THAPAR UNIVERSITY

(Declared as Deemed University)

PATIALA

QUALITY MANUAL

TU/QMS/QM

Release No. : 3.1

Release Date: 13.04.2015

Soft Copy
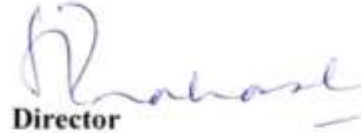
MR ISO 9001   **DIRECTOR**

This document and the information contained herein are the property of Thapar University (Deemed University), Patiala. It must not be reproduced, in whole or in part or otherwise disclosed, without prior consent in writing from the undersigned

Director

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

CONTENTS

S.No.	Description
1.0	**General**
	1.1 Scope of Certification
	1.2 Distribution List
	1.3 Abbreviations
2.0	**Profile of the University**
3.0	**Features Of Academic Programs**
4.0	**Quality Management System**
	4.1 General Requirements
	4.2 Documentation Requirements
5.0	**Management Responsibility**
	5.1 Management Commitment
	5.2 Customer Focus
	5.3 Quality Policy
	5.4 Planning
	5.5 Responsibility, Authority & Communication
	5.6 Management Review
6.0	**Resource Management**
	6.1 Provision of Resources
	6.2 Human Resources
	6.3 Infrastructure
	6.4 Work Environment
7.0	**Product Realization**
	7.1 Planning of product realization
	7.2 Customer related processes
	7.3 Design & Development
	7.4 Purchasing
	7.5 Product & Service Provision
8.0	**Measurement Analysis and Improvement**
	8.1 General
	8.2 Monitoring and measurement
	8.3 Control of Non conforming product
	8.4 Analysis of data
	8.5 Improvement

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

1.0 GENERAL

1.1 SCOPE OF CERTIFICATION

Scope of Certification to ISO 9001 Quality Management System covers all the academic departments, schools and centers of the University as well as the support services research, consultancy and testing services, administrative co-curricular and extra curricular activities.

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

1.2 DISTRIBUTION LIST

Copy No	Copy Holder/dept	Email
1.	Director	director@thapar.edu
2.	Deputy Director1 (DD1)	dydirector1@thapar.edu
3.	Deputy Director2 (DD2)	dydirector2@thapar.edu
4.	Dean of Academic Affairs (DOAA)	doaa@thapar.edu
5.	Dean of Research & Sponsored Projects (DRSP)	drsp@thapar.edu
6.	Dean of Student Affairs (DOSA)	dosa@thapar.edu
7.	Dean of Faculty Affairs (DOFA)	dofa@thapar.edu
8.	Dean of Partnerships and Accreditations (DOPA)	dopa@thapar.edu
9.	Dean of Resource Mobilization & Organizational Effectiveness (DRME)	drme@thapar.edu
10.	Controller of Examination (COE)	coe@thapar.edu
11.	Registrar	registrar@thapar.edu
12.	Officer on Special Duty	osd@thapar.edu
13.	Head, Department of Biotechnology	hbtd@thapar.edu
14.	Head, Chemical Engineering Department	hched@thapar.edu
15.	Head, Civil Engineering Department	hced@thapar.edu
16.	Head, Computer Science & Engineering Department	hcsed@thapar.edu
17.	Head, Electrical & Instrumentation Engineering Department	heied@thapar.edu
18.	Head, Electronics & Comm. Engineering Department	heced@thapar.edu
19.	Head, Mechanical Engineering Department	hmed@thapar.edu
20.	Head, Distance Education Department	hdde@thapar.edu
21.	Head, School of Humanities and Social Science	hsmss@thapar.edu
22.	Head, School of Chemistry Bio-chemistry	hscbc@thapar.edu
23.	Head, School of Mathematics and Computer Applications	hsmca@thapar.edu
24.	Head, School of Physics & Material Science	hspms@thapar.edu
25.	Head, School of Energy and Environment	hsee@thapar.edu
26.	Head, Central Library	hcl@thapar.edu
27.	Head, Central Workshop	hcw@thapar.edu
28.	Head, Centre of Information & Technology Management	hDean@thapar.edu
29.	Head, Centre for Industrial & Liaison Placement	hcilp@thapar.edu
30.	Management Representative (Master Copy Holder)	mandeep@thapar.edu

1.3 ABBREVIATION

• ACADEMIC	ACAD
• ALL INDIA COUNCIL FOR TECHNICAL EDUCATION	AICTE
• BACHELOR OF ENGINEERING	B.E.
• BOARD OF GOVERNORS	BOG
• CENRAL LIBRARY	CLIB
• CENTRE FOR INDUSTRIAL LIAISON & PLACEMENT	CILP
• CHECKLIST	CL
• CIVIL ENGINEERING DEPARTMENT	CED
• COMMULATIVE GRADE POINT AVERAGE	CGPA
• COMPUTER CENTRE	COMC
• COMPUTER SCIENCE & ENGINEERING DEPARTMENT	CSED
• DEPARTMENT	DEPT
• DEPARTMENT OF SCIENCE AND TECHNOLOGY	DST
• DOCTOR OF PHILOSOPHY	Ph.D.
• FINANCE SECTION	FS
• FORM	FM
• FORMAT	FT
• GOVERNMENT OF INDIA	GOI
• INTERNAL QUALITY AUDITS	IQA
• INTERNATIONAL ORGANIZATION FOR STANDARDIZATION	ISO
• MANAGEMENT REPRESENTATIVE	MR
• MANAGEMENT RESPONSIBILITY	MRY
• MASTER OF SCIENCE	M.Sc.
• MASTER OF COMPUTER APPLICATION	M.C.A.
• MASTER OF ENGINEERING	M.E.
• THAPAR EDUCATION TRUST	TET
• PERSONNEL SECTION	PERS
• PLANNING AND MONITORING BOARD	P&MB
• POSTGRADUATE	PG
• PROCEDURE	PR
• PURCHASING	PUR

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

• QUALITY MANUAL	QM
• QUALITY MANAGEMENT SYSTEM	QMS
• RESEARCH AND DEVELOPMENT	R&D
• RESEARCH ENGINEER	RE
• SCIENCE AND TECHNOLOGY ENTREPRENEURSHIP PARK	STEP
• SEMESTER GRADE POINT AVERAGE	SGPA
• SENATE UNDERGRADUATE COMMITTEE	SUGC
• STANDARD	SD
• THAPAR POLYTECHNIC	TP
• THAPAR UNIVERSITY	TU
• THAPAR TECHNOLOGY CAMPUS	TTC
• TRAINING	TRG
• UNDERGRADUATE	UG
• UNIVERSITY GRANTS COMMISSION	UGC
• WORK INSTRUCTIONS	WI

2.0   PROFILE OF THE UNIVERSITY

Thapar University (TU) was established on 8 October 1956 as an Engineering College named Thapar Institute of Engineering and Technology. It was established as a University in 1985 vide Sec.3 of the UGC Act, 1956 under notification # F.9-12/84-U.3. Thapar University offers Post-graduate and undergraduate programs in Engineering, Science, Management and Social Sciences. At TU we strive to maintain an environment that encourages scholarly inquiry and research, a spirit of creative independence and a deep commitment to academic excellence. We see our students as unique individuals with different interests and aspirations. The diverse programs and activities aimed at developing quality of mind, ethical standard, social awareness and global perspectives, let the students shape their own TU experience and grow. 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.

ACADEMIC UNITS OF THE UNIVERSITY

The academic units of the University are Departments, Schools and Centres. The   role   of **DEPARTMENTS** is to organize and conduct undergraduate (B.E. / B.Tech.), postgraduate (M.C.A, M.E., M. Tech. and M. Sc.) and doctoral (Ph.D. and   D.Sc.) programmes in relevant engineering/science and technological disciplines. The **SCHOOLS** offer postgraduate (M. Tech., M. C. A. and M. Sc.) and doctoral (Ph.D. and D.Sc.) programmes in relevant areas of specialization. The **CENTRES** are special Inter-Disciplinary Units serving the University as a whole.

As of date, the academic units of the University are:
Departments
   i.   Department of Biotechnology
   ii. Chemical Engineering
   iii. Civil Engineering
   iv. Computer Science and Engineering
   v.   Distance Education
   vi. Electrical and Instrumentation Engineering
   vii. Electronics and Communication Engineering
   viii. Mechanical Engineering

Schools
   i.   School of Humanities and Social Science
   ii. Chemistry and Bio chemistry
   iii. Mathematics and Computer Applications
   iv. Physics and Material Sciences
   v.   School of Energy and Environment

Centres
   i.   Central Library
   ii. Central Workshop
   iii. Centre of Information & Technology Management
   iv. Centre for Industrial Liaison and Placement
   v.   Health Centre

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

ACADEMIC PROGRAMMES

The University as of date offers the following academic programmes.

BE

- BE Civil Engineering
- BE Chemical Engineering
- BE Computer Engineering
- BE Computer Engineering (Honours in Machine Learning and Data Analytics)
- BE Computer Engineering (Honours in Computer Animation and Gaming)
- BE Electrical Engineering
- BE Electronics & Communication Engineering
- BE Electronics and Computer Engg
- BE Electronics (Instrumentation & Control) Engineering
- BE Mechanical Engineering
- BE Mechatronics
- BE Mechanical Engineering (Production)
- BE Software Engineering & Management

- **BTech**

- BTech Biochemical Engineering
- BTech Metallurgical and Materials Engineering
- BTech Biotechnology

- **International Engg. Program**

- Civil Engineering
- Computer Engineering
- Electronics & Communication Engineering
- Mechanical Engineering

- **BE-MBA (5 Year)**

- BE-MBA Civil Engineering
- BE-MBA Computer Engineering
- BE-MBA Electrical Engineering
- BE-MBA Electronics & Communication Engineering
- BE-MBA Mechanical Engineering

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

ME

- ME CAD/CAM Engineering
- ME Structural Engineering
- ME Civil (Infrastructure) Engineering
- ME Electronics & Communications Engineering
- ME Wireless Communications
- ME Production Engineering
- ME Software Engineering
- ME Computer Science & Engineering
- ME Information Security
- ME Electronic Instrumentation & Control Engineering
- ME Power System
- ME Power Electronics and Drives
- ME Thermal Engineering

M.Tech

- MTech in Biotechnology
- MTech in Metallurgical & Materials Engineering
- MTech in Environmental Science & Technology
- MTech in Energy Technology and Management
- MTech in VLSI Design
- MTech in Chemical Engineering
- MTech in Computer Applications

MSc

- MSc Biotechnology
- MSc Chemistry
- MSc Biochemistry
- MSc Mathematics and Computing
- MSc Physics

MCA

- MCA Regular Mode(3yrs, 2yrs)

MA

- MA Economics
- MA Psychology

Doctor of Philosophy (Ph.D.) and Doctor of Science (D.Sc.) Degrees in all Engineering, Technology, Science, Management and Social Science Disciplines

CONTINUING EDUCATION PROGRAMME

The University organizes various need based workshops and short term courses ranging from 2 days to several weeks duration for the in-service professionals, engineers and managers. On the successful completion of this programme, participants are awarded certificates.

SALIENT FEATURES OF THE DEGREE PROGRAMMES:

* Semester system
* Continuous evaluation of the students performance
* Letter grades
* Course-wise promotion
* Flexibility to students to select courses and move at an optimum pace suited to their ability, capacity and interest.

MEDIUM OF INSTRUCTION

The medium of instruction at TU is English.

SOURCES OF FUNDING

The University generates its own resources through collection of fees and consultancy projects offering analysis, design and testing services. For infrastructural development, the funding comes from UGC and other sponsoring organizations. For modernisation & upgradation of laboratories and other facilities, grants are received from UGC, AICTE, DST, and others on project mode basis. 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 whereever applicable.

BUSINESS DIMENSIONS

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

* Engineering Education leading to Bachelor(B.E.) , Master (ME, M.Sc., MCA) and Doctoral (Ph.D & D.Sc.) Degrees.
* Imparting knowledge to students beyond the prescribed curriculum.
* Continuing eduction for in-service professional-engineers and managers.
* Consultancy and Testing services.
* Design Research and Development activities.

3.0   FEATURES OF ACADEMIC PROGRAMMES

Over the years, engineering education in India has undergone significant changes in terms of goals, approach and contents. Today, a well-trained engineer is expected to possess knowledge of basic and applied sciences and scientific methods, an in-depth understanding of 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 curricula at TU have been designed to produce engineers who would be capable of meeting these goals. The curriculum is reviewed and updated periodically to ensure continued relevance.

UNDERGRADUATE PROGRAMME

Undergraduate engineering students are taught a series of courses in basic sciences to develop understanding of scientific principles and methods, analytical ability and rigour. These courses are followed by courses in engineering sciences 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 problems involving planning, design, manufacturing, maintenance and research and development. In addition, courses in humanities and social sciences 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 Social Sciences 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.

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.

POST-GRADUATE PROGRAMME

MASTER OF COMPUTER APPLICATIONS (M.C.A.)

The MCA programme aims to train and produce much needed human resource for software industry as increasing applications of computers in almost all areas of human endeavour has lead to a vibrant software industry with concurrent rapid technological changes. The programme is spread over a period of three years consisting of six semesters. The students study courses for five semesters in the University and carryout a Software Development Project (SDP) in the sixth semester in reputed national/multinational companies. The graduates of this programme are absorbed as software professionals, solution developers and system analysts in leading national/multinational companies like: TCS, WIPRO, CADENCE, HUGES etc. and other industrial/service organisations working in the area of Information Technology (IT).

MASTER OF SCIENCE (M.Sc.)

M.Sc. programmes aims to impart application oriented education in the respective area with an integrated approach so as to turn out professionals who will have easy absorbability in industry as well as self employment skills. The course curriculum has been structured   to impart education in the areas desired by the industry as well as local needs. The programme is spread over four semesters which include teaching of   both core courses as well as elective courses for first two semesters, a project in the third semester and a dissertation in the final semester.

MASTER OF ENGINEERING (M.E.)

The University in offering various M.E. programmes has uniformly maintained the basic structure and philosophy of the post-graduate education in engineering in the country. All the M.E. programmes, regular or part-time, have their 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 wide choice of electives is offered to the students in order to make their training broad based.

Presentation of a Seminar in addition to the course work and further carrying out   a thesis/dissertation are necessary components of post-graduate degree. The seminar 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 preparation of the seminar should highlight the areas for further research work on the subject. The problem taken up for the

Release No : 3.1
Issue Date : 13.04.2015

14

PREPARED BY
MR ISO 9001

APPROVED BY
DIRECTOR

thesis/dissertation should be as far as possible on the work done for the seminar. Both the seminar 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 and completes seminar only he will be eligible for award of Post-graduate diploma only.

DOCTORAL DEGREE PROGRAMME

High calibre students with demonstrated capability can register themselves for Ph.D./D.Sc. degrees even after their Bachelor's degree in any branch of engineering in the University and also in the area of Management. However, candidates registered in this programme directly after Bachelor's degree are required to take-up adequate number of make-up courses from M.E. programme in the area the candidate is preparing to carry out research work. There is no laid down course work requirement for the Doctoral Degree Programme for candidates registering after obtaining M.E. degree. The provisions in the rules and regulations governing the programme, aim at ensuring high quality of research leading to Ph.D./D.Sc. degree.

Ph.D./D.Sc. programme are offered on both regular and part-time basis. Ph.D./D.Sc. thesis is evaluated by a panel of examiners drawn from the peer group on the topic, both from India and abroad.

EVALUATION SYSTEM OF STUDENTS

The University follows semester system of education. Each academic semester is of twenty weeks duration ensuring 90 teaching days in addition to the time required for formal tests and end semester examination. The salient features of the evaluation system of students are continuous evaluation of the students' performance and course-wise 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 two Mid Semester tests, one End-Semester Examination, unannounced and announced quizzes in the lecture/tutorial classes, tutorial work, home assignments, subject seminar and laboratory exercises.

Each letter grade indicates the level of performance of the student in a particular course, based upon a ten-point scale. Grade points (given in the following table) are used for computing the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA),

Letter Grade	Performance rating	Grade Point equivalent
A+	Outstanding	10
A	Excellent	10
A-	Very Good	9
B	Good	8
B -	Fair	7
C	Average	6
C-	Marginal	5
E	Exposed	2
F	Fail	0
I	Incomplete	
X	Inadequate Attendance /Dropped/Unregistered	

A+, A, A-, B, B-, C, C- grade are the pass grades.

A+ grade shall be awarded in rare cases i.e. award of this grade is not mandatory and shall be awarded where performance of the student is exceptional among the students getting A grade.

Even the best student of any class needs to be good enough to be awarded the 'A+' grade. CoE shall review all 'A+' grades to be awarded.

E, F, I, X grades: If these grades are awarded in any course then that course shall be termed as backlog course.

E grade: This grade is awarded when a student has attended at least 75% of the lectures, tutorials and practicals (as per the teaching load of the course) and fails in the evaluation process.

F grade is a fail grade and student has to register for that course again when it is offered next. A student, who even having 75% attendance and after appearing in end semester exam scores very low marks shall be awarded 'F' grade.

X grade: This grade is also a fail grade and is awarded as a result of detention(s) on the basis of shortage of attendance. A student, who earns 'X' grade in a course, shall register for that course again when it is offered next. A student who is allowed to drop a semester shall also be awarded 'X' grade in the courses of dropped semester.

I grade: This grade is awarded when a student having good academic record is unable to appear in the end semester exam due to unforeseen reasons justifiable to instructor in charge. The CoE should receive the application of such cases along with relevant

evidence before the award of grades so that if found fit, the student shall be awarded I grade by CoE.

SGPA is the weighted average of all the grades earned by a student in the registered courses in a particular semester and CGPA is the weighted average of all the grades earned since his entry into the University up to and including the last semester. CGPA is computed as follows:

$$CGPA = \frac{\Sigma\, C_i\, G_i}{\Sigma\, C_i}$$

Where C_i denotes credit assigned to the i_{th} course and G_i the grade point equivalent to the letter grade earned by the student in the i_{th} course. When a student repeats a course, the new grade earned by him replaces the earlier one in the calculation of the CGPA, not withstanding that the grade earned earlier also appears on the grade card.

4.0 QUALITY MANAGEMENT SYSTEM

4.1 GENERAL REQUIREMENTS

The University has established, documented, implemented and is maintaining a Quality Management System as per the requirements of ISO 9001: 2008 international standard. Continuous improvement in the effectiveness of quality management system 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 9001:2008 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.

b) Determined the sequence and interaction of the processes of the quality management system. This includes process 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.

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.

The management in accordance with the requirements of ISO 9001:2008 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 like NAAC, AICTE, as per Ministry of HRD.

4.2   DOCUMENTATION REQUIREMENTS

GENERAL

The University has established the following documents of the quality management system:

a) Statement of Quality Policy

b) Statement of Quality Objectives for various functions and levels.

c) Quality manual (this document).

d) Documented procedures and records, six in number, as required by ISO 9001:2008 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.

QUALITY 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.

The structure of documentation established and a brief description of all the documents is given below:

Fig: Structure of documentation

A brief description of various documents established is given below:

QUALITY MANUAL
The quality manual covers the requirements of ISO 9001 standard opted for implementation at TU. 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 MR. The quality manual is distributed as per the distribution list, given in the beginning of this manual.

QUALITY SYSTEM PROCEDURES

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.   The procedures have been classified into the following three heads.

i)   Academic Procedures
ii)   Departmental Procedures
iii)   System Procedures

WORK INSTRUCTIONS

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

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 (ii) timely actions in the performance of tasks and (2) necessary inputs from all concerned.

RECORDS

Records are the objective evidence 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".

CONTROL OF DOCUMENTS

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

i)   Data input & output.
ii)   Quality Manual.
iii)   Procedural Manuals including Work Instructions and forms, formats etc.
iv)   Regulatory requirements and documents of external origin.
v)   Applicable Standards and Specifications.

The documented procedure includes the following: The approval of documents prior to use. The responsibility to control various documents has been assigned as under:

- Documents pertaining to a specific areas controlled by the functional head of that area.
- Quality Policy and Quality manual are reviewed and approved by the Director.
- All documents are approved with information to the MR with an aim to maintain uniformity in the whole organization.
- Registrar/MR/Director controls documents of External origin. The detailed are specified in the documented procedure for Control of Documents.

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

i)   Stipulating uniform document coding/numbering system and to ensure correct identification, access, reference, withdrawal and updation of documents.

ii)   Establishing master list, identifying the current/revision status of documents.

iii)   Ensuring ready availability of the latest versions of the document at the identified use points through a circulation list and withdrawals and issue procedure.

iv)   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.

v)   Release of revised documents to authorised holders as per change control procedures.

vi)   Reviewing and updating documents as necessary and re-approving.

vii)   Changes to the document/data are to be reviewed by the same functionary/organisation that framed and proved the original documents. The obsolete documents are withdrawn and the revised/changed document/data provided to all authorised 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.

viii)   Identification of documents of external origin for the planning and operation of the Quality Management System and control of their distribution.

ix)   The obsolete documents are prevented from unintended use by removing them from the point of use.

REFERENCE/CONNECTED PROCEDURES.

Control of documents   TU/SYST/DDC/01

CONTROL OF RECORDS

A documented procedure for control of records has been established 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:

i) Identification, collection, indexing, access, filing, storage, maintenance and disposal of quality records after the expiry of specified retention period.
ii) 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.
iii) Retention time of quality records has been established and recorded in prescribed format.

REFERENCE/CONNECTED PROCEDURES.

1. Control of Quality Records   PR/SYST/CQR/01

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

5.0 MANAGEMENT RESPONSIBILITY

5.1 MANAGEMENT COMMITMENT

The top management is committed to the development and implementation of the quality management system and continual improvement for its effectiveness. This commitment is evident from the following:

a) The importance of maintaining high quality of instructional process and satisfying the requirements of students and the employing organizations is communicated to the employees from time to time through circulars, notices, meetings etc.

b) A quality policy has been established, displayed at prominent locations in the University and everyone has been made to understand the intent of the quality policy and the commitment contained in it.

c) Quality objectives along with their means and measures have been established for various functions and levels.

d) Management reviews are conducted at planned intervals to ensure the continuing suitability, adequacy and effectiveness of the quality management system.

e) Resources are made available as and when required for carrying out activities.

5.2 CUSTOMER FOCUS

The management has made arrangements to ensure that the requirements of the students and employing industry/organizations are determined through suitable mechanism of feedback and these requirements are met through proper planning and control of instructional process with an aim to enhance satisfaction of both the passing out professionals as well as the organizations employing them.

5.3 QUALITY POLICY

A quality policy has been defined by the Director of the University and documented as below:

We, at Thapar University, Patiala, are committed to creation, archiving and dissemination of knowledge in Engineering, Science and Technology for service to the humanity. We undertake to develop a high quality, professionally groomed technical and engineering manpower, possessing multifaceted personality, respect for professional and social ethics, national values and the spirit of human emancipation.
Pursuing our commitment through:

- *Ensuring topical and relevant curriculum*

- *Adept delivery mechanism*

- *Intellectual and professional fulfilment of faculty and staff*
- *Quality research in the frontiers of technology*
- *Involvement of all stakeholders in growth and development of the University*
- *Continuous augmentation and renewal of infrastructure and facilities*
- *Creation of congenial and conducive work environment*
- *Promotion of team work and proactive participation*

Director

The quality policy has been written in the English language as well as in Hindi and Punjabi. It has been displayed at prominent places in the University for exposure to one and all. 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.

5.4   PLANNING

Top management has ensured that quality objectives are established at relevant functions and levels within the organization. The quality objectives are measurable and are consistent with the quality policy.

The objectives and goals of the University as well as the indicators/procedures of their measurement and monitoring are given below:

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

(A) Organization Objectives

Objectives and Goals	Means to achieve the objective	Measurement Criteria/ Indicators
1. To develop high quality, professionally groomed technical and engineering manpower.	- Continuous up gradation of: - Curriculum, matching with national needs - Delivery methodology - Manpower and infrastructural facilities - Facilities for co-curricular & extra curricular activities - Counseling - To generate & maintain Conducive and congenial academic environment - Help & guidance system outside the class room - Professional societies - Efficient services to & disposal of requests of the students - Improving communication Skills	- Feedback from students - Feedback from the industry/ organizations participating in campus placements - Status, standing and profile of the alumni - Frequency of revision of curriculum - Feedback from external participants in refresher/short term courses - No. of training programmes organized, attended by the employees - Sectional placements of student - Higher education - Industry - Service Sector - Entrepreneurs

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

2) To be amongst the top ranking Universities of technical & higher education	• Defining vision & mission & translating into actions • To identify the National/ International University for Bench Marking • Periodic self assessment & reviews • Accreditation by UGC/ AICTE • Interaction with other University/ organization	• Results of accreditation by UGC/AICTE • Trends of options exercised by high ranking candidates in the common entrance test (CET GATE & NET for admission to the University • Published reports by regulatory authority agencies and media • Status & profile of the organizations employing our students.
3) To act as a facilitator for knowledge generation & dissemination	• Pure and applied research in the frontier areas • Development of curriculum & co-curriculum programs for the dissemination of knowledge	Growth in: i. Number of specialization under M.E./Ph.D. Programme being offered ii. Number of M.E./Ph.D. degrees awarded each year iii. Number of papers published in referred journals and presented/ published in conferences and

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

		proceedings at National & International level
		iv. Number of on-going sponsored research projects
		v. Number of on-going consultancy projects.
		vi. Number of patents filed/sealed
		vii. Feed back from the industry

(B) OBJECTIVES OF VARIOUS FUNCTIONS AND LEVELS

- Instructional Design & Development
- Instructional Delivery and Evaluation
- Research and Development
- Student Affairs

QUALITY MANAGEMENT SYSTEM

Top management has ensured that

a) The planning of the quality management system is carried out for meeting 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.

b) 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.

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

5.5   RESPONSIBILITY AUTHORITY AND COMMUNICATION

Top management has ensured that the responsibilities and authority are defined and communicated within the organization.

The Organizational Chart of the University is given in the annexure 1.

RESPONSIBILITY AND AUTHORITY

The responsibility, authority 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 published University Rules:

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

DEPUTY DIRECTORS

Director will be assisted by two Deputy Directors who shall support him in all affairs related to Academic, Research, Faculty, Students and Administration. All policy decisions will be taken by Director and Dy Directors and shall be presented to Deans Committee and later to Heads Committee for final implementation.

	Dy. Director-I	**Dy. Director-II**
Responsibilities	Academics, Admission, Examination, Accreditations, Academic and sponsored Research, Consultancy, Distance education, International collaboration , ISO, Academic Audit, Convocation, TEQIP, Rankings Alumni affairs, Placement, Industrial Relations, Branding, Project semester	Faculty Affairs, Faculty recruitment, Appraisal of faculty, Student affairs, Societies, Sports, Cultural Activities, Hostels, Library, CORE , SAI Labs, STEP, Staff Club, Frosh week Staff Affairs, Liaisoning with regulatory bodies, and compliance (UGC, AICTE, Pollution Board, MC, etc)
Sections	Heads (CSED, ECED, EIED, SMCA, CITM, CCE) DoAA, DoRSP, COE	Heads (MED, CED, BTD, CHEM, SEE, SPMS, SCBC) DoSA, DoFA
Authority	All leave applications approvals for Heads and Deans under their domain	All leave applications approvals for Heads and Deans under their domain

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

	All financial sanctions within their domain	All financial sanctions within their domain
	Faculty appraisal within their domain	Faculty appraisal within their domain
	All approvals for Expert lecture, PhD-outside expert, conferences (national & international), Seminars, workshops within their domain	All approvals for Expert lecture, PhD-outside expert, conferences (national & international), Seminars, workshops within their domain
	LTC, Children allowance approvals for both faculty and staff within domain.	LTC, Children allowance approvals for both faculty and staff within domain.
	Passport, NOC approval for applying to other Institutes within their domain	Passport, NOC approval for applying to other Institutes within their domain
	Approval for University Car/Bus. Non-teaching issues within their domain	Approval for University Car/Bus. Non-teaching issues within their domain
Reporting	DoAA, DoRSP, CoE and Academic Audit cell , Heads (CSED, ECED, EIED, SMCA, CITM, CCE) shall report through Dy. Director –I to Director	DoFA, DOSA, Heads (MED, CED, BTD, CHEM, SEE, SPMS, SCBC), Head Library, CORE, STEP shall report through Dy. Director –II to Director

Dy. Directors shall try to resolve the matters in their domain forwarded by respective deans /Heads and intimate the director about the decisions taken or to be taken. For cases, which deputy directors are unable to resolve, will go to the director for final action whose decision shall be final. However, it will be necessary that the Director is informed about all the matters by respective Dy. directors. All the cases/matters will be forwarded in the proper channel i.e. Heads – Deans – Dy. Director – Director.

DEAN (ACADEMIC AFFAIRS)

i)   Admission of students at UG and PG levels
ii)   Design and Development of Instructional Process
iii)   Conducting regular meetings of SUGC, SPGC
iv)   Framing and revising rules and regulations pertaining to academics through SUGC and SPGC and finally Senate
v)   Preparation & distribution of academic schedule and time table
vi)   Registration of students at the beginning of each semester
vii)   Decisions regarding offering of backlog courses
viii)   Approval of examiners for various examinations at undergraduate and post-graduate levels
ix)   Granting semester leave on genuine grounds to the students as per University rules and regulations
x)   Granting extensions etc. in the time period for submission of Seminar, and/or Thesis of Master of Engineering as per University rules and regulations
xi)   DoAA to handle all the cases before forwarding to CoE for award of 'X' grade

DEAN (RESEARCH & SPONSORED PROJECTS)

i)   Admission, progress monitoring and evaluation of Ph.D. candidates.
ii)   Promotion of Research Activities in the University.
iii)   Initiating, submission and follow-up of project proposals to sponsoring agencies and timely completion of the sponsored projects.
iv)   Initiating, submission and follow-up of proposals for short term courses, summer/winter schools.
v)   Transmitting the information of sanctioned proposals to the HCILP for collation and to the concerned Deptts/Schools/Centres for organising approved short term courses, winter/summer schools etc.
vi)   Promotion of consultancy in the University

DEAN (STUDENTS AFFAIRS)

i)   Welfare of students in the University, their conduct, discipline, seriousness to studies, health, scholarships, fee concessions etc.
ii)   Functioning of Hostels, promoting corporate community living and self management including management of kitchen, mess and dining hall.
iii)   NSS programmes
iv)   Cultural Programmes organised by   various Societies for all round personality development of students.

v)   Constituting Students Consultative Committee and holding meetings for flow of ideas towards growth & development of University

vi)   In his capacity as Chairman Disciplinary Committee to convene it's meeting and to recommend disciplinary action whenever required.

DORME/ADRME

This deanship to focus on the following:

i) Process excellence. This involves redesign and refinement of academic, administrative and operational processes to achieve TU's long term vision of contemporarization.

ii) Enhance research funding from both national and international (exploratory) agencies. This also include exploring joint research projects with domestic and foreign Universities.

iii) Branding and ranking.

iv) Globalization with respect to student exchange, faculty exchange, attracting international students and faculty. This could also include finding opportunities for our students to find foreign internships and placement opportunities.

v) Developing a "venture" lab to enhance the entrepreneurial opportunities for all our students.

The new associate dean will generally focus on all the above five items but particularly focus on items i) to iii).

DEAN (FACULTY AFFAIRS)

i)   Recruitment of faculty in the University

ii)   Faculty Development Programs and other   policies and procedures that concern the quality and welfare of the faulty

iii)   Faculty attraction and retention

iv)   Performance Appraisals Evaluation and Incentive Scheme of faculty

CONTROLLER OF EXAMINATIONS

i) Conduct of all examinations (online and offline) in Thapar University
ii) Preparation and implementation of Date-sheet and Duty-sheet for examination and invigilators
iii) Monitoring the grading of students
iv) Attendance requirements: CoE will decide the students to be detained on the basis of shortage of attendance.
v) Award of A+ grade: To be decided by CoE. A+ shall be awarded to those students only who are distinctly and clearly above the students getting A grade.
vi) Award of F, I Grade: To be decided by CoE.
vii) Any change in grade: Director's approval on the recommendations of CoE
viii) DoAA to handle all the cases before forwarding to CoE for award of 'X' grade

MANAGEMENT REPRESENTATIVE

i) Preparation and control of quality system documents
ii) Organising training in quality system, ensuring that the employees understand the quality policy, objectives and working of the installed quality system.
iii) Planning and implementation of internal quality audits.
iv) Maintaining the quality system & reporting on its functioning; implementation of all corrective and preventive actions
v) Liaison with the external agencies/bodies on matters related to quality system.
vi) Arranging for Management Reviews.
vii) Maintenance of Records of the operative Quality System and its constituent documents.
viii) Holding Management Review Meetings and updating the Quality System.

HEAD OF DEPARTMENT/SCHOOL

i) Preparation of teaching load (Assigning courses to various faculty members and laboratory instructional work to technical staff)
ii) Ensuring that the Instructional delivery process is carried out as per schedule
iii) Initiating the instructional design, development/modification process through Board of Studies (BOS) as and when the need arises
iv) Collecting feedback from students and industry to serve as input for instructional design, development and modification
v) Purchase of machinery, equipment, software & instructional material as required
vi) Maintaining records like
   * Initiation of Instructional design
   * Course files
   * Students' complaints and their redressal
   * Admission of M.E. and Ph.D. students

      *   Ongoing research projects in the department
      *   Ongoing consultancy work in the department
vii)   Placement, monitoring & evaluation of students for Project Semester.
viii)   Upkeep and maintenance of machinery and equipment in Department.
ix)   Ensuring continuous upgradation of machinery, equipment, facilities, instructional aids etc. in the department by mobilizing funds
x)   Promotion of Research & Consultancy in the department
xi)   Organisation of continuing education programs, sponsored/in-house short-term courses, workshops, seminars, conferences, symposia, winter/summer schools
xii)   Interaction with the students, providing them the required guidance & counselling
xiii)   Monitoring and functioning of technical societies in the department
xiv)   Annual physical verification of assets and recommendations for write off
xv)   Conduct the meetings of the following committees regularly
      *   Board of Studies
      *   Faculty meetings
      *   Departmental Library Committee
xvi)   Ensure timely utilisation of various grants
xvii)   Ensure adjustment of maximum backlog courses of students in consultation with DOAA

HEAD OF CENTRE
In general, the responsibilities of the Head of a Centre are :
i)   Efficient functioning and prompt discharge of the responsibilities assigned to the centre as per their documented system
ii)   Effecting pro-active & reactive improvement in the centre
iii)   Maintenance of documents, records and physical infrastructure
iv)   Active participation in continuing education programmes

The activities of each Centre differ widely depending upon their role and responsibilities. Specific responsibilities of various Heads of the Centres are briefly given below:

HEAD, CENTRAL LIBRARY
i)   Acquisition, stocking and display of books, journals, back volumes, national/international standards, CD-ROM, databases, audio and video cassettes, search packages etc.
ii)   Cataloguing the acquired library material
iii)   Ensuring smooth access, issue and return of library material as per documented procedures
iv)   Providing reprographic facility for reference material
v)   Maintenance of library equipment and material
vi)   Annual physical stock verification of library material
vii)   Inter library networking for library and information services to users

PREPARED BY
MR ISO 9001

APPROVED BY
DIRECTOR

HEAD, CENTRAL WORKSHOP

i)   Imparting basic technical knowledge and developing requisite skills in various manufacturing processes e.g. carpentry, electro-plating, forging, machining, metal casting, sheet metal work, tin smithy and welding etc.
ii)   Providing   on-the-job training covering practical, managerial and commercial aspects of manufacturing to the students
iii)   Assisting and guiding in the manufacture of experimental rigs and set-ups for postgraduate students and research scholars
iv)   Modernisation and up gradation of infrastructural facilities
v)   Conducting special training programmes for in-service technical personnel

HEAD, CENTRE FOR INDUSTRIAL LIAISON AND PLACEMENT (CILP)
i)   Organising Campus placement of students
ii)   Promoting Industry-University-Interaction
iii)   Assisting the departments in the placement of students in public/private sector undertaking for project semester and summer term training , if required
iv)   Collecting feed-back regarding academic programmes and performance of students and transmitting the same appropriately for reactive corrections
v)   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

HEAD, CENTRE OF INFORMATION AND TECHNOLOGY MANAGEMENT

i)   Ensuring the availability of computing facilities as and when required by the users
ii)   Continuous modernisation and upgradation of the facilities
iii)   Ensuring the physical infrastructure to be in good working condition/order through preventive and corrective maintenance
iv)   Repair and maintenance of instruments/equipments in University laboratories
v)   Design and fabrication of teaching aids/instruments and equipment for research work
vi)   Extending services for purchase and installation of instruments/equipments by Departments
vii)   Organising training programmes on design, use, fabrication and maintenance of instruments/equipment
viii)   Offering consultancy and services to outside organisations
ix)   Ensuring internet and e-mail service to users of University
x)   Ensuring proper working of University Website
xi)   Implementation, maintenance and upgradation of ERP at University level
xii)   Advising for implementation of EPBAX at Thapar University

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

xiii)   Liaoning with different units for their Software need
xiv)   Build understanding with IT companies for the benefit of students and faculty of University
xv)   To maintain a good level of infrastructure for students, faculty and research scholars
xvi)   To coordinate with internet service providers for the delivery of best internet and other services

HEAD, HEALTH CENTRE

i)   Providing preliminary medical services to the University community and if need be to refer them to the specialists
ii)   Training the campus community for healthy living as well as extending preliminary medical aid in times of emergency
iii)   Ensuring hygienic conditions in Hostel Mess & Dining Hall, Campus Canteens etc.
iv)   Participating in special health drives for prevention/eradication of various diseases

MANAGEMENT REPRESENTATIVE (M.R.)

The Director vide his Office Order no. 48 dated 19th March 2013, has appointed Dr. Mandeep Singh, Associate Professor, Electrical and Instrumentation Engineering Department, as the Management Representative (MR) who over and above his responsibilities has been assigned the responsibility and authority for:

i)   Establishing, implementing and maintaining a quality system in accordance with ISO9001 requirements and   coordinating different functions and activities within the University in the said regard
ii)   Reporting the performance of the quality system to the University management for periodic review & improvement
iii)   Ensuring the promotion of awareness of students and employing industry's requirements throughout the University
iv)   Liaison with external agencies on matters relating to the quality of Instructional System at TU

INTERNAL COMMUNICATION

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 include a PBX facility and telephone availability to all employees, Internet facility with email ID of all teachers and offices, circulars, officer orders, notices, meetings & reviews

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

5.6   MANAGEMENT REVIEW

The review of the quality system shall be carried out once every six months 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:

REVIEW INPUT:
i)   Action taken report on the previous management reviews
ii)   Results of Internal quality audits
iii)   Results of students performance in various examinations
iv)   Result of Students Response Survey
v)   Feedback from Industry, Alumni, participating organisations in campus placement and other concerned sources
vi)   Details of corrective/preventive actions
vii)   Improvement programmes suggested/recommended
viii)   Training programmes launched
ix)   Review of quality policy and objectives
x)   Changes that could affect the QMS

REVIEW OUTPUT:
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

RECORDS
The Management Representative maintains records of management reviews.

Reference Procedure: PR/SYST/MRY/01

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

6.0 Resource Management

6.1   PROVISION OF RESOURCES

The University determines from time to time resources needed and provides them to implement and maintain the quality management system and continually improve its effectiveness and to enhance customer satisfaction by meeting customer requirements. For each programme, depending upon the number of registered students and the detailed curriculum, the requirements of human and physical resources are estimated and submitted to the management for consideration and approval. The Director 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 Director as per need projected by MR.

6.2   HUMAN RESOURCES

6.2.1   It has been ensured by the organization that persons performing work affecting quality of instructions are competent on the basis of appropriate education, training, skills and experience.

6.2.2   Competence, training and awareness

a) The organization has determined for every position in teaching and non-teaching categories, the necessary competence for personnel performing work, affecting conformity to product. The qualifications and experience required as eligibility condition for various positions are as per the regulatory and funding agencies like UGC, AICTE, Government and others.

b) 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 organization.

c) After provision of training, feedback on its effectiveness is taken from the participants, resource persons (trainers) as well as from the supervisors of the participants. Through the analysis of this feed back the effectiveness of the actions taken is measured which serve as a feed back for the future actions to be taken.

d) The organization ensures, through training programmes, circulars, notices, quality policy, work instructions and meetings that all its employees are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives.

e) Records of education, training, skills and experience are maintained and updated from time to time.

6.3   INFRASTRUCTURE

The University has determined the requirements for infrastructure, provided it and is maintaining and upgrading it from time to time to meet the requirements of instructional process so that quality of instructional design and delivery and in turn professional development of the students is achieved. The infrastructure provided in the University includes:

a) Building including classrooms, auditoriums, laboratories, library, computer centers, offices, hostels, workshops, dispensary, play grounds, indoor sports facilities and others.
b) Equipment and software in the laboratory, books and other referral material in the library, furniture and fixtures in offices, classrooms and hostels etc.
c) Support services such as communication or information systems like telephone, fax, internet (e-mail); and transport like college bus, cars etc.

6.4   WORK ENVIRONMENT

The organization determines the work environment and manages it to fulfill the requirements of performance of various activities in order to achieve quality of instructional process and of passing out students. This includes both the physical working conditions like lighting, noise, temperature etc in class rooms, laboratories, workshops, computer centers and other places as well as the human relations and working environment.

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

7.0 Product Realization

7.1   PLANNING OF PRODUCT REALIZATION

The University has planned and developed the processes needed for transformation of entering students to engineers and professionals. Planning of product realization is consistent with the requirements of the other processes of the QMS 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) Identifying and procuring state-of-art instructional processes with matching evaluation & management system to meet quality objectives and process requirements.
b) Matching the instructional design and development with the requirements of the customers i.e. students, industry and society at large.
c) Matching the resources e.g. knowledge & skill of faculty members as well as, technical and support staff, existence of good quality operational equipment in the laboratories and availability of other facilities like teaching aids relevant to the instructional design.
d) Laying down a scheme to control the instructional process for evaluation of students at various stages.
e) Specifying the performance criteria and verification of the same for successful completion of the process culminating into award of degree/certificate.
f) Objective evidence shown through records that the realization process and resulting product meets the requirements.

7.2   CUSTOMER RELATED PROCESSES

DETERMINATION OF REQUIREMENTS RELATED TO THE PRODUCT

The customer in this case is student or the employing industry. The curriculum and the delivery process is designed and transacted in such a way that the requirements of the employing industry are fulfilled. For this the information is collect from the employing offices from time to time. No programme is specially tailor made for the requirements of different students; rather the students have to opt from the existing programmes.

To ensure that the admitted and registered students clearly understand the requirements of their respective programmes and disciplines in order to qualify for the degree, diploma or

certificate for which admitted & registered, information brochure is prepared and the students are advised to read them.

The scope includes the selection process and procedures for admission, registration and execution of programmes. Amendments after admissions, if any, are as per the statements given in the Information Brochure.

The short term courses and services being rendered to outside agencies e.g. consultancy, test services etc. are also included in the scope of customer related processes.

The responsibility of the customer related processes lie with the following:

Scope	Responsibility
1. Information Brochure	Registrar
2. Admission & Registration	DOAA
3. Execution of Programmes	HEAD
4. Continuing Education Programmes	HEAD & Course Co-ordinator
5. Consultancy & Testing Services	DSRP & HEAD
6. Health Services	MO
7. Scholarships & Financial Assistance	DOSA
8. On campus hostel accommodation/residence	Co-ordinating warden

The brochure/proposals for Continuing Education Programme, finalisation of contract for rendering services etc. are prepared, reviewed, revised and approved by authorities annually to accuracy and currency of information. The applicable statutory and regulatory requirements applicable to the University are complied to.

REVIEW OF REQUIREMENTS RELATED TO THE PRODUCT

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 science and technology. It is ensured that the University has the capability and the capacity to impart quality education and produce competent engineers and other professionals in all the programmes run by the University.

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 feed back including complaints and their redressal, telephone, e-mail, post etc are provided and responsibilities are defined.

The following records of customer related processes are maintained for stipulated time:

Release No : 3.1
Issue Date : 13.04.2015

40

PREPARED BY
MR ISO 9001

APPROVED BY
DIRECTOR

- Brochure
- Applications of candidates
- Admission and Registration records
- MOUs on Consultancy/Test services
- Feed backs

7.3 DESIGN AND DEVELOPMENT

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

i) Curriculum design
ii) Detailed syllabi of all courses
iii) Logical sequence of courses including their pre-requisites
iv) Instructional Methodology
v) Evaluation Criteria & Methodology

The responsibility for design control lies with the following :

	ACTIVITY	RESPONSIBILITY
1	Identification, feasibility study and viability of new programmes	Director, P& MB, Senate, BOG.
2	Approval by AICTE/UGC for new programmes.	Registrar
3	Need Assessment, Design and Development (For New as well as review of on-going programmes)	HOD
4	Review and Verification of Need Assessment, Design and Development.	BOG
5	Review and Validation of Design and Development through statutory bodies e.g. senate and its sub-committees (SUGC, SPGC).	DOAA
6	Review & validation by BOG	Registrar

DESIGN AND DEVELOPMENT PLANNING

Planning and Monitoring Board of the University ensures that the design & development activity is carried out in a planned manner. Detailed planning for design and development of instructions is done by DOAA. Design plans include the activities & 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 comprise off :

    i)   Stated customer needs
    ii) Needs which the customer has yet not realized (Implied needs).
    iii) Overall goals of Instructions
    iv) Relevant standards i.e. AICTE and UGC guidelines and Curricula of Entrance Tests like Indian Engineering Services (IES) and Graduate Aptitude Test for Engineers (GATE), etc.
    v) General characteristics of target population.

Organizational & Technical Interfaces:
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 & development activity are associated with the process. The updation/restructuring is carried out as the design process progresses. Clear responsibilities are assigned and effective communication is ensured.

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:

    i)   Need analysis & Reviews
    ii) Recommendations from alumni, senior management, industry etc.
    iii) Success/failure reports of similar courses & programmes
    iv) Published literature relevant to programmes
    v) Boundary condition w.r.t GATE, IES, IAS curricula etc.

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

DESIGN AND DEVELOPMENT OUTPUT

The output of instructional design & development is documented in the form of a report named "Curriculum and Scheme of Courses". Through various reviews and verifications, it is ensured that the design output meets the design input requirements. The design output report includes:
    i)   The types and levels of skill and knowledge to be imparted
    ii) Details of need analysis and mappings at various stages

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

    iii) Scheme of courses and the detailed syllabi
    iv) Instructional strategies.
    v) Selection of instructional aids for delivery.
    vi) Assessment and evaluation.

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

DESIGN AND DEVELOPMENT REVIEW

Reviews are conducted at defined stages of the curriculum Design, in which faculty members from the concerned area as well as experts from amongst the peer group from within and/or outside the University are associated. Records of the reviews are maintained. Based on the reviews, the design is updated and brought into document control for revision. The design reviews are carried out at the end of each of the following stages using prescribed check lists:

    i)   Need analysis
    ii) Design and review by BOS
    iii) Review by SUGC/SPGC
    iv) Review by Senate
    v) Review by BOG

DESIGN AND DEVELOPMENT 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 amongst the peer group from within or outside the University. The new curriculum is introduced only after adequate verification.

DESIGN AND DEVELOPMENT 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 feed back 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.

CONTROL OF DESIGN AND DEVELOPMENT CHANGES

Design changes are made both reactively as well as proactively. The need is identified from the feedback from the students and/or analysis of data of their performance. Periodic design changes are also effected 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.

Reference Procedure: TU/QMS/PR/ACAD

7.4 PURCHASING

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 scope and responsibility under purchasing includes:

Scope	Responsibility
1) Hiring of faculty, officials, technical and other staff	Director/ Dean Faculty Affairs
2) Purchase of physical infrastructure for instructional purposes	HEAD
3) Purchase of physical infrastructure for general purchases e.g. office furniture and equipment, consumable like Housekeeping items	Registrar stationery and

PURCHASING PROCESS

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:

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

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.

PURCHASE OF PHYSICAL INFRASTRUCTURE:

Items needed for physical infrastructure may be procured through:
i)   Notice inviting tenders
ii)   Rate Contract
iii)   Calling limited quotations
iv)   Proprietary items
v)   Spot Purchase Committee
vi)   Control Quota Items
vii)   Imprest
viii)   LC in case of Imported Items

EVALUATION OF SUB-CONTRACTOR

(i) 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.
* ISO 9001 approved subcontractor.
* Evaluation of product/material.
* Subcontractors' 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.

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

(ii) FOR FACULTY HIRING:

For augmenting the faculty in deficient area or in case of an emergent need, faculty services shall be hired from outside, based on a specified evaluation process and as per laid down criteria.

(iii) 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 name, 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.

PURCHASING INFORMATION

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.

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.

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.

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.

CUSTOMER VERIFICATION OF SUBCONTRACTED SERVICES

The customer (students) may verify the credentials of the organisation/industry before placement for project semester. The students may have flexibility to choose an organisation depending upon the number of organisations available for placement.

RECORDS

All purchase records shall be maintained as per documented procedures.

7.5   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 flow chart for teaching activity is given in Annexure II

The major components of the instructional process to be controlled are:

Scope	Responsibility
1) Need Assessment	HEAD
2) Instructional Design & Development	DOAA
3) Imparting Instructions/Teaching	Instructor, DOAA
4) Conduct of Examinations	CoE, Instructor
5) Outcome Measurement/Evaluation	Instructor
6) Discipline	HEAD, Deans, Director
7) Major support processes like administration, co-curricular activities, library, sports and extra curricular activities	DOAA, DOSA, HEAD
8) Short Term Courses	Concerned Faculty

The control of instructional process in the University includes the following:
i)   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.
ii)   Ensuring adequacy of qualified and trained manpower and physical infrastructure according to designed curriculum and class strength.
iii)   Provision of requisite material support.

in class rooms : chalk, duster, black board, seating arrangements, audio visual aids,
                              if required.
in laboratories: Machines, equipment, tools, instruments, test samples, consumable
in Library   : Text books, reference books journals/video cassettes and other
                              referral material

iv)   Maintenance of equipment & facilities to ensure their continued availability & process capability. This includes the machines, equipment and instruments/tools in the workshops and laboratories used in the instructional process.
v)   Availability and use of monitoring and measuring equipment
vi)   Planning and undertaking Industrial/educational visits.
vii)   Placement, training and evaluation of students for Project Semester in private/public sector/industry/organizations.
viii)   Continuous monitoring and maintenance of instructional process parameters.
ix)   Monitoring and control of any deviations of product qualities or process parameters from design specifications.
x)   Planning, execution and control of the following co-curricular/extra curricular 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, group discussions, panel discussions, interaction between students, teachers and staff members for improving general skills of communication and presentation.
   *   Cultural societies like Music & Dramatic Society (MUDRA) organising functions i.e. IZHAAR, SATURNALIA etc. & other self actualization activities like promotion of hobbies
   *   Games and Sports
   *   Others

   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.

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
1) Student Identification through	
* Original Application Form	D.R. (A)
* Original certificates	D.R. (A)
* Roll No., which provides information about their batch, branch and a unique Roll number.	D.R. (A)

* Semester Registration Record	D.R. (A)
* Identity Card issued to all registered students (Hosteler/Day Scholars with address) every year.	D.O.S.A.
* Library Card	Librarian

2) Traceability of students data through :
   *   Class schedule
   *   Attendance record
   *   Performance record
	DOAA
	Instructor/Tutor
	D.R. (A)

The arrangements made in the University for Identification and traceability:

i)   Preservation of original application form of each student in personal file.
ii)   Collection, verification, storage, preservation and return of original certificates.
iii)   Issuing a unique roll number depicting batch
iv)   Issuing an Identity Card (Hosteller/ Day Scholar with address)
v)   Maintaining record of registered courses (Number & Course Title)
vi)   Maintaining record of applicable scheme and syllabi.
vii)   Scheduling various classes/Time Table.
viii) Maintenance of attendance record
ix)   Transferring grades earned in each subject to academic account and finally to transcripts of students.
x)   Compiling the record of courses cleared and grades obtained in the consolidation sheet for award of final degree to students.

Each department shall maintain identification & traceability of registered students in their respective disciplines and will have appropriate records.

CUSTOMER PROPERTY

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:

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

The responsibility for customer property is as under:

Items	**Responsibility**
* Original certificates	DR(A) & Registrar
* Tutorial & Home Assignments	Course Instructor/Tutors
* Laboratory Note Books	Laboratory Instructor
* Report of Project work	Project In charges
* Answer Books	Course Instructor, D.R. (A)

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

Arrangements have been made for the following:
* Receipt, verification & return of original certificates.
* Receipt, evaluation & return/preservation of laboratory note books, tutorials and home assignments.
* Receipt, evaluation, return/preservation of mid semester tests and end semester examination answer books.

PRESERVATION OF PRODUCT

The product in the case of educational University is the students. Most of the preservation part of this part has been dealt with in clauses 7.5.3 and 7.5.4. In addition to these, the University has also made arrangements for taking care of the students and their well being by the following:

i) Maintaining discipline in the campus including college, hostels and play grounds.
ii) Making arrangements for games, sports and other facilities for keeping them in good health.
iii) Making available the health center facility.
iv) Counseling to students who need it.
v) Maintaining hygiene in hostel messes, college canteen and water coolers etc.

CONTROL OF MONITORING AND MEASURING EQUIPMENT

The University has made arrangements to control, calibrate & maintain monitoring and measuring devices (including software) to ensure that the product conforms to the specified requirements.

Bulk of measuring & test equipment being for instructional purposes, the scope of this clause in general is therefore, limited to control and maintenance. However, wherever inspection is warranted it is carried out.

The arrangements made in every department of the University for Control of monitoring and measuring devices include the following:

i) Identification of the measurements to be made and standards to be followed.
ii) Selection of appropriate equipment for measurement.
iii) Calibration (restricted to Civil Engineering Department for Testing work) including calibration process indicating calibration status.
iv) Validating the results of previous inspection, if equipment is found out of calibration.
v) Suitable environment for calibration.
vi) Handling, storage and preservation of equipment as well as safeguarding against any tampering after calibration.

8.0 Measurement Analysis and Improvement

8.1 GENERAL

The University has planned and implemented the monitoring, measurement, analysis and improvement processes to demonstrate, conformity to the requirements, the quality management system and to continually improve the effectiveness of the quality management system. Methods for monitoring and measuring the performance of students, the quality of equipments and materials used and processed and other aspects as detailed in the standard, have been determined, standardized, and implemented. Analysis employs the use of statistical techniques in such a way that it highlights the need and opportunities for improvement.

8.2 MONITORING AND MEASUREMENT

CUSTOMER SATISFACTION

The University has made arrangements to monitor information related to customer perception to ascertain whether the University has met customer requirements. The information is collected using the following established mechanism:

a) Feedback from the students at the end of every semester on various aspects of the course taught to them.
b) Feedback collected from the industry during the campus interviews.
c) Feedback from students after they spend six months in industry for their project semester.
d) Feedback from the six months project semester of the students, on the quality of students and their usefulness to the industry.

The information thus collected is summarized, and analyzed and the results of the analysis are used as a feedback to further improve the system.

INTERNAL AUDIT

The University conducts internal audits every year to verify whether quality management system conform to the established QMS and to determine that it is effectively implemented and maintained.

The scope covers all activities of the quality system affecting quality of instruction. The responsibility of scheduling internal quality audits lies with the M.R. 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 has been 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 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) The results of the internal quality audits are sent to M.R. for management review and record.
viii)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.

REFERENCE/CONNECTED PROCEDURES.

Internal Quality Audits   PR/SYST/IQA/01

MONITORING AND MEASUREMENT OF PROCESS

The organization 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 files 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 other officers to ensure that classes are held.

MONITORING AND MEASUREMENT OF PRODUCT

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.

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

Scope	Responsibility
1) Students: * Entrance/diagnostic examination	DOAA, HOD
* Continuous evaluation as conducted during the process.	CoE, Course Instructor
* Summative evaluation at the end of the Instruction	D.R.(A)
2) Physical infrastructure * Inward and in-process inspection	HOD

ENTRANCE/DIAGNOSTIC EXAMINATION

Admissions to various undergraduate are made through AIEEE and post-graduate programmes through an entrance/diagnostic examination. Eligibility information for each programme is contained in the University Regulations and also in the Information Brochure issued every year.

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)   Audit 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)   Final/End Semester Examination conducted for all undergraduate & post graduate courses in which student is registered each semester as per established documented procedures.

SUMMATIVE EVALUATION AT THE END OF THE INSTRUCTION PROCESS

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

INSPECTION OF PHYSICAL INFRASTRUCTURE AT INWARD/INPROCESS STAGE

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.

RECORDS

The records of inspection & testing shall be maintained as per documented procedures. Evidence of conformity with the acceptance criteria is maintained.

8.3   CONTROL OF NON-CONFORMING PRODUCT

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
1) Non-conformance identified during revision & verification of course design.	HEAD
2) Students' performance below the specified requirements during the instructional process.	HEAD, Chief Student Counselor, DOAA, DR(A)
3) Instructional delivery not conforming to specifications	Course Instructor, HEAD
4) Materials and services not conforming to the specified requirements	HEAD

Documented procedures include the following:
i) Students whose performance is below the specified requirement are identified & listed separately. Procedure for identifying such students, referring them to counseling service and counseling them through designated counselors, HEAD, Course Instructor, DOAA, DOSA, Director has been established.

ii) Feedback regarding conduct of courses is obtained from students through "Student Response Survey" conducted by DOAA each semester. A specially designed object oriented Performa is used for getting this feed back. Rating of faculty on course, instruction, tutorial, practical & misc. items is reported in descending order of instructions & feedback is sent to individual faculty member for improvement. Students are also encouraged to give informal feedback during instruction process. In addition, if any non-conformance is noticed during inspection or periodic audit of the process, the same is corrected.

iii) Physical infrastructure if found non-conforming, is corrected or disposed off as per documented procedure.

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 counseled, their performance discussed in the Heads Group meeting and a suitable corrective action taken which may include.
   * Providing additional opportunities to improve and conform to requirements
   * Termination of the programme.

ii) 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.

iii) 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.

REFERENCE/CONNECTED PROCEDURES.   **TU/QMS/PR/DEPT**

8.4   ANALYSIS OF DATA

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	Instructor
Success rate	DOAA
Attrition rate	DOAA
Research Output Trend Analysis & Correlation	DRSP
Student Response Survey	DOAA
Analysis of effectiveness counseling	Functional Head
Campus Interview records and co-relation with students performance	Functional Head

8.5   IMPROVEMENT

CONTINUAL IMPROVEMENT

The University continuality 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 of 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.

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 analysing the problem, finding its root cause and eliminating it.

The scope includes:

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

Scope	Responsibility
1. Customer (students) complaints/suggestions/ comments	Head/DOAA
2. Success/Failure rates	DOAA/Head
3. Non-conformities reported in instructional design and/or delivery	Head/DOAA/Director
4. Non-conformities in use of physical infrastructural facilities	Head/DOSA/Register
5. Non-conformities as a result of Internal Quality Audit	M.R.

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 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.

It is ensured that the corrective action is in conformity with the degree of the problem and commensurate with the risks involved.

The action may include revision or discontinuance of a course, replacement of an instructor/tutor, if warranted, change in instructional schedule if necessitated and delivery methodology etc.

REFERENCE PROCEDURE

CORRECTIVE ACTION   **PR/SYST/CA/01**

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:

i)   To analyze information pertaining to feedback received through student response survey, result of students, CGPA levels of a class, feedback from the companies who

PREPARED BY   APPROVED BY
MR ISO 9001   DIRECTOR

came for campus recruitment and other such sources with a view to determine potential non-conformities.

ii) To determine   steps needed to deal with any problem requiring preventive action
iii) To initiate   preventive action and to apply   controls to prevent non-conformities
iv) To confirm that   relevant information on actions taken to prevent non-conformities is submitted for management review.
v) Recording the results of action taken and reviewing the preventive action.
vi) Review the effectiveness of the preventive action taken.

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

REFERENCE/CONNECTED PROCEDURES.
Preventive Action   **PR/SYST/PA/01**

ORGANIZATIONAL STRUCTURE   Annexure 1

Release No : 3.1
Issue Date : 13.04.2015

PREPARED BY   APPROVED BY

                        APPROVED BY

MR ISO 9001   DIRECTOR
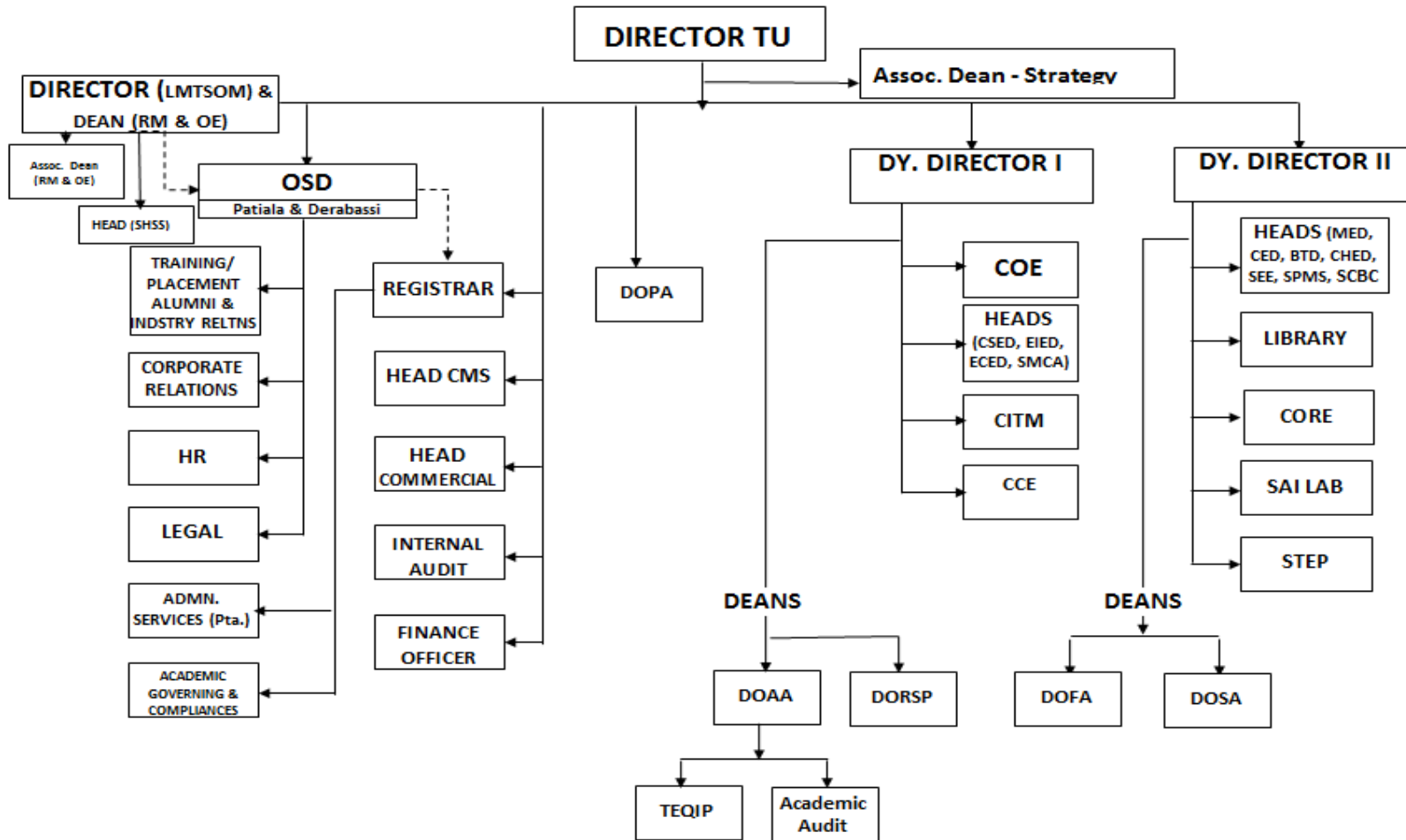
Flow Chart for Teaching Activity   **Annexure II**

```
          ╭─────────────────╮
          │  Teaching Load  │
          │   Allocation    │
          ╰─────────────────╯
                   │
                   ▼
     ┌───────────────────────────┐
     │  a)  Course No.           │
     │  b)  Course Name          │
     │  c)  Instructor Name      │
     │  d)  Time Table           │
     │  e)  Syllabus/Blow-up     │
     └───────────────────────────┘
                   │
                   ▼
     ┌───────────────────────────┐
     │      Course Delivery      │
     └───────────────────────────┘
                   │
                   ▼
     ┌───────────────────────────┐
     │  Quiz/Assignment/Tutorials│
     └───────────────────────────┘
                   │
                   ▼
     ┌───────────────────────────┐
     │    Mid Semester Exams     │
     └───────────────────────────┘
                   │
                   ▼
     ┌───────────────────────────┐
     │      Course Delivery      │
     └───────────────────────────┘
                   │
                   ▼
     ┌───────────────────────────┐
     │  Quiz/Assignment/Tutorials│
     └───────────────────────────┘
                   │
                   ▼
     ┌───────────────────────────┐
     │ Student Feedback Form (SRS)│
     └───────────────────────────┘
                   │
                   ▼
     ┌───────────────────────────┐
     │    End Semester Exams     │
     └───────────────────────────┘
                   │
                   ▼
     ┌───────────────────────────┐
     │    Final Evaluation &     │
     │    Grade Submission       │
     └───────────────────────────┘
                   │
                   ▼
  ┌──────────────────────────────────────┐
  │        Result Declaration            │
  │ (Award of Certificates after final   │
  │             semester)                │
  └──────────────────────────────────────┘
```

PREPARED BY   APPROVED BY

                                          APPROVED BY

MR ISO 9001   DIRECTOR