and right attitude with responsibility, commitment, professionalism, moral & ethical standards amongst everyone in the campus.
- To establish centers of excellence in emerging areas of science, engineering, technology, management and allied areas.

The University management has ensured that the quality objectives are established at various levels and departments of the University. These objectives are measurable and consistent with quality policy of the University. The quality objectives of the University as well as the indicators/procedures of their measurement and monitoring are given below in Table 2.

**Table 2: Organizational quality Objectives with means and measures**

S. No.	Quality Objectives	Means to achieve Objectives	Measurement Criterion/ Indicators
1.	To produce highly skilled, analytic and proficient technocrats, and management professionals.	Updated Syllabus, Innovative Teaching, State-of-art Laboratory, Equipment, Software, Experts Lectures, Project based Learning, Internship	Academic performance, Placement record, Recruiter's/industry feedback
2.	To develop a new knowledge base for research and innovation.	State-of-art Research Facilities, Highly augmented Library and enriched e- resources, Research Grant, Recognition & Award by University, Innovation & Incubation Center, IP Protection	Number of research paper published in International Journals and Conferences of high repute, Number of books published, Number of patent filed/granted, New start-ups, sponsored projects

3.	To develop academia-industry relations to fulfil the technological need of mankind for current and future perspective.	MoU with industry/Organizations and Academic institutions of National/ International Importance, Industrial Visits/ Training, Workshops by Industry Experts, Technical Festival organized by University, Technical Societies, Industry representation in BOS, AC and BOM.	Number of MOUs, Industry visits by faculty & students, companies visited for training and placement, Consultancies to the industry / organizations, visits by Industry Experts to University
4.	To develop human potential with analytic ability, ethics, social values, and integrity.	Centre for Human values, Cultural festival, Technical festival, Sports meet, Literary festival, Student Societies, Yoga and meditation camps, Motivational Lectures by renowned persons, Humanity oriented curriculum, NSS, Blood donation camps	Number of programmes organized by students/faculty for society
5.	To assess and provide environment-friendly reasonable and sustainable technology for local and global needs.	Development of Solar Systems, Dedicated department for study of environmental study and research, water treatment plant, solid waste management, Bio-energy plants, food waste to energy plant, Environmental testing services to various departments, Society of	Air quality index, Quantity of alternate/Bio fuel produced, Solar Power generated, Amount of waste recycled, number of consultancy provided by Environment department

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		alternate transportation.	
6.	To act as a facilitator for incubation, product development, transfer of technologies and entrepreneurship.	DTU Innovation & Incubation Foundation, IPR Cell, Research on new product development, MOU with Industry, Centre for Entrepreneurship.	New start-ups, Number of patents filed/granted, Number of MOU with Industry, programmes organized by E-Cell
7.	To develop and inculcate knowledge, skills and right attitude with responsibility, commitment, professionalism, moral & ethical standards amongst everyone in the campus.	Development of skill centers, Guest Lectures and workshops on Ethics and professionalism, Dedicated courses related to Ethics and professionalism run by Department of Humanities, DTU. Software to check and discourage plagiarism in research content writing, Ethics Committee.	Amount of fund invested in incubation and skill centers, Participations in Ethics and professionalism lectures and workshops, Number of plagiarism cases reported.
	To establish centres of excellence in emerging areas of science, engineering, technology, management and allied areas.	Centre of Excellence, Generating resources/funds from the University/ Govt./ Industry, Sponsored Projects, Research Grants, Providing Expertise for identification and feasibility study of emerging and future area of science, engineering, technology, management and allied areas.	Number of center of excellence, Output / Developments in existing Center of excellence, Number of research paper published and patent filed in emerging areas.

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## 6.3 PLANNING OF CHANGES

The University management has ensured that

- The effective planning of the Quality Management System (QMS) is carried out to meet the requirements of the standard pertaining to identification of processes, their sequence and interaction, determining effective criteria for operation and control, ensuring resource availability, monitoring, measuring and analysis of data, implementing actions and continual improvement of the system.
- The changes, wherever these are made to the Quality Management System (QMS) are as per a documented procedure, which ensures that the integrity of the QMS is maintained.

## 7. SUPPORT

### 7.1 RESOURCES

#### 7.1.1 GENERAL

The University estimates the resources needed for the implementation, management, and continual improvement of Quality Management System and its activities to meet the stakeholders and customers satisfaction. As an internal mechanism for sustenance, assurance and enhancement of the quality culture of education, the University has established the Internal Quality Assurance Cell (IQAC) for maintaining the momentum of quality consciousness. IQAC, in fact, is conceived as a mechanism to build and ensure a quality culture at the University level to meet the diverse needs of the stakeholders. The IQAC is meant for planning, guiding and monitoring Quality Assurance and Quality Enhancement activities of the University. The IQAC, in coordination with other departments and administration of the University, helps in planning, management review, human resource development, infrastructure development, financial resources etc for each programme, depending upon the number of registered students and the detailed curriculum, the requirements of human and physical resources. The VC and the concerned heads are responsible for provision of needed resources to ensure smooth functioning of each programme. Resources needed for internal quality audits are also ensured by the VC as per need projected by IQAC.

### 7.1.2 PEOPLE

- It has been ensured by the organization that employees including the faculties and staff are competent enough to perform work with quality on the basis of appropriate education, training, skills and experience.
- The University is determined for the development of necessary competence of personnel performing work for every position in teaching and non-teaching categories. The qualifications and experience required as eligibility condition for various positions are established as per the regulatory and funding agencies like UGC, AICTE, Government of NCR Delhi and others.
- Where applicable, training is provided to various categories of employees to achieve the necessary competence in the activities being performed by them. Training needs are determined from time to time based on employees' job rotation, career progression, and change in technology, systems or structure in the University. The University organizes various training program, faculty development program, short term programs, and conferences for the employees and also provides financial assistance to the employees for these activities in other premier institutes. The University has provided personality development funds to the faculties to upgrade their offices meeting world class standards. The University also encourages the research and development activities by providing financial resources and facilities to the faculties, and research scholars.
- After provision of training, feedback on its effectiveness is taken from the participants, resource persons and from the supervisors of the participants. Through the analysis of this feedback, the effectiveness of the actions taken is assessed which serve as a basis for the future actions to be taken.
- The University ensures the quality awareness and consciousness of each person through training programmes, circulars, notices, quality policy, work instructions and meetings. The emphasis is given on that all employees understand the relevance and importance of their activities, and contribute to the achievement of the quality objectives.
- Records of education, training, skills and experience are maintained and updated from time to time by various departments in the University.

### 7.1.3 INFRASTRUCTURE

The University determines the requirements for infrastructure, provides it and is maintaining and upgrading it from time to time. Focus is on meeting the requirements of

instructional process so that quality of instructional design and delivery and in turn professional development of the students is achieved. The Vice Chancellor, Registrar, Chief Project Officer / Estate Officer, Project Officer, Assistant Project Officer, Assistant Engineer, Junior Engineer and supporting staff is responsible for planning, developing, and maintaining the infrastructure of the University.

The infrastructure provided in the University includes:

- i. Buildings include administrative building, academic buildings, departments, centers, classrooms, laboratories, library, computer centre, offices, hostels, workshops, guest house, auditorium, play grounds, multipurpose Hall, indoor and outdoor sports facilities and others.
- ii. Furniture and fixtures in offices, classrooms, hostels and other central facilities etc.
- iii. Support services such as water supply, sanitation, hot water through solar roof top, open gymnasium etc.

#### **7.1.4 ENVIRONMENT FOR THE OPERATION OF PROCESSES**

The University determines the work environment and manages it to fulfil the requirements of performance of various activities in order to achieve quality of instructional process of current and passed out students. This includes both the physical working conditions like lighting, noise, temperature etc. in class rooms, laboratories, workshops, and other places as well as the human relations and working environment. Deans, and respective head of departments are responsible for managing and maintaining the necessary physical, psychological, and environmental factors to achieve the quality objectives. It is the responsibility of the Vice-Chancellor to arrange the necessary resources required for implementing and achieving the quality objectives of the University.

#### **7.1.5 MONITORING AND MEASURING RESOURCES**

University has sufficient resources to monitor and measure the products and services of the University. These resources are maintained regularly and calibrated to ensure their continuing fitness for the purpose of monitoring and measurement. University also maintains the documented information as evidence of fitness for the purpose of monitoring and measurement resources. University also takes appropriate action to replace or repair the resources so that measuring equipment remain fit and work as desired. Measuring equipment is used as per standard procedures to safeguard it from damage, adjustments and deterioration.



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### **7.1.6 ORGANIZATIONAL KNOWLEDGE**

University has in place mechanism and resources to document the organizational knowledge created over the years to achieve the objectives of the University and conformity of its product and services. The organizational knowledge is available on public platforms also for use by its stakeholders. All the intellectual property created in various forms, content created, documented reports are kept safe, secure and accessible. The knowledge gained through various means are being updated regularly.

## **7.2 COMPETENCE**

The persons with necessary competence are recruited in the University based upon stringent recruitment rules approved by the competent authority through a well- documented and approved process. The record of all such recruitment is maintained as evidence. The performance of the employees is assessed regularly and documented information of evaluation is maintained. The employees are regularly provided trainings and supported by continuous learning process for getting appropriate education, skill and competence to achieve more effectiveness in their working and meeting the objectives of the University. University also hires the persons with required competence to support many new processes and initiatives.

## **7.3 AWARENESS**

University has published the Quality Policy on the website and at all the prominent locations to make people aware about it. The Quality Objectives are displayed in respective departments. Training programs are organized to make people aware about benefits of the improved performance due to QMS implementation and their contribution to make QMS effective. The implication of not conforming to QMS requirements is also shared with people on various platforms.

## **7.4 COMMUNICATION**

University adopts open door policy of communication at all functional levels. Top management has ensured that appropriate communication processes are established within the University and that communication takes place regarding the effectiveness of the quality management system. This includes telephone availability to all employees, Internet facility with email ID of all teachers and offices, circulars, officer orders, notices, meetings & reviews.

## 7.5 DOCUMENTED INFORMATION

### 7.5.1 GENERAL

Documents required by the quality management system are controlled in the organization as per the established documented procedure. The scope of the documents includes:

- (a) Data input & output.
- (b) Quality Manual.
- (c) Procedural Manuals including Work Instructions and forms, formats etc.
- (d) Regulatory requirements and documents of external origin.
- (e) Applicable Standards and Specifications.

### 7.5.2 CREATING AND UPDATING

The approval of documents is required prior to use. The responsibility to control various documents has been assigned as under:

- All documents are approved with information to the MR with an aim to maintain uniformity in the whole organization.
- Quality Policy and Quality manual are reviewed by MR and approved by the Vice-Chancellor.
- Documents pertaining to a specific area controlled by the functional head of that area.
- Registrar controls documents of External origin.

The details are specified in the documented procedure for Control of Documents.

The procedure for control of documents addresses the following requirements of the standards.

- (a) Stipulating uniform document coding/ numbering system and to ensure correct identification, access, reference, withdrawal and updating of documents.
- (b) Establishing master list, identifying the current/ revision status of documents.
- (c) Ensuring ready availability of the latest versions of the document at the identified use points through a circulation list and withdrawals and issue procedure.
- (d) Prescribing a standard procedure for removal and disposal of invalid/ obsolete documents as well as identification for retention of any of the obsolete/ redundant documents for further reference/ requirement.
- (e) Release of revised documents to authorized holders as per change control procedures.
- (f) Reviewing and updating documents as necessary and re-approving.

- (g) Changes to the document/ data are to be reviewed by the same functionary of the organization that framed and proved the original documents. The obsolete documents are withdrawn and the revised/ changed document /data provided to all authorized holders updating the master list. The background information upon which the document is changed is maintained. The nature of changes is shown in the document or on the amendment record sheet.
- (h) Identification of documents of external origin for the planning and operation of the Quality Management System and control of their distribution.
- (i) The obsolete documents are prevented from unintended use by removing them from the point of use.

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### 7.5.3 CONTROL OF DOCUMENTED INFORMATION

A documented procedure for control of documents has been established by each department/ branch/ centre to ensure that records are maintained and are accessible, whenever required for effective operation of quality management system. All quality records are maintained by respective functional Heads as defined in laid down procedures and the same are to be controlled, updated and made available by them. The documented procedure includes:

- Identification, collection, indexing, access, filing, storage, maintenance and disposal of quality records after the expiry of specified retention period.
- It is to be ensured that quality records are legible and are stored in such a way that they are easily retrievable, and that there is no damage, deterioration or loss to the records in storage.
- Retention time of quality records has been established and recorded in prescribed format.

## 8. OPERATION

### 8.1 OPERATION PLANNING AND CONTROL

The University has planned and developed the processes needed for transformation of entering students to engineers, managers, entrepreneurs, and professionals. Deans, and respective head of departments are responsible for the implementation and continuation of quality planning as per standards for product realization established by the University. It is consistent with the requirements of other processes of quality management system like management responsibility, resource management and measurement and analysis including

administrative, liaison and supporting activities. The quality planning activity ensures that the product quality is assured throughout the process by identifying, planning, performing and verifying activities affecting quality. Quality planning includes determining the quality objectives and requirements for the product and covers the following:

- (a) Defining, monitoring, and updating of quality objectives and requirements of product or service for meeting these objectives.
- (b) Laying down a scheme to control the instructional process for evaluation of students at various stages.
- (c) Specifying the performance criteria and verification of the processes for successful completion of the process culminating into award of degree/certificate.
- (d) Objective evidence shown through records for the conformity of these processes and their resulting products.
- (e) Planning of state-of-art instructional processes to meet the defined objectives. The requirements of customers may be achieved through the quality procedures, work instructions with matching evaluation and management system to meet quality objectives and process requirements. matching the instructional design and development with the requirements of the customers i.e. students, industry and society at large. matching the resources of good quality operational equipment in the laboratories and availability of other facilities like teaching aids relevant to the instructional design.

## 8.2 REQUIREMENTS OF PRODUCTS AND SERVICES

### 8.2.1 CUSTOMER COMMUNICATION

The University has determined and implemented effective arrangements for communicating with students. The arrangements include information brochure which contains information about all programmes, eligibility criteria, fees and other such details. For feedback including complaints and their redressal, personal visit, telephone and messaging, e-mail, web-portal, post facility is provided and responsibilities are well defined. The University also has dedicated cell for women/differently abled for addressing their issues. The progress/performance including any disciplinary action or attendance shortage is communicated to the parents/guardians of the students. Board of discipline takes all necessary decisions regarding disciplinary activities. The following records of customer related processes are maintained for stipulated time:

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- (i) Brochure
  - (ii) Applications of candidates
  - (iii) Admission and Registration records
  - (iv) MOUs on Consultancy/Test services
  - (v) Feed backs
  - (vi) Answer sheets and project reports
  - (vii) PG/Ph.D. thesis
  - (viii) Training and Placement records

### **8.2.2 DETERMINING THE REQUIREMENTS FOR PRODUCT AND SERVICES**

The customer in this case is student, employing industry, and the society. The curriculum and the delivery processes are designed and transacted in such a way that the requirements of the employing industry are fulfilled. For this, the information is collected from the employing offices from time to time and syllabus along with other activities are planned and designed accordingly. To ensure that the admitted and registered student clearly understand the requirements of their respective programmes and disciplines in order to qualify for the degree for which admitted and registered; information brochure is prepared and the students are advised to read the same. The brochure is provided both in hard and soft copy and is made available on the University website. Hard copy is also provided to the student at the time of registration. The scope includes the selection processes and procedures for admission, registration, fee structure, rules and regulations, and execution of programmes. The brochure provides detailed information about scheme of the courses and availability of respective subjects under each scheme. It clearly provides the information regarding core and elective courses along with number of credits offered by these courses. The University ensures that all courses meet the statutory and regulatory requirements of various national and international agencies including UGC and AICTE. The University is committed to facilitate for industry interaction and summer training to the students.

The University also provide resume services, training in personality management and extracurricular activities for overall development of the students. The University also arranges short-term courses and expert lectures from the outside industry and these activities are also included in the scope of customer related processes. The responsibility of the customer related processes lies with the following:

S. No.	Scope	Responsibility
1.	Information Brochure	Dean Academics (UG/PG)
2.	Admissions (UG)	Chairperson, Admission Committee (UG),
3.	Admissions (PG/PhD)	Dean Academics (PG)
4.	Registration	Dean Academics (UG/PG)/COE
5.	Execution of Programmes	Head of Academic Departments
6.	Continuing Education Programmes	HOD (Continuing Education)
7.	Outreach and extension of activities	Dean (Outreach & Extension)
8.	Research Projects, Consultancy and Testing Services	Dean (Planning and Consultancy)
9.	Health Services	Registrar/OIC Health
10.	Scholarships and Financial Assistance	Dean (Students Welfare)/ Dean Academics (UG/PG)
11.	On campus hostel	Chief Warden
12.	Accommodation / Residence	Estate Officer
13.	Interface with outside institutions	Dean , Outreach & Extension Activities
14.	International Affairs	Dean, International Affairs
15.	Alumni Affairs	Dean, Alumni Affairs
16.	Student Matters such as sports, cultural, council, NSS, Societies, fee concession	Dean, Student welfare
17.	Internship, Training and Placement	Head Training & Placement
18.	Computational Facilities, Internet, website	Head, Computer Center
19.	Internal Quality	Director, IQAC
20.	Capacity Building, Pedagogical Training	Director, HRDC

### 8.2.3 REVIEW OF THE REQUIREMENTS FOR PRODUCT AND SERVICES

For every programme run by the University, the resource requirements are reviewed from time to time based on the changing requirements of the employing organizations and major developments in the area of science, technology, and management. It is ensured that the University has the capability and the capacity to impart quality education and to produce competent engineers and professionals in all the programmes run by the University.

### 8.2.4 CHANGES TO REQUIREMENTS FOR PRODUCT AND SERVICES

16/6/20

University shall ensure that the relevant changes will be made in the documented information whenever necessary and the relevant persons shall be made aware of the changed requirements.

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### 8.3 DESIGN AND DEVELOPMENT OF PRODUCTS AND SERVICES

#### 8.3.1 GENERAL

The University plans and controls academic design and development activities and the qualities required in the passing out students. The scope includes the following for all the programmes/ services offered by the University.

- a) Curriculum design
- b) Detailed syllabi of all courses
- c) Logical sequence of courses including their pre-requisites
- d) Lecture plan and course files
- e) Review, verification, and validation of documents that are appropriate to each stage of design and development
- f) Responsibilities and authorities for design and development

The responsibility for design control lies with the following:

S.No.	ACTIVITY	RESPONSIBILITY
1	Identification, feasibility study and viability of new Programmes	Vice Chancellor, Dean Academics (UG/PG), Board of studies (BOS), Faculty
2	Need Assessment, Design and Development (For New as well as review of on-going programmes)	Faculty meeting, HOD, BOS
3	Review and Verification of Need Assessment, Design and Development.	Academic Council
4	Validation and approval of Design and Development	AC, BOM
5	Approval by AICTE/UGC for new programmes.	Dean Academics (UG/PG)
6	Approval/ Accreditation by NAAC/ NBA	Vice Chancellor/ Registrar/ Director IQAC

### 8.3.2 DESIGN AND DEVELOPMENT PLANNING

University ensures that the design and development activity is carried out in a planned manner. Design plans include the activities and sub activities including techniques & organizational interfaces and the time frame for completion. The plans are updated, as the instructional design evolves. Need analysis report (periodically or as per need) shall comprised of:

- Stated customer needs
- Needs which the customer has yet not realized (Implied needs).
- Overall goals of Instructions
- Relevant standards as per requirement of AICTE and UGC guidelines.
- General characteristics of target population.

Organizational and technical interfaces between different faculty and external expert groups providing input to the instructional design are defined, committees are constituted and their reports are documented. Faculty members from different disciplines connected with the design and development activity are associated with the process. The updating /restructuring is carried out as the design process progresses. Clear responsibilities are assigned and effective communication is ensured.

### 8.3.3 DESIGN AND DEVELOPMENT INPUTS

The requirements of instructional design are determined and recorded. For instructional design, the input is taken from various sources. Input requirements are clearly understood and reconciled. The design input may come from:

- Need analysis and Reviews
- Recommendations from alumni, senior management, and industry
- Success/failure reports of similar courses and programmes
- Published literature relevant to programmes
- Interaction with the industry

### 8.3.4 DESIGN AND DEVELOPMENT CONTROLS

The process of determining solutions to satisfy the identified needs is laid down and documented. Instructions are designed by incorporating these solutions. The analysis and



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mappings are recorded. The design output at this stage is taken as the initial design for subsequent reviews.

**REVIEW:** Reviews are conducted at defined stages of the curriculum design, in which Board of Studies members, Academic Council members, and BOM members as well as experts from the peer group from within and/or outside the University are engaged. Records of the reviews are maintained and the design is updated and brought into document control for revision based on these reviews. The design reviews are carried out at the end of each of the following stages using prescribed check lists:

- Need analysis
- Design and review by BOS
- Review by AC
- Review by BOM

**VERIFICATION:** Verification of design is conducted by comparison of the design with similar courses run by prestigious Universities. Evolved designs are also verified by taking independent opinion of the experts from the peer group from within or outside the University. The new curriculum is introduced only after adequate verification.

**VALIDATION:** New/revised curriculum and instructional design is made applicable to the prospective students. The curriculum is validated in the initial stages of its introduction by taking a close feedback from students and faculty members regarding the effectiveness and applicability of the curriculum, with regard to the documented needs. Necessary changes, if required, are made to ensure that the design conforms to defined needs of the students. Additional instructional sessions and allied inputs are arranged for students/participants whenever required.

### 8.3.5 DESIGN AND DEVELOPMENT OUTPUTS

The output of instructional design and development is documented in the form of a report. Through various reviews and verifications, it is ensured that the design output meets the design input requirements. The design output report includes:

- The types and levels of skills and knowledge to be imparted.
- Details of need analysis and mappings at various stages.
- Scheme of courses and the detailed syllabi.
- Instructional strategies.

- 1613/C
- Selection of instructional aids for delivery.
  - Assessment and evaluation.

The output documents like curriculum and instructional strategies are reviewed and approved before release at various levels and stages.

### **8.3.6 DESIGN AND DEVELOPMENT CHANGES**

Design changes are made both reactively as well as proactively. The need is identified through the feedback from the students and/or analysis of data of their performance. Periodic design changes are also affected to offset the obsolescence of the design or if a need for change is realized. All the steps as required for initial design & development are followed for effecting and incorporating changes. Review is carried out and changes are documented. Records of the results of the review are maintained.

## **8.4 CONTROL OF EXTERNALLY PROVIDED PROCESSES, PRODUCTS AND SERVICES**

### **8.4.1 GENERAL**

The University has made arrangements to ensure hiring of faculty, officials and staff as per laid down norms and procurement of physical infrastructure conforming to laid down standards and specified requirements. The Purchase section has a quality procurement policy. The important Consideration in purchase of Goods or services are

- (a) Quality
- (b) Reliability
- (c) Efficiency
- (d) Accountability
- (e) Economy

Efforts are being made to ensure placement of contract/ Purchase Order within the original validity of the bids. Specified quality and reliability of the supplier has to be taken into consideration with low cost involvement. However low cost will not always be the sole criteria of purchase, since the cheapest may not always be the best. The purchase procedure being followed in the University is based on the guidelines enumerated in the General Financial Rules 2017.

The scope and key responsibilities under purchasing includes:

16/2/c

**Vice Chancellor, DTU**

- (a) Hiring of faculty, officials, technical and other staff
- (b) All administrative approval irrespective of purchase value.

(b)  
(c)  
(c)

**Pro-Vice-Chancellor, DTU**

- (a) All expenditure sanction within the delegated financial power of Pro-Vice-Chancellor
- (b) Endorsement of all cases submitted for approval of Vice-Chancellor

(c)

**Registrar, DTU**

- (a) All expenditure sanction within the delegated financial power of Registrar, DTU.
- (b) Endorsement on all cases submitted for approval of Hon'ble Vice Chancellor.
- (c) Purchase of physical infrastructure for general purchases e.g. office furniture and equipment, consumable like stationery and Housekeeping items

**Deputy Registrar/Assistant Registrar/ OIC (S&P), DTU**

- (a) Signature & Issue of all NITs after approval of competent authority.
- (b) Processing all cases of central procurement.
- (c) All Government e Marketplace (GeM) procurement in the University.

Hiring of manpower and purchase of physical infrastructure are carried out in such a way that ensures quality of product as well as satisfaction of laid down norms & financial powers. Delegated power, if any, including regulatory requirements have been specified and are adhered to. Purchase activity may be conducted through any of the following modes:

**(a) HIRING OF MANPOWER**

All regular appointments shall be through invitation or advertisement published in newspaper/magazines and/or through search committees constituted for the purpose. Subsequently, duly constituted selection committees as per the laid down criteria shall hold interviews. Selection shall be made on merit. Temporary appointments, if needed, shall be, made on the recommendation of HOD's with subsequent approval by the prescribed appropriate authority.

**(b) PURCHASE OF PHYSICAL INFRASTRUCTURE**

Based on the urgency, expenditure involved and nature of stores to be purchased, various methods of procurement are to be followed:

- (a) Purchase of Goods through GeM.

- (b) Purchase of Goods without quotation (GFR-154).
- (c) Purchase of Goods by Departmental Purchase Committee (GFR-155).
- (d) Purchase of Goods by obtaining bids
- (e) Purchase of Goods by Single Tender Enquiry (GFR-166)

**(c) FOR PHYSICAL INFRASTRUCTURE:**

For regularly purchased high value/ high volume items, the subcontractors shall be evaluated to assess their ability to meet subcontract requirements through:

- Initial evaluation
- Post approval Periodic evaluation.
- Evaluation process shall be based on one or more of the following criteria:
- Inspection & Evaluation of subcontractor's quality system.
- Evaluation of product/material.
- Subcontractor's past history & quality rating, wherever available.

Items/product wise list of approved subcontractors shall be maintained in the department. Control shall be exercised on the subcontractors depending on the criticality of the product through product classification and the past experience and quality rating (if available) of the subcontractors.

**(d) FOR STUDENTS PROJECT SEMESTER PLACEMENT:**

Identification of prospective industries/organisations where students shall be placed for project semester evaluation, shall be carried out based on following considerations:

- Organisation's reputation, corporate image and market reputation.
- Sales turnover and Number of employees.
- Qualifications of personnel at the executive level.
- Nature of Projects that can be undertaken / offered.
- Support Facilities offered by the organisation.

#### **8.4.2 TYPE AND EXTENT OF CONTROL**

Following controls are developed by the University for the externally provided product and services.

**(a) VERIFICATION OF HIRED MANPOWER**

Hired manpower shall be periodically appraised as per documented procedures during probation and before confirmation as well as thereafter to ensure that they meet all specified requirements.

16/10/20

**(b) VERIFICATION OF PURCHASED PHYSICAL INFRASTRUCTURE**

The verification of purchased physical infrastructure shall be carried out as per the details given in purchasing documents, quality plans and records thereof shall be maintained.

**(c) VERIFICATION OF PURCHASED PRODUCT AT THE PREMISES OF SUBCONTRACTOR**

Wherever specified in the purchase data, the machinery, equipment and other items shall be inspected by the indenter and verified at the subcontractor's premises.

**(d) RECORDS**

All purchase records shall be maintained as per documented procedures.

**8.4.3 INFORMATION FOR EXTERNAL PROVIDERS**

Purchase documents have been designed to include all product/service specific acceptance criteria, cost details, requirements of qualifications of personnel and the quality management system requirements.

**8.5 PRODUCTION AND SERVICE PROVISION**

**8.5.1 CONTROL OF PRODUCTION AND SERVICE PROVISION**

The Instructional process in the University is planned, documented, and executed under controlled conditions for the attainment of desired goals. The major components of the instructional process to be controlled are:

S. No.	Scope	Responsibility
(a)	Need Assessment	Faculty, HOD, BOS
(b)	Instructional Design & Development	BOS, Academic Council
(c)	Imparting Instructions/ Teaching	Faculty, Time table In-charge, HOD
(d)	Conduct of Examinations	Controller of Examination
(e)	Outcome Measurement/ Evaluation	Faculty, HOD
(f)	Discipline	Dean (Discipline), Board of Discipline

(g)	Major support processes like administration, co-curricular activities, library, sports and extra-curricular activities	Deans
(h)	Short Term Courses	HOD (Continuing Education), All HODs, HRDC
(i)	Ensuring Quality in teaching-learning process and feedback	Director, IQAC

The control of instructional process in the University includes the following:

- Planning & execution of instruction as per curriculum needs for core and professional courses, with or without laboratory component, in compliance with references/codes designed curriculum and guidelines of UGC/ AICTE/ NAAC/NBA.
- Ensuring adequacy of qualified and trained manpower and physical infrastructure according to designed curriculum and class strength.
- Provision of requisite material support such as (i) Class rooms with proper seating arrangements, White boards, marker pens, duster, audio visual aids (ii) Laboratories equipped with Machines, equipment, tools, instruments, test samples, consumable and (iii) Library having Text books, reference books journals/video cassettes and other referral material.
- Maintenance of equipment and facilities to ensure their continued availability and process capability. This includes the machines, equipment and instruments/ tools in the workshops and laboratories used in the instructional process as well as availability and use of monitoring and measuring equipment
- Planning and undertaking Industrial/ educational visits.
- Placement, training and evaluation of students for Project Semester in private/ public sector/ industry/ organizations.
- Continuous monitoring and maintenance of instructional process parameters.
- Monitoring and control of any deviations of product qualities or process parameters from design specifications.
- Planning, execution and control of the following co-curricular/ extracurricular activities to achieve the quality objective w.r.t. development of personality & physical/ mental fitness of students.
- Professional & literary societies organizing specialized seminars, quizzes, contests,

1608/c

group discussions, panel discussions, interaction between students, teachers and staff members for improving general skills of communication and presentation.

All educational & training processes are special processes, as their quality cannot be measured immediately after delivery. Instructional process and plan is accordingly documented. Duly qualified and trained faculty & technical staff are assigned the responsibility of imparting instructions to ensure desired results.

### 8.5.2 IDENTIFICATION AND TRACEABILITY

The University has made arrangements for identification of students & ensures traceability of data related to them throughout the realization process. The scope includes the following:

Scope	Responsibility
<b>(a) Student Identification through</b>	
Original Application Form	Dean Academics (UG) Dean Academics (PG)
Original certificates	Dean Academics (UG) Dean Academics (PG)
Roll No., which provides information about their batch, branch and a unique Roll number.	Head Computer Centre
Semester Registration Record	Dean Academics (UG) Dean Academics (PG)
Identity Card issued to all registered students (Hosteller/ Day scholars with address) every year.	Dean Academics (UG) / Dean Academics (PG) Office In charge Hostel
Email address, login ID & password	Head, Computer center

<b>(b) Traceability of student's data through:</b>	
Class schedule	Time Table In-charge/ HOD
Attendance record	Computer center / Teacher
Performance record	Controller of Examination
Placement Record	Head (Training & Placement)

The arrangements made in the University for Identification and traceability:

- (a) Preservation of original application form of each student in personal file.
- (b) Collection, verification, storage, preservation and return of original certificates.
- (c) Issuing a unique roll number depicting batch.
- (d) Issuing an Identity Card (Hosteller/ Day Scholar with address).
- (e) Creating Email address, login ID & password for each student.
- (f) Maintaining record of registered courses (Number & Course Title).
- (g) Maintaining record of applicable scheme and syllabi.
- (h) Scheduling various classes/Time Table.
- (i) Maintenance of attendance record.
- (j) Maintenance of placement record.
- (k) Transferring grades earned in each subject to academic account and finally to transcripts of students.
- (l) Compiling the record of courses cleared and grades obtained in the consolidation sheet for award of final degree to students.
- (m) Each department shall maintain identification & traceability of registered students in their respective disciplines and will have appropriate records.

### **8.5.3 PROPERTY BELONGING TO CUSTOMER OR EXTERNAL PROVIDERS**

The University has made arrangements for verification, storage and maintenance of customer supplied product, provided for incorporation into the supplies or for related activities.

The scope shall include:

- Items supplied by the customer (students) for evaluation.
- Items supplied by the customer during consultation/ testing/ short term customized training programmes.



1606/c

The responsibility for customer property is as under:

Items	Responsibility
Original certificates	Dean Academics (UG), Dean Academics (PG)
Tutorial & Home Assignments	Faculty
Laboratory Note Books	Faculty/ Lab In-charge
Report of Project work	HOD/ Library
Answer Books	Controller of Examination

Arrangements have been made for the following:

- (a) Receipt, verification & return of original certificates.
- (b) Receipt, evaluation & return/ preservation of laboratory note books, tutorials and home assignments.
- (c) Receipt, evaluation, return/ preservation of mid semester tests and endsemester examination answer books.

#### 8.5.4 PRESERVATION

The product in the case of educational University is the students. Most of the preservation part of this part has been dealt with in various clauses. In addition to these, the University has also made arrangements for taking care of the students and their well-being by the following:

- (a) Maintaining discipline in the campus including University, hostels and play grounds.
- (b) Making arrangements for games, sports and other facilities for keeping them in good health.
- (c) Making available the health centre facility.
- (d) Counselling to students who need it.
- (e) Maintaining hygiene in hostel messes, college canteen and water coolers etc.

#### 8.5.5 POST-DELIVERY ACTIVITIES

The post deliver activities of the product and services provided by the University meet all the regulatory and statutory requirements. The requirement of organization/ institutions are given priority and feedback is maintained on the product/ services for continual improvement.

### 8.5.6 CONTROL OF CHANGES

The feedback received is used to decide the changes in the process to meet the customer requirements. All such decisions are documented and approved by authorized body.

### 8.6 RELEASE OF PRODUCTS AND SERVICES

The product/ services are released only after meeting the acceptance criteria and approved by the relevant authority. The evidence of the conformity to the acceptance criteria is documented and preserved which is also traceable.

### 8.7 CONTROL OF NONCONFORMING OUTPUTS

Documented procedures have been established to ensure that non-conforming students or items of physical infrastructure are prevented from further processing and that their control provides for identification, documentation, evaluation and disposition under intimation to all concerned.

The scope and responsibility for conduct of non-conforming product includes:

SCOPE	RESPONSIBILITY
Non-conformance identified during revision & verification of course design.	HOD
Students' performance below the specified requirements during the instructional process.	HOD, Dean Academics (UG/PG)
Instructional delivery not conforming to specifications	Course Instructor, HOD
Materials and services not conforming to the specified requirements	HOD

Documented procedures include the following:

- i. Student whose performance is below the specified requirement are identified and listed separately. Procedure for identifying such students, referring them to counseling service through designated counsellors, HOD, course instructor, Dean Academics (UG/PG), Dean (SW), Vice Chancellor has been established.
- ii. Feedback regarding conduct of courses is collected from students and communicated to HODs for corrective action.
- iii. Physical infrastructure if found non-conforming, is corrected or disposed of as per

1604/c

documented procedure.

### 8.7.1 REVIEW AND DISPOSITION OF NON-CONFORMING PRODUCT

Documented procedures also address the aspects of review and disposition of the non-conforming product. The outline of these procedures is given below:

- i. The students whose performance has not been up to the mark are counselled, their performance discussed in the Heads Group meeting and a suitable corrective action taken which may include.
- ii. Providing additional opportunities to improve and conform to requirements
- iii. Regarding non-conformance of instructional performance with the instructional design or non-conforming performance of the instructor, action is taken based on a documented procedure/norms & rules of the University. Actions entail giving feedback to the concerned instructor and/or planning and implementing a corrective action under intimation to Head.
- iv. Regarding physical infrastructure disposition of non-conforming product is carried out by taking up and examining the matter at the appropriate level. Action may include maintenance or rejection of goods or services.

## 9. PERFORMANCE EVALUATION

### 9.1 MONITORING, MEASUREMENT, ANALYSIS AND EVALUATION

#### 9.1.1 GENERAL

The University applies suitable methods for monitoring and measurement of processes of quality management system. This monitoring and measurement demonstrate the ability of the processes to achieve planned results. The established methods include:

- i. Maintenance of course file and lecture plan by every teacher. The checklist of the documents to be attached and their order is prepared.
- ii. Filling up of course coverage Performa by each teacher and its counter checking by head of the department.
- iii. Surprise checks by HOD and Vice Chancellor to ensure that classes are held.
- iv. Maintenance of attendance records and declaration of short attendance list at timely intervals.

- v. A minimum of four assignments/ tests to be submitted for internal assessment in addition to the University level Mid Semester and End Semester Examinations.

**9.1.2 CUSTOMER SATISFACTION**

The University has created well developed system for monitoring progress, evaluating and providing valuable feedback to ensure that the processes meet customer requirements and the information is collected using the following established mechanism:

- i. Student Feedback is regularly taken on matters related to delivery of instruction, courses taught, industry application and overall relevance.
- ii. Feedback on industry requirements is collected from different companies and organizations coming for the campus placements.
- iii. Feedback from students after they spend internship in industry.
- iv. Feedback from Alumni
- v. Feedback from Parents
- vi. Feedback from Teachers

The information thus collected is summarized, and analyzed and the results of the analysis are used as a feedback to further improve the system. Heads of departments review the feedback and specify guidelines for further improvement wherever applicable.

**9.1.3 ANALYSIS AND EVALUATION**

The University has made arrangements for evaluating and meeting the specified requirements for students at entry, during the instructional process and finally before qualifying for award of degree as well as for other physical infrastructure so that accepted students, instructions & materials are processed further. Special Classes and Remedial Classes are organized for weaker students in every semester.

The scope and responsibility for monitoring and measurement of product is as under:

Scope	Responsibility
<b>a) Students</b>	
Entrance/diagnostic examination	JEE Mains/ GATE/ CAT/CEED/CUET/MAT, NET University Entrance Examination
Course Examination	HOD, Course Instructor
Continuous evaluation as conducted during the process	Course Instructor, IQAC

1602/C

Summative evaluation at the end of the Semester	COE, BOS, Course Instructor
<b>(b) Physical infrastructure</b>	
Inward and in-process inspection Lab Manuals and Equipment	HOD, Lab In -charge

Following types of evaluation is performed by the University.

**(a) ENTRANCE/ DIAGNOSTIC EXAMINATION**

Admissions to various undergraduate programmes are made through JEE mains/CUET, post-graduate programmes through GATE/CEED/CAT/MAT and Ph.D. through entrance examination/UGC-NET. Eligibility information for each programme is contained in the University Regulations and also in the Information Brochure issued every year.

**(b) FORMATIVE EVALUATION AS CONDUCTED DURING THE INSTRUCTION PROCESS**

The instruction process shall be reviewed & verified for adequacy. Continuous evaluation of students shall be carried out through examinations and/or other modes during delivery of instructions. The evaluation process shall include:

- i. Course plan and Lecture plan to ensure that instructors & tutors follow a laid down plan for imparting instructions.
- ii. Mid semester test, announced or unannounced quizzes and practical viva- voce examinations.
- iii. Evaluation of home assignments, laboratory work, tutorial work and participation in class discussion/seminars
- iv. End Semester Examination conducted for all undergraduate & post graduate courses in which student is registered each semester as per established documented procedures.

**(c) SUMMATIVE EVALUATION AT THE END OF THE INSTRUCTION PROCESS**

A check list Performa has been established and is used to review and verify that the students have completed (fulfilled) all requirements for the award of the degree.

Inspection of all physical infrastructures procured by the University for use in instructional process or for further processing shall be carried out as per documented procedures. The records of inspection & testing shall be maintained as per documented procedures. Evidence of

conformity with the acceptance criteria is maintained.

The University has made arrangements to determine, collect and analyze appropriate data to demonstrate the suitability and effectiveness of the quality management system and to evaluate where continual improvement of the effectiveness of the quality management system can be made. This includes data generated as a result of monitoring and measurement and from other relevant sources. The analysis of data provides information related to customer satisfaction, conformity to product requirements characteristics trends of products including opportunities for preventive action and suppliers.

Presently analysis of data is being carried out in the following areas:

Scope	Responsibility
Awarding grades	Course Instructor
Success rate	Dean Academics (UG/PG)
Attrition rate	Dean Academics (UG/PG)
Research Output Trend Analysis & Correlation	Dean (IRD)
Program Exit Survey	Director, IQAC
Analysis of effectiveness counseling	Functional Head
Campus Interview records and co-relation with student performance	Functional Head

## 9.2 INTERNAL AUDIT

The University conducts internal audit every year to verify whether established QMS are followed to determine effective implementation. The internal Audit is carried out in a planned manner by trained officers.

The scope covers all activities of the quality system affecting quality of the instruction. The responsibility of scheduling internal quality audits lies with the Director IQAC. The arrangements made for conducting internal audits are:

- i. Documented procedure to define the responsibility and requirements for planning and implementing internal quality audits has been established and maintained.
- ii. The frequency of the internal quality audits is decided based on the status and importance of the activity but in no case the frequency shall be less than once in a year.
- iii. The audit of an area/ activity would be carried out by trained personnel other than those

1600/c

- directly responsible for the said activity.
- iv. The results of the internal quality audits are recorded and report is given to concerned functional Head.
  - v. Timely action on the reported non-conformities is planned and taken by concerned functional Head.
  - vi. Follow-up audit is conducted in-order to verify and record the implementation and effectiveness of the corrective action(s) taken.
  - vii. Root-cause analysis for NCs is done to ensure the non occurrence of NCs in future.
  - viii. The results of the internal quality audits are sent to M.R. for management review and record.

The selection of auditors and conduct of audits is made so that it ensures the objectivity and impartiality of the audit process. Auditors do not audit their own work.

### **9.3 MANAGEMENT REVIEW**

#### **9.3.1 GENERAL**

The review of the quality system shall be carried out every year to ensure continuing suitability, adequacy and effectiveness in satisfying the requirements of the standard and the quality policy of the University. The review includes assessing opportunities for improvement and the need for change to the quality management system. Reviews shall be carried out based on the inputs for the review period from the following sources:

#### **9.3.2 MANAGEMENT REVIEW INPUTS**

- (a) Action taken report on the previous management reviews
- (b) Results of Internal quality audits
- (c) Results of student's performance in various examinations
- (d) Result of Students Response Survey
- (e) Feedback from Industry, Alumni, participating organizations in campusplacement and other concerned sources
- (f) Details of corrective/preventive actions
- (g) Improvement programmes suggested/recommended
- (h) Training programmes launched
- (i) Review of quality policy and objectives

- (j) Changes that could affect the QMS

### 9.3.3 MANAGEMENT REVIEW OUTPUTS

The output from the Management Review is in the form of an 'Action Plan', which includes actions to be taken, responsibility, target date, resource requirements etc. related to:

- (a) Improvement of the effectiveness of QMS and its processes
- (b) Improvements in products related to customers
- (c) Resources needed

The management representative keeps the record of management review.

Scope	Responsibility
Customer (students) complaints/suggestions/ comments	Deans/HODs
Success/Failure rates	Deans/HODs/ COE
Non-conformities reported in instructional design and/or delivery	HODs/Vice-Chancellor
Non-conformities in use of physical infrastructural facilities	HODs/Registrar
Non-conformities as a result of Internal Quality Audit	M.R.

## 10. IMPROVEMENT

### 10.1 GENERAL

### 10.2 NONCONFORMITY AND CORRECTIVE ACTION

The University takes action to ensure that the recurrence of non-conformities or discrepancies, which are reported to have occurred at some point of time or which are likely to occur, are prevented. This is ensured by analyzing the problem, finding its root cause and eliminating it. The scope includes:

Documented procedure has been established for the following:

- i. To handle customer (students) complaints, suggestions & comments, feedback from instructors, other sources like industries, companies coming for campus recruitment companies, etc. and reports regarding product non-conformities, if any.
- ii. To review the non-conformity and investigate the cause of reported non-conformities



1598/c

- and recording the results of the investigation.
- iii. To evaluate the need for action, determining and implementing the decision to take corrective action effectively in-order to eliminate the cause of non- conformities and recording the results.
  - iv. To apply controls in-order to ensure non-recurrence of reported non- conformities.
  - v. Review the effectiveness of the corrective action taken.
  - vi. Corrective action taken to ensure conformity is decided according to the degree of the problem and commensurate with the risks involved. Actions taken include revision of course by external subject experts in BOS meetings and review by Academic Council meeting. Any change in method of delivery of instruction or instructor may be carried out in response to the feedback received.

#### **10.2.1 PREVENTIVE ACTION**

The University determines action to eliminate the causes of potential non- conformities in order to prevent their occurrence. Preventive action is appropriate to the effects of the potential problems. A documented procedure has been established which includes:

- (a) Prior planning and adequate preparation to ensure that processes move in right direction.
- (b) To analyze information pertaining to feedback received through student satisfaction survey, result of students, CGPA levels of class, feedback from the companies who came for campus recruitment and other such sources with a view to determine potential non-conformities.
- (c) To determine steps needed to deal with any problem requiring preventive action.
- (d) To initiate preventive action and to apply controls to prevent non- conformities.
- (e) To confirm that relevant information on actions taken to prevent non- conformities is submitted for management review.
- (f) Recording the results of action taken and reviewing the preventive action.
- (g) Review the effectiveness of the preventive action taken.

Any changes made to the procedures resulting from corrective and preventive action are recorded and implemented.

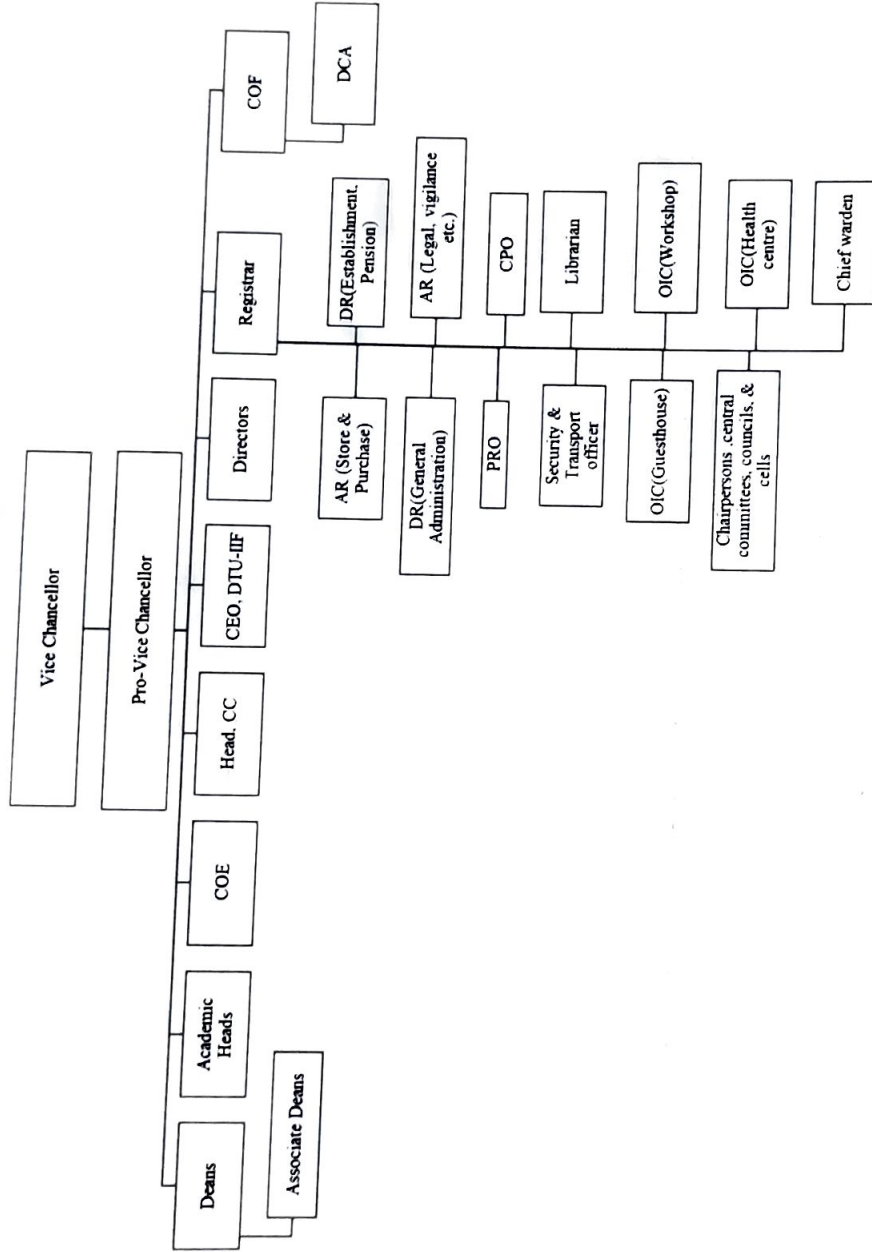
### 10.3 CONTINUAL IMPROVEMENT

The University continually improves the effectiveness of the quality management system through the use of quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review. At the time of every management review, through the measure of each objective and its comparison with earlier level of that objective, the trends are ascertained. Action points are then listed to continually improve the system. The status is reviewed in the subsequent management review meetings.

1596/c

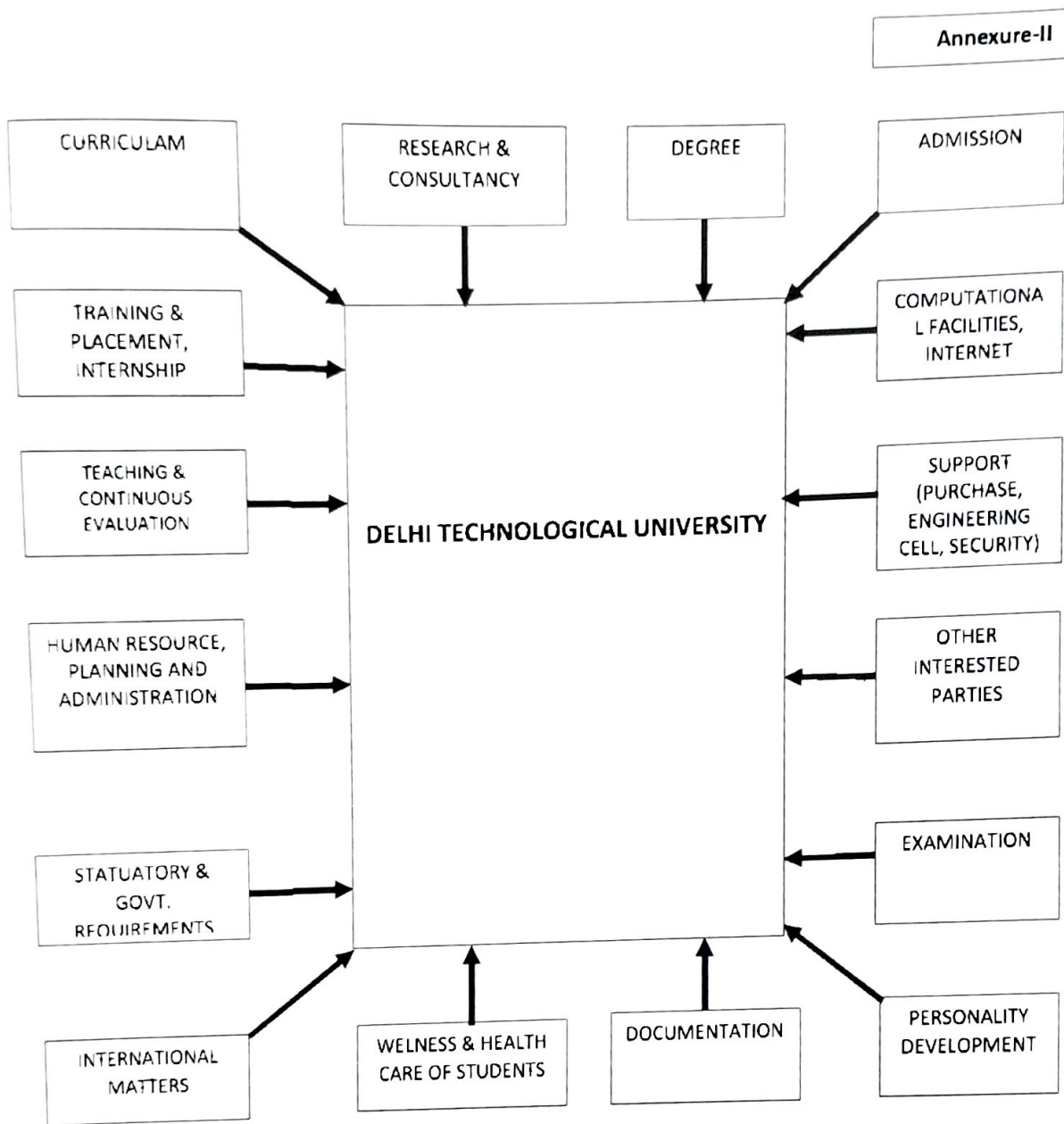
Annexure-I

Organization Chart



The above Organization structure is common for main campus as well as East Delhi Campus of Delhi Technological University.

1595/c



Annexure-II

DELHI TECHNOLOGICAL UNIVERSITY – Flow of Processes

1594/c

## Annexure-III

### RISK ANALYSIS

The risk and opportunities that can affect conformity of products and services and the ability to enhance customer satisfaction are determined and addressed. The risk analysis for the different products and services is given below:

1. **CURRICULUM**
  - i. Updating on regular interval
  - ii. Time line and coverage
  - iii. Relevant to Industry/Personal growth/Social needs
  
2. **RESEARCH & CONSULTANCY, INNOVATION**
  - i. Plagiarism
  - ii. Financial and Infrastructure support
  - iii. Timeline
  - iv. Non availability of staff for project work and consultancy
  - v. Delay in receipt of grants/ fund for project/ consultancy
  
3. **DEGREE**
  - i. Timeline
  - ii. Printing/ typographical error
  - iii. Record keeping and preservation
  
4. **ADMISSION**
  - i. Forged documents
  - ii. Time line
  - iii. Data confidentiality and security
  - iv. Malfunctioning of IT Infrastructure
  - v. NIC Support/Computer Centre
  
5. **TRAINING & PLACEMENT, INTERNSHIP**
  - i. Large no. of students
  - ii. Skills Gap

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- iii. Shortage of regular manpower

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**6. TEACHING & CONTINUOUS EVALUATION**

- i. Performance of student with continuous evaluation
- ii. Attendance
- iii. Experimental failures
- iv. Pressure and stress due to academic work on students and faculty
- v. Discrimination and harassment
- vi. Less interest in extracurricular activities
- vii. Placement

**7. COMPUTATIONAL FACILITIES, INTERNET**

- i. Confidentiality of digital data on DTU web servers and online portals
- ii. Failure of intranet and related infrastructure
- iii. Failure of lease line (primary & secondary) on Internet
- iv. Hardware failure of network devices and servers
- v. Long power failures
- vi. Performance of student with continuous evaluation

**8. SUPPORT (PURCHASE, ENGINEERING CELL AND SECURITY)**

a) PURCHASE

- i. Incomplete indent/ bid documents
- ii. Low response by bidders
- iii. Communication failure/ delay with bidders
- iv. Delay in delivery
- v. Unsatisfactory supply and service
- vi. Delay in payment of supplier and service provider
- vii. Cartel by vendors/ vested interests

b) ENGINEERING CELL

- i. Time line in execution of work
- ii. Lack of regular manpower
- iii. Delay in payment of the contractors and suppliers

- iv. Delay in approvals of the proposals.
  - v. Deal with DRC and arbitration matters/court matters.
  - vi. Use of allotted accommodation for commercial/private use
- c) SECURITY
- i. Large no. of local people entry for walking during before and after office hours
  - ii. Insufficient space for vehicle checking during peak hours
  - iii. Verification of temporary workers/ servants/ casual labourers
  - iv. Large area to manage and dense rural locality surrounding the University

**9. HUMAN RESOURCE, PLANNING AND ADMINISTRATION**

- i. Shortage of work force and infrastructure
- ii. Compliance with Act and Statues of University
- iii. Compliance with requirements of Regulatory and statutory Bodies
- iv. Compliance with Govt. of NCT of Delhi directions
- v. Compliance with the directions of different bodies of the University
- vi. Correctness of the primary data
- vii. Incomplete entries in the service book
- viii. Confidentiality of the information
- ix. Leaving of regular / contractual / guest faculty / staff in the midst of the academic semester / year

**10. STATUTORY & GOVT. REQUIREMENTS**

- i. Compliance with Act and Statues of University
- ii. Compliance with requirements of Regulatory and statutory Bodies
- iii. Compliance with Govt. of NCT of Delhi directions

**11. EXAMINATION**

- i. Secrecy and confidentiality of data
- ii. Timeline
- iii. Server failures
- iv. Record keeping

**12. INTERNATIONAL MATTERS**

- i. Change in International scenario and relations with India

- ii. Adoption of culture by students

**13. WELNESS & HEALTH CARE OF STUDENTS**

- i. Infrastructure
- ii. Medical Expertise
- iii. Confidentiality in student counselling

**14. PERSONALITY DEVELOPMENT**

- i. Enrollment in various councils/ sports
- ii. Active participation
- iii. Non settlement of advances taken by students

**15. DOCUMENTATION (Academic, SOP, Students, Result)**

- i. Record keeping and archiving
- ii. Security and confidentiality of data
- iii. Retrieval of records
- iv. Timely updating and auditing

**16. OTHER INTERESTED PARTIES**

- i. Expectation of parents
- ii. Expectations of Alumni
- iii. Expectation of Industry and Society at large
- iv. Expectation of Auditors



