

CRITERION II: TEACHING-LEARNING AND EVALUATION

2.1 Student Enrolment and Profile

- 2.1.1 How does the university ensure publicity and transparency in the admission process?

The complete admission schedules are advertised in the leading National Dailies and magazines well in advance and repeating the advertisements two to three times before the counseling sessions. The schedule is also simultaneously displayed on the Website of the University. The queries of the aspirants are handled telephonically and through e_mail promptly. The transparency is achieved by displaying the data and results of applicants and those short listed on the University Website. Merit lists are also displayed on the Notice Board based on the Counseling conducted online. Full transparency is ensured at levels by the University management.

- 2.1.2 Explain in detail the process of admission put in place by the university. List the criteria for admission: (e.g.: (i) merit, (ii) merit with entrance test, (iii) merit, entrance test and interview, (iv) common entrance test conducted by state agencies and national agencies (v) other criteria followed by the university (please specify).

ADMISSION TO THE BE/BTECH PROGRAMME

Eligibility for BE/BTech

The candidate has passed 10+2 or equivalent examination with at least 60% marks (55% for SC/ST candidates) in aggregate of three subjects, namely, Physics, Mathematics and any one subject out of Chemistry, Biology, Biotechnology and Computer Science OR Minimum 60% (55% for SC/ST) marks in a Diploma recognized by AICTE or a state board of technical education of at least 3 year duration

The candidate has appeared in JEE (Main)-2015 with at least 20% aggregate marks (15% for SC/ST candidates). This clause shall not be applicable for the PGN, GoI, JKM, JK students, N-E students mentioned at clause 3.3).

The admission shall be made on the basis of merit of score in JEE (Main)-2015.

Eligibility for BTech (Biotechnology)

A candidate shall be eligible for admission in the BTech (Biotechnology) subject to the following conditions: The candidate has passed 10+2 or equivalent examination with at least 60% marks (55% for SC/ST candidates) in aggregate of three subjects, namely, Physics, Chemistry and, Biology. The candidate has appeared in AIPMT-2015 with at least 20% aggregate marks (15% for SC/ST candidates).

ME/M-TECH Programmes

Admission to all the ME/MTech programmes shall be made on the basis of valid GATE Score in respective discipline. First preference will be given to GATE qualified candidates. After offering seats to the GATE qualified candidates, for seats remaining vacant (if any), the admission will be made on the merit of the entrance test to be conducted by the University across India and only those candidates who shall be having minimum 20% (15% for SC/ST) in the entrance test shall only be considered for admission. Admission to ME/MTech programme will be open to a candidate who obtains at least 60% (55% for SC/ST) marks in the aggregate in the qualifying examination from a recognised University.

(1) For ME (Computer Science and Engineering, Software Engineering, Electronics and Communication) and MTech (Computer Applications), only GATE qualified candidates shall be admitted. Non-GATE candidates are advised not to apply for these programs.

(2) Each ME/MTech program shall run if minimum of 15 students are admitted in it.

MA Programmes

Eligibility for M.A(Economics):

- BA/ B.Sc. in Economics/ B.Com./B.Statistics/Bachelors in Business Administration - BBA/Bachelors in Business Studies - BBS / BE/ B. Tech. with 50% at Bachelors level.
- The program shall have following two specializations:
 - Money, Banking and Financial Markets
 - International Business.

Eligibility for MA(Psychology)

- Recognized Bachelors degree in Psychology (Honors) or Arts/ Science /Allied Sciences such as Home Sciences/ Nursing/ Human Development/B.Tech of minimum 3 years duration with 55 % marks (50% for SC/ST) in aggregate and Psychology as one of the subjects at graduation level. Candidates who have appeared in the examination of the final year shall also be eligible. However, for such candidates admission shall be provisional

- The program shall have following two specializations:
 - Clinical Psychology
 - Counseling Psychology

MBA Programmes

1. Graduate Degree in any discipline with 50% in aggregate marks or CGPA or grade secured from recognized University/Institute OR Post Graduate degree in any discipline with 50% marks in aggregate or CGPA or Grade from a recognized University/Institute OR A graduate degree with a pass in all parts/sections of the Intermediate examination of CA/ICWA/ACS. Candidates having extraordinary managerial/leadership potential demonstrated through at least one year of experience are exempt from having 50% marks in their graduation/post graduation.

2. Candidate must have valid CAT/XAT/CMAT/MAT/GMAT/GRE score/TU entrance exam.

MCA Programmes

MCA (3 years duration)

Recognized bachelor degree of minimum 3 years duration in any discipline with at least 60% marks (55% for SC/ST) in aggregate. Mathematics must be studied at 10+2 level or at graduation level, and has also appeared in the entrance test to be conducted by the university. Admission shall be made on the merit of the entrance test to be conducted online by the University across India.

MCA Lateral Entry (2 years duration)

Recognized bachelor degree of minimum 3 years duration in BCA, B.Sc. (IT/ Computer Science) with atleast 60% marks (55% for SC/ST) in aggregate. Mathematics must be studied at 10+2 level or at graduation level, and has also appeared in the entrance test to be conducted by the university.

Mode of Selection: Admission shall be made on the merit of the entrance test to be conducted offline by the University at Patiala.

UG PROGRAMME Lateral Entry Program to Second Year

A candidate shall be eligible for admission in the BE/BTech programme subject to the following conditions:

The candidate has passed (a) diploma, in relevant* discipline, of minimum 3 years duration after matriculation from Polytechnic College/Institute affiliated with State Board of Technical Education/University, or recognized by UGC/AICTE with a minimum of 60% marks (55% for SC/ST) in aggregate or equivalent grade point OR (b) diploma, in relevant* discipline, of minimum 2 years duration after 10+2 from Polytechnic College/Institute affiliated with State Board of Technical Education/University, or recognized by UGC/AICTE with a minimum of 60% marks (55% for SC/ST) in aggregate or equivalent grade point OR (c) BSc(Nonmedical) from recognized University with 60%(55% for SC/ST) marks in aggregate (ii) has qualified LEET-TU with at least 20% aggregate marks (15% for SC/ST candidates).

Eligibility for MSc (Biotechnology)

Candidates with bachelor's degree with minimum of 60% (55% for SC/ST) marks in graduation from recognized University under 10+2+3 pattern of education in Physical, Biological, Agricultural, Veterinary, and Fishery Sciences, Pharmacy, Engineering Technology, 4-Years BS (Physician Assistant) Course, Medicine (MBBS) or BDS.

Eligibility for MSc (CHEMISTRY) /MSc (BIOCHEMISTRY)

Recognised Bachelors degree in Science of minimum 3 years duration with 60% (55% for SC/ST) marks in aggregate and Chemistry as one of the subject at the graduation level.

Eligibility for MSc (MATHEMATICS AND COMPUTING)

Recognised Bachelors degree of minimum 3 years duration with 60% (55% for SC/ST) marks in aggregate and Mathematics as one of the subject at the graduation level.

Eligibility for MSc (PHYSICS)

Recognised Bachelors degree in Science of minimum 3 years duration with 60% (55% for SC/ST) marks in aggregate and Physics as one of the subject at the graduation level.

PhD PROGRAMME

A candidate seeking admission to the degree of Doctor of Philosophy must have obtained ME/MTech/MPhil/MCA/MSc/MA/MBA/CA or equivalent with minimum CGPA of 6.00 on a 10 point scale or 55% marks in aggregate where marks are awarded or NET (UGC/CSIR) qualified. Candidates are admitted on the basis of merit of

Entrance Test and Interview conducted by the University. The candidates who secure minimum of 20% marks in the written exam are only be called for Interview. During interview, a candidate is required to indicate area of research. Relaxation for appearing in the Entrance Test may be given by the University to those candidates who have qualified UGC/CSIR (JRF).

Detailed information about all the programmes and the admission process can be accessed at www.thapar.edu

- 2.1.3 Provide details of admission process in the affiliated colleges and the university's role in monitoring the same.

Since Thapar Institute of Engineering & Technology University is a deemed University, this clause is not applicable to us.

- 2.1.4 Does the university have a mechanism to review its admission process and student profile annually? If yes, what is the outcome of such an analysis and how has it contributed to the improvement of the process?

The University reviews the admission process and student profile annually. The admissions made in 2014 were reviewed exhaustively and following recommendations were proposed for the 2015 admissions.

A new addition in existing eligibility -"Minimum 60% (55% for SC/ST) marks in a Diploma recognized by AICTE or a state board of technical education of at least 3 year duration and also scored 20% (15% for SC/ST) in JEE (Main)" as a qualification for admission to first year of UG program.

New programs added were e.g. Credit Transfer Program with TCD, BE (Electronics and Computer Engg), B.Tech (Metallurgical and Materials Engineering), B.Tech (Biotechnology), Integrated BE-MBA in five disciplines, ME Power Electronics and drives, MSc. Biochemistry, MA Economics , MA Psychology

70 students can take admission under 'Contemporisation Program' with Trinity College Dublin (TCD), Ireland. These students shall study 2 years at TU and remaining 2 years at TCD. The degree shall be awarded by TCD, Ireland. These students will have to pay separate fee structure as prescribed from the first year only. In case, these students do not fulfil the conditions at the end of 2nd year or fail to get Visa then such students will have to continue their studies at TU with the fee structure prescribed in their first and second year of study. This provision shall be subject to signing of MoU with TCD.

The integrated BE-MBA program will be of 5 years duration. The candidates will be studying at Patiala Campus for the Engineering component comprising of 7 semesters. These candidates will be shifted to Derabassi Campus for completing the MBA program in the start of 8th semester and continue there at Derabassi Campus for the semester 9 & 10. In case of any seat remaining vacant in the integrated program, the same shall be filled from the respective discipline of UG (4 year program). On the successful completion of integrated program at the end of 5 year, these students will be given single degree. There will be separate mechanism to fill the seats of the integrated programmes.

The methodology for selecting the existing students of 2013 batch for studying at TCD is as following: 8 students (2 from each branch of Computer, Civil, Mechanical, ECE) of 2013- batch shall be selected to study at TCD, Ireland. These students will have to bear only 25% of the Tuition fee, 25 % will be borne by TCD and remaining 50% will be paid by TU. Students will be selected on the basis of following criteria:

- Students must have studied first four semesters at TU. LEET students will not be considered.
- On the basis of CGPA at the end of 4th semester with no backlogs. Minimum CGPA required is 8.50. The interview of these candidates shall also be conducted by a committee consisting of Dy Director-I, DoPA and DoAA.
- In case of tie, the student have more aggregate marks at 10+2 level will be given preference.
- Boarding and Lodging shall be borne by the students. Visa and Ticket charges shall be borne by the students.
- The degree shall be awarded by the TCD.

The scheme should include 'Design Project' of 5 credits during 2nd /3rd year and a 'Capstone Project 'of 8 credits in the final year. It was recommended that 'Capstone Project' of 5 credits for 2012 and 2013 batches will be there.

There is an increase the seats of ME (Computer Science and Engineering) from 30 to 60 from the academic session 2015-16.

The admission to BTech (Biotechnology) shall be made on the merit of AIPMT.

There is change in name of MSc -Psychology with specialization in Clinical/Counselling Psychology and Economics to MA in Psychology with specialization in Clinical/Counselling Psychology and Economics respectively in line with the UGC guidelines.

University is starting MA in Psychology with specialization in Clinical / Counselling & Economics with an intake of 20 each from the academic session 2015-16. The eligibility shall be minimum 50% marks in qualifying examination. Also a new course titled Financial Analysis for Ph.D. students from January, 2015 is introduced.

2.1.5 What are the strategies adopted to increase / improve access for students belonging to the following categories:

- *SC/ST
- * OBC
- * Women
- *Persons with varied disabilities
- *Economically weaker sections
- *Outstanding achievers in sports and other extracurricular activities

The University takes several proactive steps to improve and increase access to the students of these categories. The University implements many government schemes announced from time to time for scholarships, concession in fees, establishing book bank and relaxation in qualifying examination & entrance examinations. Some of these steps are summarized below:

SC/ST	Reservation of the seat in admissions, relaxation in % of qualifying examination & entrance examination Introduction of various type of scholarships, grant of concession in fees, to establish book bank in the library to issue books.
OBC	Reservation of the seats in admission as per Punjab govt. policy.
Women	Separate hostels with foolproof security, girls common room and other administrative help
Persons with varied disabilities	Reservation of the seats in admission as per Punjab govt. policy.
Economically weaker sections	Fee Concession in many cases and number of merit scholarships.
Outstanding achievers in sports and other extracurricular activities	Reservation of the seats in admission as per Punjab govt. policy.

2.1.6 Number of students admitted in university departments in the last four academic years:

CATEGORIES											
YEAR	BRANCH	SC		ST		BC		GENERAL		OTHERS	
		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
YEAR 1 (2014)	BCH	0	0	0	0	0	0	0	0	0	0
	CHE	0	0	0	0	1	0	47	20	0	3
	CIVIL	7	1	1	0	2	0	91	2	6	0
	COE	21	12	0	0	4	0	140	18	8	3
	ELE	9	2	0	0	1	0	92	23	2	3
	ECE	6	3	0	1	2	1	141	43	3	1
	EIC	0	1	0	0	1	0	63	34	1	1
	MEE	18	0	0	0	3	0	105	2	7	0
	MEC	0	0	0	0	0	0	34	2	2	0
	CML	1	0	0	0	1	0	47	11	1	2
	CAG	2	0	0	0	0	0	33	4	2	1
	MPE	0	0	0	0	1	0	33	1	1	1
SEM	2	0	0	0	0	0	30	13	1	0	
YEAR 2 (2013)	BT	0	0	0	0	0	1	1	2	0	0
	CHE	0	1	0	0	1	1	41	9	1	1
	CIVIL	18	2	5	0	2	0	67	3	2	2
	COE	19	8	1	1	2	2	113	48	8	6
	ELE	9	1	1	0	2	1	92	24	1	3
	ECE	6	2	0	0	1	2	127	55	3	2
	EIC	0	0	0	0	0	3	69	37	1	2
	MEE	26	0	1	0	3	0	99	0	7	0
	INE	0	0	0	0	1	0	9	2	0	2
MEC	1	0	0	0	1	0	30	0	0	0	
YEAR 3(2012)	BT	0	0	0	0	0	0	6	15	0	0
	CHE	0	0	0	0	0	0	54	20	2	0
	CIVIL	3	0	0	0	2	0	59	4	14	2
	COE	2	5	1	0	3	0	53	31	19	14
	CC	1	0	0	0	0	0	45	10	2	0
	ELE	4	0	0	0	1	1	59	9	7	1
	ECE	3	1	1	0	2	2	116	50	18	10
	EIC	1	1	0	0	0	0	56	22	2	0
	MEE	2	0	0	0	2	0	93	1	29	0
	INE	1	0	0	0	0	0	25	4	0	0
MEC	0	0	0	0	0	0	28	2	2	1	

YEAR 4 (2011)	BT	0	0	0	0	0	0	22	11	1	0
	CHE	0	1	0	0	1	0	45	26	1	0
	CIVIL	6	4	1	0	2	0	72	3	4	2
	COE	19	2	0	0	3	1	72	32	4	2
	CC	1	1	0	0	0	0	52	16	0	0
	ELE	3	2	1	0	3	0	63	10	2	0
	ECE	12	4	0	1	1	3	82	28	4	2
	EIC	0	0	0	0	1	0	64	23	2	1
	MEE	12	0	1	0	2	0	115	1	10	0
	INE	0	0	0	0	0	0	26	5	0	0

2.1.7 Has the university conducted any analysis of demand ratio for the various programmes of the university departments and affiliated colleges? If so, highlight the significant trends explaining the reasons for increase / decrease.

PROGRAMMES	NUMBER OF APPLICATIONS	NUMBER OF STUDENTS ADMITTED	DEMAND RATIO
UG	14098	1265	11:1
ME/MTECH	2916	419	7:1
MCA	266	50	5:1
MSc	115	24	5:1
MBA	339	92	4:1
INTEGRATED MASTERS	167	136	1:1
Ph.D	434	103	4:1
PG DIPLOMA	0	0	0

2.1.8 Were any programmes discontinued/staggered by the university in the last four years? If yes, please specify the reasons.

The University has discontinued the integrated BCA-MCA, BSc-MSc, M.Com, M.Phil and Part Time ME-M.Tech program in the last 4 years due to lack of demand. The University has proposed to replace two undergraduate programs in Industrial Engineering +MBA and Biotechnology with Mechanical Engineering (Production) and Biochemical engineering respectively from 2014.

2.2 Catering to Student Diversity

- 2.2.1** Does the university organize orientation / induction programme for freshers? If yes, give details such as the duration, issues covered, experts involved and mechanism for using the feedback in subsequent years.

Yes the university organizes orientation/induction programme “Frosh Week” for freshers every year to welcome the students in the university. This year on 26th August 2014 –“Frosh Week” was organized by the University. It is the time at the beginning of the academic year during which a variety of events are held to orient and induct the new students. This fiesta is an opportunity for the freshers to find their bearings in a new environment, while being introduced to the nurturing traditions and culture of the campus. Setting up a second home away from their parents can be a daunting experience but Frosh Week will ensure that this process is as comfortable as possible.

Proem 2014 preceded frosh Week and was organized on similar lines. Proem was organized from July 28 to August 1, 2014. It had lectures by eminent teachers and professionals on topics ranging from ‘Art of Communication’ to ‘Enjoy life: It is an adventure’. There were yoga sessions for the students in the morning and throughout the day various workshops on painting, theatres, debating etc. were organized for the first year entrants. The Proem ended with a cultural program compiled by the first year students on August 1, 2014

Frosh Week started off with Society Fair on 19th August: A platform for all societies in the University to showcase their achievements and attract students. This was the third society fair to be organised since the start of Frosh Week concept.

A session from Spiritual Scientist Alliance was organised on 20th August at TAN Auditorium. The interactive session based on Better Living was conducted by Dr. Mandeep Singh.

This was followed by Run for A Cause on 21st August, 2014, where students were given inspirational talk by Dr. Maneek Kumar, about a prevailing social issue Drug Abuse.

Then the students took part in the subsequent intra university marathon, which started off from the Directorate and ended at Hostel H. In the evening, students were also given a chance to showcase their creativity in the form of a graffiti based on social and environmental issues like global warming, child labour, drug abuse etc in the event Paint for A Cause.

Events planned for 22nd August were Reverse Engineering, a fun based interactive quiz which will be technology oriented along with basic engineering oriented followed by a Karaoke Eve where the freshers sang their hearts out without any fear.

Frosh Week society organised a Patiala city tour on Saturday, 23rd August where freshers were taken to various memorable locations in the city so as to familiarise them to their new home. The tour included locations such as Dukh Nivaran Sahib, Sheesh Mehal, NIS Patiala, Baradari gardens and so on.

Sunday, 24th August was also fun filled day for the freshers. An interactive session by Frosh Week team followed by a session by counsellor Paroksh Sujayji and an award ceremony for all the winners of previously organised Sportsmania, Run for A Cause, Paint for a Cause and Scavenger Hunt. The day was brought to a close by organizing a Movie Eve, where a movie selected by freshers themselves was showcased.

Frosh Week 2014 completed on Monday, 25th August with a session by influential speaker Mr. Smarth Bali and followed by another Karaoke Eve.

Frosh Week as a whole has been and will always be a wholesome learning experience filled with fun and interaction for the freshers.

The feedback on Frosh Week is collected from students and the same is used to improve the process in terms of the activities to be included in the event and the personalities to be invited. A copy of feedback is attached in **Annexure-IV**.

- 2.2.2 Does the university have a mechanism through which the “differential requirements of the student population” are analysed after admission and before the commencement of classes? If so, how are the key issues identified and addressed?

The different categories of students admitted in the system like LEET and reserve categories are mixed properly in different groups to encourage inclusiveness and overall growth of the students. Remedial classes in mathematics and personality development tools are adopted for improving the soft and hard skills the students. Additionally, a Student counselling cell under Chief Student Counsellor is operational to facilitate counselling and guidance for the students in the University.

- 2.2.3 Does the university offer bridge / remedial / add-on courses? If yes, how are they structured into the time table? Give details of the courses offered, department-wise/faculty-wise?

Remedial classes are held on Saturdays. Course offered: Mathematics. Department: School of Mathematics and Computer Applications. Faculty: Prof. S.S. Bhatia. Soft Skill Development: Prof. Samarath Bali consultant hired by the University.

The following are the Minor/MASt./MS programs proposed to be offered to all entering BE/B.Tech student's w.e.f. Session 2014-15.

Minor/MASt./MS Program open to all students (Intake)	Department/school offering the program
GENERAL MANAGEMENT(60)	LMTSOM
FINANCE (60)	LMTSOM
ENTREPRENEURSHIP (60)	LMTSOM
ECONOMICS (60)	SBSBS
PSYCHOLOGY (60)	SBSBS
CYBER SECURITY (60)	CSED
FINANCIAL MATHEMATICS(60)	SMCA
SOFTWARE TECHNOLOGY(60)	SMCA
INDUSTRIAL CATALYSIS(30)	SCBC
INSTRUMENTAL ANALYSIS(30)	SCBC
ENGINEERING PHYSICS (30)	SPMS
BIO-ENGINEERING(30)	BTESD

- 2.2.4 Has the university conducted any study on the academic growth of students from disadvantaged sections of society, economically disadvantaged, physically handicapped, slow learners, etc.? If yes, what are the main findings?

Every semester academically weak students are identified and lists are sent to Chief Student Counsellor and Head of Department/School. The Chief Student Counsellor/Head counsels the students from academic and social factors faced by the students.

The students are apprised of the activities of the counseling cell during the orientation program by the Chief Student Counselor appointed by the Director. The department nominates faculty member(s) to this cell on the advice of the Chief Student Counselor. General information is sent out to all students of the department informing them of the services extended by the cell and inviting them to meet the faculty coordinator of the department. The students are encouraged to seek guidance on academic, general or psychological issues, if necessary. Also, semester wise results are forwarded to the Student Counselor of the department by the Academic Section who prepares a list of students

whose performance is observed to be below average or poor. Such students are then invited to meet the counselor or any faculty member of their choice on a fixed date and time (changes possible on request of the student). Such meetings are arranged at least twice in a semester and are chaired by the Head of the Department and may include anybody who might be of help to the student. The students are advised to improve performance and are given suggestions or options for clearing their backlog courses.

The advising process is designed to ensure that each student selects a set of courses during each semester that meets minimum grade requirements and which can result in the student making efficient and orderly progress in meeting the academic requirements as listed in the course scheme. The advising process also helps to identify and solve problems the student may be confronting in achieving the educational objectives.

- 2.2.5 How does the university identify and respond to the learning needs of advanced learners?

The advanced learners are encouraged to pick up projects with a faculty mentor. Students are allowed to use the labs and workshop beyond office hours to carry out their project work. University also provide financial aid for fabricating these types of projects and participating in national and international events.

2.3 Teaching-Learning Process

- 2.3.1 How does the university plan and organise the teaching, learning and evaluation schedules (academic calendar, teaching plan, evaluation blue print, etc.)?

The teaching-learning and evaluation process is carried out as per the predefined academic calendar and examination procedures through continuous assessment and a letter grade system. This academic calendar is prepared well in advance and ensures 90 days compulsory class room teaching, one week for a mid semester Test and two weeks for End Semester Examination for each semester in a session.

- 2.3.2 Does the university provide course outlines and course schedules prior to the commencement of the academic session? If yes, how is the effectiveness of the process ensured?

The University provides the "Curriculum and Scheme of Courses" document which is uploaded for each program on the University website. Additionally, the faculty provides a copy of the evaluation scheme, course blow up and syllabus at the beginning of the semester to all the students. The curriculum and instructional strategies are reviewed and approved by the senate and its other bodies periodically before release at various levels and stages. 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 curriculum design is updated. The process goes through its checks and balances with the curriculum scheme and syllabus reviewed by Board of Studies (BOS) followed by Senate Undergraduate/Postgraduate Committee (SUGC/SPGC), Senate and approval of the Board of Governors (BOG).

The effectiveness of the process is ensured by verification of design 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. 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 feedback from students and faculty members regarding the effectiveness and applicability of the curriculum, with regard to the documented needs. Necessary changes, if required, are made to ensure that the design conforms to defined needs of the students. Wherever required, additional instructional sessions and allied inputs are arranged for students. 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.

- 2.3.3 Does the university face any challenges in completing the curriculum within the stipulated time frame and calendar? If yes, elaborate on the challenges encountered and the institutional measures to overcome these.

The University follows 90 teachings for each semester and the courses have been designed to be completed in 45-50 lectures (3 lectures per semester course) for each course. The faculty prepares a blow up giving lecture wise detail of the topics to be covered and in most cases completes all the teaching requirements in the stipulated time. In exceptional circumstances when a teacher has to proceed on leave, he/she either makes alternative arrangements or engages extra hours to complete the course.

- 2.3.4 How learning is made student-centric? Give a list of participatory learning activities adopted by the faculty that contributes to holistic development and improved student learning, besides facilitating life-long learning and knowledge management.

The students are encouraged to pick up projects with a faculty mentor. Students are allowed to use the labs and workshop beyond office hours to carry out their project work. University also provide financial aid for fabricating these types of projects and participating in national and international events

This is also accomplished through delivering of Seminars by students to students and faculty through the organisation of technical events and festivals and through the activities of various societies existing in the University. The Tech Fest organized annually gives a great opportunity to students to work on projects which satisfy their intellectual needs. The Literary Society (LS) inculcates literacy tastes, to improve oratorical, communication and sublime skills. This Society also brings out the University Magazine. Music and Dramatic Socdiety (MUDRA) hones the extra-curricular skills of students in the area of Music, Dramatics and developing managerial prowess contributing towards their overall personality. In each academic year, it organizes several functions such as MUDRA Nite, Izhaar, Satunalia, Acumen, etc. Society for Promotion of Indian Classical Music and Culture Amongst Youth (SPIC MACAY) organizes functions through out the country in which great artists give performances and demonstrate to students/youth the values of our culture through LECDEM Lectures.

- 2.3.5 What is the university's policy on inviting experts / people of eminence to deliver lectures and/or organize seminars for students?

The University invites large number of experts from varied fields to interact with students. The evaluative report of the department's list several such visits by eminent persons who visited us each year for delivering lectures or organizing seminars for the students and the faculty. The list of seminars organized during 2013-14 is appended at **Annexure-V.**

- 2.3.6 Does the university formally encourage blended learning by using e-learning resources?

The e-learning resources are handled centrally by the University Library housed in a centrally air conditioned spacious premises covering an area of 25,000 square feet. The library has 2532 print theses, 4973 bound journals, 4284 Standards and 3500+e-theses. All the theses since 2006 are available on D-Space server and can be accessed from anywhere on the globe. The library currently subscribes to about 6358 e-journals and 78 print journals. E-journals are received under UGC-Infonet program and directly

from supplier/publishers. The library remains open 24X7 throughout the year, including the gazetted holidays. Most of the library operations are automated. Library catalogue (OPAC) can be searched from anywhere and subscribed e-resources can be searched from the Campus only.

All theses of PhD and PG programs are available in digitized format. Digital Resource Centre provides place for faculty and group of students for working on their library learning based assignments. The library has separate reading halls, including one exclusively for faculty and research scholars. The Library is equipped with state of the art facility which includes 200 nodes for Wi-Fi network in addition to wired connectivity. A number of computers are dedicated for library users. Resources like digital scanners, printers, photocopiers and surveillance system for security etc. are available.

All online resources and services can be accessed through its website <http://cl.thapar.edu>. The library also manages the University's digital archive Dspace@TU which can be accessed at <http://dsapce.thapar.edu:8080/dspace>. Research paper/articles which are not available in the subscribed e-journals and print journals are procured by the library on request through Document Delivery Service (DDS). Library interacts with other libraries and agencies as NISCAIR for procuring research articles.

- 2.3.7 What are the technologies and facilities such as virtual laboratories, e-learning, open educational resources and mobile education used by the faculty for effective teaching?

All academic departments and schools have virtual laboratories for some courses wherever required. Several faculty members have developed open online educational resources for students. The faculty also uses e-content, case studies etc. The students are provided with the e-content through national and international portals such as:

- NPTEL <http://nptel.iitm.ac.in>
- Stanford Engineering Everywhere (SEE) <http://see.stanford.edu/>
- MIT Open Courseware <http://ocw.mit.edu/index.htm>
- MOOC lecture series

- 2.3.8 Is there any designated group among the faculty to monitor the trends and issues regarding developments in Open Source Community and integrate its benefits in the university's educational processes?

The University has a designated group of faculty consisting of all Heads of Departments and Schools who get together as members of the Library Committee and periodically monitors the development in the open source community and integrate its benefits in the University's educational processes. The faculty are encouraged to develop course materials

and upload on the internet or intranet for the larger benefit of the student community. Several faculty members have developed such course materials.

A Library Committee is a recommending body on major library and archives related policies including developments in the open source community. It also reviews activities of the Library, and provides guidance. Annual subscription lists of current journals are also discussed and recommended by the Library Committee. The Library Committee is presided over by the Director, and all Deans, and Heads of the academic departments and schools are ex-officio members of the Library Committee. 2-3 student representatives are also nominated on the Committee.

2.3.9 What steps has the university taken to orient traditional classrooms into 24x7 learning places?

Most of the lecture halls are equipped with multi-media projectors and sound system. Each faculty member has been given a laptop to augment the class-room teaching through IT. University has also an auditorium of 500 students with G-SAT mechanism where live telecast of important events are shown to students.

2.3.10 Is there a provision for the services of counsellors / mentors/ advisors for each class or group of students for academic, personal and psycho-social guidance? If yes, give details of the process and the number of students who have benefitted.

The University has a counseling cell which is chaired by a Chief Student Counselor appointed by the Director. Each department/school nominates faculty member(s) to this cell on the advice of the Chief Student Counselor. General information is sent out to all students of the department informing them of the services extended by the cell and inviting them to meet the faculty coordinator of the department. The students are encouraged to seek guidance on academic, general or psychological issues, if necessary.

The semester wise results are forwarded to the Student Counselor of the department by the Academic Section who prepares a list of students whose performance is observed to be below average or poor. Such students are then invited to meet the counselor or any faculty member of their choice on a fixed date and time (changes possible on request of the student). Such meetings are arranged at least twice in a semester and are chaired by the Head of the Department and may include anybody who might be of help to the student. The students are advised to improve performance and are given suggestions or options for clearing their backlog courses. The advising process is designed to ensure that each student selects a set of courses during each semester that meets minimum grade requirements and which can result in the student making efficient and orderly progress in meeting the academic requirements as listed in the course scheme. The advising process

also helps to identify and solve problems the student may be confronting in achieving the educational objectives. The student academic Counselor is also a one point contact for issues related to academic performance or any other issues faced by the students. The students are encouraged to meet him/her to seek guidance on any matter related to academic performance. Individual faculty members routinely spend time with students during and after classes discussing any issues related to the course, student problems, and advice them on all matters as desired related to academic, placement, industrial training and career goals. Faculty members are often members of co-curricular activities in the department and provide ample opportunities for faculty to answer student questions in an informal environment.

The details of these activities are available with each department/school and will be made available during the visit of the expert committee.

- 2.3.11 Were any innovative teaching approaches/methods/practices adopted/put to use by the faculty during the last four years? If yes, did they improve learning? What were the methods used to evaluate the impact of such practices? What are the efforts made by the institution in giving the faculty due recognition for innovation in teaching?

All the courses include imparting instructions through lecture and tutorial method. The students also learn about a course through Laboratory assessment, Seminars, Projects and other Hands-on-Experience. They are also encouraged to survey the literature about a particular course. They also learn some of the courses through experimentation. Lecture rooms are equipped with multimedia facilities like LCD projectors, audio systems and OHP's etc in the University and most of the faculty members use these facilities to the benefit of the students. Students and faculty keep pace with the recent developments in the subjects through IT-enabled education system, Projects, Seminar Assignments and Research Projects. All these efforts have improved the learning processes.

The impact of these activities is evaluated by a student response survey now being completed twice in each semester (in the middle and at the end of the semester) where students give their honest feedback about the teaching approaches/methods/practices adopted/put to use by the faculty. The response is obtained online and is blind. The responses are reviewed by Director, Dean and the Head of the Department and corrective action is initiated where necessary.

The University has made several efforts in giving the faculty due recognition for innovation in teaching. The University runs a performance incentive scheme wherein good performance in teaching and research is suitably rewarded. The scheme is operational since 2006 and several faculties have been recognized for their efforts.

2.3.12 How does the university create a culture of instilling and nurturing creativity and scientific temper among the learners?

For overall development of the students and creating a culture of instilling and nurturing creativity and scientific temper among the learners, various academic, co-curricular and extra-curricular activities are available on the Campus. The University has 32 Societies/Departmental Societies/Clubs/Student Chapters which function under the faculty members as presidents and students. The students have the option to join one or more of these societies to fulfill their creative and scientific needs. Annual TECH fests are organized for developing creativity and scientific temper among students.

The Venture Lab has been conceptualized in collaboration with the Venture Lab International of the University of Twente, the Netherlands with a focus on developing holistic entrepreneurial ecosystem that will work towards bringing back the entrepreneurial spirit of Punjab and the surrounding areas by providing technological, financial, infrastructural and strategic support to budding social and commercial entrepreneurs from within and outside Thapar Institute of Engineering & Technology University. The Centre for Innovation, Incubation and Entrepreneurship (CIIE), IIM (Ahmedabad) is also collaborating with Venture Lab - Thapar to establish it as a vibrant and leading incubation centre in Northwestern region of India. As a part of the same an Entrepreneurship Development Cell for students has also been opened at the University.

The Mission is "To be preferred evangelist and ideation platform of North-Western India to solve regional problems by supporting at least 50 start-ups every year for next three years and contribute towards making TU the most entrepreneurial university of India"

Entrepreneurship Development Cell- TU

Nurturing tomorrow's innovators and entrepreneurs requires an enriched university environment attained by bridging the culture of academe with the culture of the marketplace while building on the strengths of both. EDC - TU is working as a part of Venture Lab for techno- entrepreneurial initiatives in Thapar Institute of Engineering & Technology University with the following as its major activities

Objectives:

- To motivate the budding innovators to convert their ideas to reality.
- To guide the students in design, prototyping and evaluating their products/idea.
- To provide financial support, Logistics and congenial workplace for technical incubates.
- To bridge the gap between Industry and academia.
- To promote Thapar Institute of Engineering & Technology University as a brand in the global marketplace.

Activities:

- Creating awareness among the students for their own business plans, through Workshops and Expert lectures from successful entrepreneurs.
- Conducting contests to identify / shortlist the potential entrepreneurs.
- Visit to new start-ups to learn from their experiences
- Calling Angel investors, financial houses and TU alumni to financially support the selected students.
- Prepare the students for National/International level events related to entrepreneurship.
- Interaction among universities and businesses in establishing partnerships for their mutual benefit.
- Help to design and evaluate R&D investment and educational strategies that advance entrepreneurship and innovation for economic growth and social well-being.

MAJOR EVENTS ORGANIZED

Ankurit-2015: A SEED MONEY COMPETITION

“Ankurit-2015”, a SEED MONEY COMPETITION, was organized by Venture Lab to foster entrepreneurship and help early stage start-ups to kick-start their business venture at LM Thapar School of Management, Derabassi Campus, Near Chandigarh on February 28, 2015

Through this event, we supported passionate individuals who have a credible business idea and a clear intent to set up an enterprise. Total Seed money worth Rs.5 lakhs was provided to successful candidates who are at preliminary stage of venture creation for sustaining them during the conceptualization phase. Along with that, office like space was offered to these start-ups at Venture Lab-Thapar, the newly established state-of-the-art incubation centre.

Details & updates regarding the event are as follows:

Process:

Step I:	Participant(s) will submit Executive Summary of Business Idea along with their credentials. (Template attached with this mail)	February 12, 2015
Step II	The shortlisted 30 teams will be provided half day competency building workshop in collaboration with the Center for Innovation Incubation & Entrepreneurship (CIIE), IIM - Ahmedabad	February 18, 2015
Step III	15 Finalists would be called to present detailed Business Plan to the panel of Judges for the grant of Seed Money.	February 28, 2015

The Event was judged by a panel of experts including: angel investors, successful entrepreneurs and a commendable chartered accountant.

Participation: We received entries from institutes like: Narseemonjee Institute of Management Studies (NMIMS), Mumbai; IIT (Delhi), BITS Pilani; NIIT University, Thapar Institute of Engineering & Technology University and corporate early age startups. The startups are from various fields like education, travel, legal, health etc. and have

immense potential to make it a huge success. Venture Lab-Thapar is helping early stage startups and entrepreneurial minds to shape their journeys fruitfully.

Results:

Startup	Description	Institution	Position	Seed Grant Given
edulyft's	edulyft aims to clear the clutter of chaotic test preparation routines	BITS Pilani	1	Rs.1,50,000
bananamedia	Banana Media shows how can notebooks be used as a marketing tool??	IIT (Delhi)	2	Rs.1,00,000
Srjna	Experiential learning to enable students to understand the concepts rather than mugging them up	IIT (Delhi)	3	Rs.1,00,000
Bhooka.in	Help people discover the new varieties of street food. Table reservation and food pre-ordering is a feature that no website is having till date, which saves a lot of time.	Thapar Institute of Engineering & Technology University, Patiala	4	Rs.50,000
Acha tutor	Helps find the right kind of tutors for your needs with acha tutor at your rescue.		5	Rs.50,000
eWools	Portal for marketing hosiery and woolen garments from Ludhiana		6	Rs.50,000

2.3.13 Does the university consider student projects mandatory in the learning programme? If yes, for how many programmes have they been (percentage of total) made mandatory?

- Number of projects executed within the university
- Names of external institutions associated with the university for student project work
- Role of faculty in facilitating such projects

Outcome based education has become the corner stone of the engineering programs offered by Thapar Institute of Engineering & Technology University, Patiala. The new teaching pedagogy lays emphasis on applying engineering skills through relevant engineering design projects, improving team-working skills and awareness of issues relating to ethics and professionalism. In order to achieve this objective, Thapar Institute of Engineering & Technology University has partnered with Trinity to implement a

‘Contemporisation Program’ to modernize and enrich the current education curriculum to a significantly higher paradigm. TU will harmonize the curriculum of the undergraduate engineering programs to synchronise completely with Trinity.

The projects aim to broaden and deepen the student’s knowledge and understanding of the chosen specialism. Subjects are studied in much greater detail and students undertake real-life, practical projects. A student who chooses Civil, Structural and Environmental Engineering could end up testing the pre-cast concrete used to build an urban railway infrastructure, a student who chooses Computer Engineering, might design a special purpose microprocessor.

All the undergraduate engineering programs have a mandatory project semester wherein students spend one full semester in industry and work on various projects. All students of these programs are required to spend a full six month’s semester in the industry completing an industrial project under the joint supervision of industry supervisors and University faculty. This provides a system of education that formally integrates academic studies with related work experience.

100% of the undergraduate engineering students take up project work in industry and some of the departments also have system design projects in the final year of the course of study. All the postgraduate students undertake thesis/dissertation to be eligible for award of degrees.

Over 150 companies are involved in the project semester and all the work in the project is completed under the joint guidance (majorly industry supervisor) of the industry supervisor and the faculty supervisor.

Other than this, all the students undertake project work in the summer after the completion of the 2nd year. These projects are offered both at the University as well as industry.

2.3.14 Does the university have a well qualified pool of human resource to meet the requirements of the curriculum? If there is a shortfall, how is it supplemented?

Faculty of a University is the nucleus of the academic programme and guardian-angel of maintaining the highest standards. The University has hired the best brains to meet the requirements of the curriculum. Special efforts are made to induct, nurture and retain faculty. The University has been able to attract a large number of talents and the faculty strength has seen a steady growth over the years. The University has attracted a large pool of fresh PhD from IIT’s and NIT’s in the past few years.

Reputation and recognition of an academic institution largely depends on its faculty. We have some outstanding faculty with many national recognitions and laurels to their credit.

The faculty has kept pace for disseminating knowledge, upgrading qualification, and publishing work in journals, contributing to seminars/conferences, investigating research projects and taking up consultation projects. The University always lays special emphasis on faculty search and recruitment. To provide impetus to the effort and facilitate selection and induction of highly qualified faculty members at the entry and higher levels, we entertain applications throughout the year.

The University has also recruited eminent Visiting Professors to supplement the teaching and research programs. In case of shortfalls in some department, we have hired guest faculty from eminent institutions (mostly for MBA program) as well as ad-hoc faculty positions for 1 to 2 years.

2.3.15 How are the faculty enabled to prepare computer-aided teaching/ learning materials? What are the facilities available in the university for such efforts?

TU is in the process of establishing a Centre for Academic Practice and Student Learning (CAPSL) at Patiala in partnership with Trinity College Dublin. CAPSL will work on the presentation and lecturing skills and bring in creativity and imagination in teaching. This centre will be manned by senior TU and TCD academic during the initial period and more senior faculty from TU will be associated who will eventually take over the activities of the centre. All academic staff will take up 3 to 5 certification modules at CAPSL Centre. The certification course is based on the premise that everybody educating our students at Thapar should be committed to and supported in achieving an excellent student learning experience. We will expose our entire faculty to in-house modules during the next 3 to 5 years. E-learning would be introduced through CAPSL.

All the faculty members of the University have been issued high-end laptops to assist them in teaching and research. The laptops are replaced by the University every 4 years. University has its managed LAN switching and is maintained by University itself. The LAN has WiFi and wired nodes. We have 2000 wired and 3000 WiFi nodes. University has very high-end core switching and routing capabilities. University provides access to different services like E-governance, WebKiosk, Websites and access to various servers (Windows/Linux/Sun based) for computing and storage purposes. With the growth of users, IT services and increasing internet bandwidth demand, the university has scaled up the switching capabilities and implemented latest Managed wired and WiFi access. The university has implemented private Cloud to provide high quality services to end user and for ease of management. University is committed to provide state-of-the-art IT infrastructure and services.

- 2.3.16 Does the university have a mechanism for the evaluation of teachers by the students / alumni? If yes, how is the evaluation feedback used to improve the quality of the teaching-learning process?

Faculty is encouraged to excel in all fields of academics and scholarship. The academic performance of the faculty is monitored through the student's response survey. The research performance has been measured through research funding, publications and numbers of PhDs and Masters Students. The performance of the faculty has been ranked through a rigorous process with incentives for superior performance.

The evaluation of faculty by a student response survey is being completed twice in each semester (in the middle and at the end of the semester) where students give their honest feedback about the teaching approaches/methods/practices adopted/put to use by the faculty. The response is obtained online and is blind. The responses are reviewed by Director, Dean and the Head of the Department and corrective action is initiated where necessary.

2.4 Teacher Quality

- 2.4.1 How does the university plan and manage its human resources to meet the changing requirements of the curriculum?

The largest constraint in the growth of higher education is lack of faculty. The University makes special efforts for recruitment and retention of quality faculty. The desired profile of the faculty at all levels has been clearly defined. The positions have been publicized widely through print and electronic media. Better qualified faculty members apply for various positions at TU. A meticulous process of evaluation that includes seminar presentation and personal interviews with a carefully chosen panel of experts is adopted. All full time positions offered are with Ph D degrees. To provide impetus to the effort and facilitate selection and induction of highly qualified faculty members at the entry and higher levels, we entertain applications throughout the year.

2.4.2 Furnish details of the faculty

Highest Qualification	Professors		Associate Professors		Assistant Professors		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							
D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D.	26	3	27	7	84	30	177
M.Phil.	NIL	NIL	NIL	NIL	NIL	NIL	NIL
PG	NIL	NIL	04	01	34	16	55
Temporary teachers							
Ph.D.	07	03	NIL	NIL	NIL	NIL	10
M.Phil.	NIL	01	NIL	NIL	NIL	NIL	01
PG	15	13	NIL	NIL	NIL	NIL	28
Part-time teachers							
Ph.D.	NIL	NIL	NIL	NIL	NIL	NIL	NIL
M.Phil.	NIL	NIL	NIL	NIL	NIL	NIL	NIL
PG	NIL	NIL	NIL	NIL	NIL	NIL	NIL

2.4.3 Does the university encourage diversity in its faculty recruitment? Provide the following details (department / school-wise).

Department / School	% of Faculty from the same university	% of Faculty from the universities within the state	% of Faculty from the universities outside the state	% of Faculty from other countries
DBTES	8%	8%	85%	0%
CHED	6%	6%	89%	0%
CED	47%	13%	40%	0%
CSED	36%	21%	43%	0%
ECED	0%	57%	43%	0%
EIED	0%	44%	56%	0%
MED	8%	31%	62%	0%
SEE	0%	43%	57%	0%
SCBC	0%	22%	78%	0%
SBSBS	0%	45%	55%	0%
SMCA	6%	19%	75%	0%
SPMS	0%	20%	80%	0%
LMTSOM	0%	13%	81%	6%
TOTAL	9%	27%	63%	0%

- 2.4.4 How does the university ensure that qualified faculty are appointed for new programmes / emerging areas of study (Bio-technology, Bio-informatics, Material Science, Nanotechnology, Comparative Media Studies, Diaspora Studies, Forensic Computing, Educational Leadership, etc.)? How many faculty members were appointed to teach new programmes during the last four years?

The University has set standards for imparting quality education and thus induct faculty with high academic and research profiles, a minimum qualification of Phd, urge to excel in their respective fields and serve the students and the University with dedication and high quality standards. All the faculty members inducted are qualified and competent teachers in all the academic courses. We have made provision to recruit eminent persons of repute by invitation. The University has also made provisions to visit Institutions of high repute (IIT's/IISc) to attract and recruit faculty in the emerging areas.

- 2.4.5 How many Emeritus / Adjunct Faculty / Visiting Professors are on the rolls of the university?

There are four Emeritus / Adjunct Faculty / Visiting Professors are on the rolls of the university

- 2.4.6 What policies/systems are in place to academically recharge and rejuvenate teachers (e.g. providing research grants, study leave, nomination to national/international conferences/ seminars, in-service training, organizing national/international conferences etc.)?

Seed money of Rs. 5.0 lacs is being provided to faculty to initiate the research activity in the University (applicable for holding Ph.D. degree). Faculty is allowed to undertake Study leave / sabbatical leave / deputation to National / International Seminars / Workshops as per UGC guidelines and arranging national / international conferences department wise. They are encouraged to participate in Faculty Development Programmes organized by IIT's, IISc for their career growth.

- 2.4.7 How many faculty received awards / recognitions for excellence in teaching at the state, national and international level during the last four years?

66 faculty members received awards / recognitions for excellence in teaching and research at the state, national and international level during the last four years. The details are provided at **Annexure-VI.**

2.4.8 How many faculty underwent staff development programmes during the last four years (add any other programme if necessary)?

Academic Staff Development Programmes	Number of Faculty
Refresher Courses	51
HRD Programmes	04
Orientation Programmes	21
Staff Training conducted by the university	53
Staff Training conducted by other university	41
Summer/Winter School, workshops, etc.	32

2.4.9 What percentage of the faculty have

- been invited as resource persons in Workshops / Seminars / Conferences organized by external professional agencies? - **30%**
- participated in external Workshops / Seminars / Conferences recognized by national / international professional bodies? - **70%**
- presented papers in Workshops / Seminars / Conferences conducted or recognized by professional agencies? -**70%**
- teaching experience in other universities / national institutions and other institutions? **35%**
- industrial engagement? **15%**
- international experience in teaching? **10%**

2.4.10 How often does the university organize academic development programmes (e.g.: curriculum development, teaching-learning methods, examination reforms, content / knowledge management, etc.) for its faculty aimed at enriching the teaching-learning process?

Each academic unit organized conferences, seminars, symposiums, workshops and training programs every year which are aimed at enriching the teaching-learning process.

The details of the some such program organized in and 2012-13 & 2013-14 are appended at **Annexure-VII.**

- 2.4.11 Does the university have a mechanism to encourage
- * Mobility of faculty between universities for teaching?
 - * Faculty exchange programmes with national and international bodies?
- If yes, how have these schemes helped in enriching the quality of the faculty?

One of the areas of focus in the last five years has been to improve the research image of the University. To improve the visibility of the University in the research community, the University organizes large conferences and seminars and invites eminent researchers from all over the world. The University has consciously attempted to synergize the activities of the Group and the University. The flagship unit of the Group, Crompton Greaves Ltd., has partnered with the University for a wide ranging collaboration including, undergraduate and postgraduate projects, sponsorships of Ph D work and research support. Crompton Greaves and Thapar Institute of Engineering & Technology University have signed a memorandum of understanding to formalize these efforts. The program is very beneficial for both the partners. Attempts are on for collaborations with other partners of the Group. The faculty has been encouraged to be active in research. The process of release of funds has been streamlined. The publications of the faculty are prominently displayed. The faculty members on the verge of completion of their doctoral work have been freed from teaching for one semester.

To bring in fresh ideas in research faculty have been encouraged collaboration with other Institutions and researchers. To facilitate such collaborations MoUs with reputed universities and Institutions have been signed. The faculty are encouraged to visit those institutions both in India and abroad. A scheme for facilitating the collaboration has been initiated. The travel costs are borne by the University if the faculty member is supported of subsistence by the partner organization. Some faculty members have already started to take advantage of the scheme.

Several possible sponsors of research work, such as Department of Science and Technology, Board of Research in Nuclear Sciences have been invited to the campus. They have conducted the project review meetings in the past and have presented their funding strategies to the faculty. This has resulted in submission of a large number of proposals to these agencies.

2.5 Evaluation Process and Reforms

- 2.5.1 How does the university ensure that all the stakeholders are aware of the evaluation processes that are in place?

The evaluation process is published on the University Information brochure and the University website. Additionally, the faculty is required to declare its grading policy detailing the marks distribution for each component at the beginning of the semester. The

faculty also apprise the students of the complete curriculum / lecture wise blow up in the beginning of the session and through out of the course teaching as well.

2.5.2 What are the important examination reforms initiated by the university and to what extent have they been implemented in the university departments and affiliated colleges? Cite a few examples which have positively impacted the examination management system.

All students at Thapar undertake pre-determined credits during each year of the degree programme. Each course has an individual weight reflected by assigning some credits, the amount dependent on the level of effort involved. TU follows a semester wise examination system. The final exams for all the courses undertaken during the year are held in December and May each year. In order to pass the annual examinations, students must have achieved at least C- grade in all courses undertaken during the semester. Some courses are assessed entirely on the basis of continuous assessment and it is not possible to take a supplemental examination in these cases.

Students who fail the annual examination are required to take a supplemental examination in all courses in which they have not met the requirements. In order to pass the supplemental examinations, students must obtain a minimum pass grade.

Functioning of the examination board

TU is in the process of establishing an examination board. The concerned instructors will prepare the question paper along with model solutions to each question and give it to a faculty colleague from the cognate area who countersigns it by verifying the questions and solutions provided. The same is then sent for vetting to an outside expert (Trinity or of that stature). This will be done much in advance as the outside expert might take up to 4 - 6 weeks to review the question papers and solutions and give his/her feedback. After the conduct of the examination, the marks will be uploaded on an academic software which generates an excel sheet listing the marks obtained by each student in all subjects. The minimum pass marks at TU are required. The external examiner will also review the answer scripts on a sampling basis to check for consistency against the model solutions provided earlier.

The evaluation system is reviewed routinely by the statutory bodies of the University. The reforms are introduced from time to time on need basis after due approval from these bodies and competent authorities. The details of the reforms made are all available in the official minutes of the meetings. The University follows a continuous evaluation pattern wherein the students are evaluated on the basis of mid semester tests, quizzes, home assignments, tutorials, viva voce examination and end semester examination.

The concerned course instructor decides the evaluation method and the University only has a broader control on these practices. However, each instructor is required to maintain a course file with details of what type of evaluation method has been used.

New Letter grades system is introduced and grades awarded to the students are as indicated below. Each letter grade indicates the level of performance in a course and has a grade point for purposes of computing the CGPA, as given below.

Letter Grade	Performance	Grade Point
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- grades: These grades 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 practical's (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.

2.5.3 What is the average time taken by the university for declaration of examination results? In case of delay, what measures have been taken to address them? Indicate the mode / media adopted by the university for the publication of examination results e.g. website, SMS, email, etc.).

The examination results are declared within 15 days of the conduct of examinations. No delay has been experienced so far. The examination results being published on website called WEB KIOSK (INTRANET). The results published on net are for immediate information to the examinees. These cannot be treated as final result. Original Grade Cards have been issued by the University separately under the signature of Registrar and are authentic proof of academic performance.

2.5.4 How does the university ensure transparency in the evaluation process? What are the rigorous features introduced by the university to ensure confidentiality?

The evaluation procedure for each course is completely transparent. The faculty members are expected to announce the evaluation stages at the beginning of the semester along with their respective weightings. The mid-semester, end semester examinations are conducted centrally through the office of the Controller of Examination and a date sheet is released for the purpose. Other components of evaluation are planned by the concerned course instructor. The answer sheets for all the written exams including the end semester exam are shown to the students and any discrepancies if any are corrected after the student approaches the faculty about it. The answer sheets of quizzes and mid-semester examinations are returned to the students. The end-semester answer sheets are submitted to the Academic Section, Registry of the University and these are stored for six months and thereafter destroyed. The question papers of mid-semester, end semester examinations are also preserved in Central Library of the University.

The detailed break-up of marks obtained by each student is entered into central software and each student has access to his/her score with a unique login ID and password. The student can view his marks for each component of the evaluation on a continuous basis.

2.5.5 Does the university have an integrated examination platform for the following processes?

- Pre-examination processes – Time table generation, OMR, student list generation, invigilators, squads, attendance sheet, online payment gateway, etc.
- Examination process – Examination material management, logistics, etc.

- Post-examination process – Attendance capture, OMR-based exam result, auto processing, generic result processing, certification, etc.

Yes, the university has an integrated examination platform.

The registered courses of all the programmes of each semester are centrally managed to prepare the data sheets for time table, students list, room wise allocation, invigilators list and attendance sheets. Answer sheets are supplied to examination centres in advance. Time tables are displayed at crucial points as well as entrance of the examination centres and rooms. This information is also available online through University web kiosk.

The examination process is looked after by an examination centre superintendent, deputy superintendents and Assistant superintendents. The concern faculty of the courses are required to submit the question papers 20 minutes before the start of the examination. The answer sheets are distributed room wise along with question papers, attendance sheets and date sheet to the invigilators. Students are allowed up to 30 minutes late to the scheduled time of the examination. The attendance of the students will be taken and submitted to the examination centre. After stipulated time, the answer sheets are collected by the invigilators and submitted to the concerned course instructors directly for the mid-semester examination and through the examination centre for the end-semester examination with proper record.

The course instructors will announce the time and date to review the evaluated answer sheets to the students. Once students reviewed the answer sheets, the marks obtained are recorded and displayed in the notice board of the Department. The marks are entered in the web kiosk and published which can be viewed online by the students. The answer sheets mid-semester examinations are returned to the students. The end-semester answer sheets are submitted to the Academic Section, Registry of the University. The question papers of mid-semester, end semester examinations are preserved in Central Library of the University. The concerned faculty or faculty coordinator of core course, then grant the grades by considering the guidelines of the University through online. These grades will be approved by the Controller of Examinations. Then these grades will be appeared to the students in web kiosk. Hard copy of semester grades will be prepared and distributed to the students through the concerned departments/schools.

2.5.6 Has the university introduced any reforms in its Ph.D. evaluation process?

Every admitted candidate shall have to do course work for a minimum of one semester. Only those candidates who successfully complete the course work within one year of admission and with a minimum CGPA of 6.00 on 10.00 point scale shall be registered in the PhD programme. Every candidate will be required to submit research proposal, duly recommended by the Supervisor(s), after successful completion of the course work. The Research proposal is then considered by the Senate Research Board (SRB). A doctoral committee then monitors the progress of the student as per guidelines issued by DoRSP. The student is required to submit a proof of acceptance/publication of at least two research papers in refereed journals of repute before submitting the synopsis (Journals which are in

SCI are only considered and for PhD theses relevant to Social Sciences and Humanities SSCI/AHCI (Thomson Reuter) journals shall also be considered). The Doctoral Committee submits a panel of minimum of eight examiners consisting of four examiners from India and four from abroad to the Director through DoRSP for the evaluation of the thesis and the Director appoints two examiners, one from India and one from abroad out of the panel. Each examiner submits a written report in the prescribed proforma which is considered by the doctoral committee. In case reports of both examiners are positive, the Doctoral Committee then prepares a gist of the reports of the examiners for the consideration of the Director in order to take further decision regarding the conduct of viva-voce. The viva-voce examination is compulsory for all the students and is conducted jointly by the Supervisor(s) and one of the external examiners. After the successful completion of evaluation process, the candidate shall submit the final thesis to the University Library for hosting the same in INFLIBNET

2.5.7 Has the university created any provision for including the name of the college in the degree certificate?

Not Applicable

2.5.8 What is the mechanism for redressal of grievances with reference to examinations?

Functioning of the examination board

TU is in the process of establishing an examination board. The concerned instructors will prepare the question paper along with model solutions to each question and gives it to a faculty colleague from the cognate area who countersigns it by verifying the questions and solutions provided. The same is then sent for vetting to an outside expert (Trinity or of that stature). This will be done much in advance as the outside expert might take up to 4 - 6 weeks to review the question papers and solutions and give his/her feedback. After the conduct of the examination, the marks will be uploaded on an academic software which generates an excel sheet listing the marks obtained by each student in all subjects. The minimum pass marks at TU are required. The external examiner will also review the answer scripts on a sampling basis to check for consistency against the model solutions provided earlier.

The answer sheets are shown to the students immediately after evaluation and their queries are addressed there and then to their entire satisfaction. The system has designed to ensure complete transparency of evaluation process. The faculty members are required to display detailed marks of all students in all components for each course. The students are free to approach the course instructor in case of any discrepancies in the evaluation system.

The students who are medically unwell for giving the mid-semester examination are given the opportunity to appear for makeup examination conducted before end-semester examinations. Similarly, the students who are unwell for giving the end-semester examinations are given the opportunity to apply for I-Grade.

2.5.9 What efforts have been made by the university to streamline the operations at the Office of the Controller of Examinations? Mention any significant efforts which have improved the process and functioning of the examination division/section.

The academic calendar of the University gives the schedule of the mid-semester examination and end-semester examination. The office of Controller of Examination has also being informed the departments and schools that the schedule for quizzes and laboratory examinations. The office suggested that the quiz-1 should be conducted before mid-semester examination and quiz-2 should be conducted in between mid-semester examination and end-semester examination. The laboratory examinations should be preferably in the last week of the academic calendar of the particular semester. The concerned authorities follow the calendar and complete their activities related to examinations under the supervision of the Office of the Controller of Examination. Student Response Survey (SRS) fill by the students those who are not fill in given scheduled time by Dean Academic Affairs Office. Checklists are prepared for conduct of examinations as well as duties to be performed by the Assistant superintendents during examinations. Allocation of examination duties for Class IV staff also. Medical facility has been provided along with ambulance during the examinations. Drinking water facility has also been provided in the examination rooms. Backup power supply has also been provided during the examinations with the help of diesel power generating set.

A Committee is constituted by the Director for Prevention of Unfair Means (CPUM) for each academic year to deal with the cases of alleged misconduct and use of unfair means in all the examinations conducted by the University. CPUM shall enquire into the cases of attempt of unfair means in the examinations. CPUM will take all necessary steps, as deemed fit, for the prevention of unfair means and submit its recommendations after identifying clearly the category of nature of the offence as listed in Regulations to the DoAA for consideration and necessary order.

2.6. Student Performance and Learning Outcomes

2.6.1 Has the university articulated its Graduate Attributes? If so, how does it facilitate and monitor its implementation and outcome?

Yes the University has articulated graduate attributes for each program as defined by the National Board of Accreditation. These are:

1. Scholarship of Knowledge
2. Critical Thinking
3. Problem Solving

4. Research Skill
5. Usage of modern tools
6. Collaborative and Multidisciplinary work
7. Project Management and Finance
8. Communication
9. Life-long Learning
10. Ethical Practices and Social Responsibility
11. Independent and Reflective Learning

The step by step process for assessing graduate attributes outcomes is tabulated below:

Step 1: The Program coordinator analyses each outcome into elements (different abilities specified in the outcome) and a set of attributes are defined for each element (actions that explicitly demonstrate mastery of the abilities specified). In addition, generate well designed surveys to assess the outcome.

Step 2: For each outcome define performance indicators (Assessment criteria) and their targets.

Step 3: Identify/select courses that address the outcome (each course contributes to at least one of the outcomes). Hence, each outcome is assessed in several courses to ensure that students acquire an appropriate level in terms of knowledge/skills of an outcome.

Step 4: The module coordinators collect the qualitative and quantitative data and were used for outcome assessment in a continual process.

Step 5: The Program Assessment Committee analyze the collected data. If the assessed data meets the performance targets which are specified in step 2, the outcome is attained.

Otherwise, go to step 6.

Step 6: The Department Academic Affairs Committee recommends content delivery methods/course outcomes/ curriculum improvements as needed.

2.6.2 Does the university have clearly stated learning outcomes for its academic programmes? If yes, give details on how the students and staff are made aware of these?

Yes the University has clearly stated the learning outcomes for each academic program and each course.

The program outcomes of the department are disseminated through website and are displayed at prominent places in the department. The program outcomes have been written in English. It has been displayed at all prominent places in the Department for exposure to one and all. All the employees of the Department have been explained the meaning of and commitment to achieving these outcomes. It has been ensured that all employees have clearly understood the desired learning outcomes with regard to its meaning, relevance and their commitment to it. Apart from this, the same is disseminated to all the stakeholders of the programs through faculty meetings, student awareness workshops, student induction programs.

2.6.3 How are the university's teaching, learning and assessment strategies structured to facilitate the achievement of the intended learning outcomes?

The teaching, learning and assessment strategies are structured to facilitate the achievement of the intended learning outcomes. The following are the various content delivery methods used to deliver the courses:

- Lecture along with discussions
- Quizzes
- Tutorials
- Demonstrations (Such as model, laboratory, experimental facility, Industrial visits)
- Assignment/ Project
- Presentations
- Reports

In addition to the syllabus mentioned in the curriculum, the students are exposed themselves as they are provided with the e-content through national and international portals such as:

- NPTEL <http://nptel.iitm.ac.in>
- Stanford Engineering Everywhere (SEE) <http://see.stanford.edu/>
- MIT Open Courseware <http://ocw.mit.edu/index.htm>
- MOOC lecture series

The delivery methods are chosen appropriate to meet the Program Outcomes. The generalized mapping of the course delivery methods to the program outcomes is shown in Table below.

<div style="text-align: center;"> Program Outcomes → </div> <div style="text-align: center;"> Content Delivery Methods ↓ </div>	1. An ability to apply knowledge of mathematics, science and engineering										
	2. An ability to design and conduct experiments, as well as to analyse and interpret data										
	3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, and ethical.										
	4. An ability to function on multidisciplinary teams										
	5. An ability to identify, formulate, and solve engineering problems										
	6. An understanding of professional and ethical responsibility										
	7. An ability to communicate effectively										
	8. An ability to understand the impact of engineering solutions in a environmental and societal context										
	9. An ability to engage in life-long learning										
	10. A knowledge of contemporary issues										
	11. An ability to use the, modern engineering tools and techniques										
Lecture along with discussions	√	√	√		√	√	√	√	√	√	√
Quizzes		√		√		√	√			√	√
Tutorials	√	√	√	√	√				√	√	√
Demonstrations		√	√		√		√				√
Assignment/ Project	√	√	√	√	√			√	√		√
Presentations		√	√		√			√			√
Reports		√		√			√	√	√		

2.6.4 How does the university collect and analyse data on student learning outcomes and use it to overcome the barriers to learning?

The University uses various direct and indirect assessment tools to analyse data on student learning outcomes as described below.

1. Direct Assessment Tools

- Home Assignment-Each and every student is assigned with course related tasks during every course work once or twice and assessment will be done based on their performance. Marks are assigned depending on their innovation in solving/deriving the problems.
- Assignment-The assignment is a qualitative performance assessment tool designed to assess students' knowledge of engineering practices, framework, and problem solving. An analytic rubric was developed to assess students' knowledge with respect to the learning outcomes associated with the scenario tool.
- Quiz- Quizzes is a Multiple Choice Questions (MCQ) based examination system that provides an easy to use environment for both Test Conductors and Students appearing for Examination.
- Sessional- This type of performance assessment is carried out during the examination sessions which are held once a semester. The sessional is focused in attaining the course outcomes.
- End Semester Examination-Semester End examination is a metric for assessing whether all the POs are attained or not. Examination is more focused on attainment of course outcomes and program outcomes using a descriptive exam.

2. Indirect Assessment Tools

- Program level statistics- At the end of every academic year annual report is developed where the statistics of students who have participated in professional bodies /student chapters/workshops/seminars/conferences / paper presentations/

internships / industry visit etc. is prepared. This statement is considered to indirectly assess the POs

- Survey reports- Indirect assessment strategies may be easily implemented by embedding them in the end-of-course evaluation form, Alumni Survey and Employer Survey.
 - Graduate/Exit Survey: during the program
 - Alumni Survey: after one year of graduation
 - Employer Survey: after one year of graduation

The relevance of course assessment and evaluation methods towards the attainment of Program Outcomes are tabulated in Table below.

<div style="text-align: center;"> Program Outcomes → </div> <div style="text-align: center;"> ↓ Course Assessment Tools </div>		1. An ability to apply knowledge of mathematics, science and engineering										
		2. An ability to design and conduct experiments, as well as to analyse and interpret data										
		3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, and ethical.										
		4. An ability to function on multidisciplinary teams										
		5. An ability to identify, formulate, and solve engineering problems										
		6. An understanding of professional and ethical responsibility										
		7. An ability to communicate effectively										
		8. An ability to understand the impact of engineering solutions in a environmental and societal context										
		9. An ability to engage in life-long learning										
		10. A knowledge of contemporary issues										
		11. An ability to use the, modern engineering tools and techniques										
Direct Assessment Tools	<i>Home Assignment</i>	√	√	√	√	√	√	√	√	√	√	√
	<i>Assignments</i>	√	√	√	√	√	√	√	√	√	√	√
	<i>Quizzes</i>	√		√		√		√		√		√
	<i>Sessional</i>	√	√	√	√	√	√	√	√	√	√	√
	<i>Semester End Examination</i>	√				√		√		√		√
Indirect Assessment Tools	<i>Program Level Statistics</i>	√				√		√		√		√
	<i>Graduating Student Survey</i>	√	√	√	√	√	√	√	√	√	√	√
	<i>Alumni Survey</i>	√	√	√	√	√	√	√	√	√	√	√
	<i>Employer Survey</i>	√	√	√	√	√	√	√	√	√	√	√

2.6.5 What are the new technologies deployed by the university in enhancing student learning and evaluation and how does it seek to meet fresh/ future challenges?

The University follows a continuous evaluation method and assessment components are a combination of following: (These are indicative figures and the actual weightage could vary from course to course)

- Mid Semester Test - 25%
- Internal Assessment (Quiz, Tutorial, Lab work, Assignment etc.) 30%
- End semester examination 45%

The responsibility to set question paper rests with the concerned course instructor and are set for all written examinations including the mid-semester, end-semester and quizzes.