



2017-18

# HANDBOOK OF INFORMATION

POSTGRADUATE PROGRAMME



# HANDBOOK OF INFORMATION

## POSTGRADUATE PROGRAMME

2017-18



**INDIAN INSTITUTE OF TECHNOLOGY ROPAR**  
Rupnagar, Punjab-140001 (INDIA)  
[www.iitrpr.ac.in](http://www.iitrpr.ac.in)



# CONTENTS

<b>1. Introduction</b>	1
<b>1.1. Background</b>	1
<b>1.2. Departments and Centre</b>	1
<b>1.3. Programmes Offered</b>	1
<b>1.4 Students Entry Number</b>	2
<b>2. Postgraduate Programmes</b>	5
<b>2.1. Academic System</b>	5
<b>2.2. Academic Programmes</b>	5
<b>2.3 General Eligibility criteria for PG Programmes</b>	5
<b>2.4. Admission Procedure</b>	6
<b>2.5 Credit System</b>	7
2.5.1. Credit System	7
2.5.2. Grading System	7
2.5.3. Description of Grades	8
2.5.4. Evaluation of Performance	9
2.5.5. Course Numbering Scheme	11
<b>2.6. Registration and Attendance</b>	11
2.6.1. Registration	11
2.6.2. Registration and Student Status	12
2.6.3. Advice on Courses	12
2.6.4. Registration Validation	12
2.6.5. Late Registration	12
2.6.6. Add, Drop, Audit and Withdrawal from Courses	12
2.6.7. Semester Withdrawal	12
2.6.8. Registration and Fees Payment	13
2.6.9. Registration Record	13
2.6.10. Continuous Absence and Registration Status	13
2.6.11. Attendance Rules	13
2.6.12 Leave rules	13
<b>2.7. Rules and Regulations</b>	13
2.7.1. Absence during the Semester	13
2.7.2. Measures for Helping SC/ST Students	14
<b>2.8. Curriculum and Structure of Programme</b>	14
2.8.1. Credit Structure	14
2.8.2 Minimum CGPA Required for M.Sc., MS & M.Tech. Degree	15
2.8.3. Special Requirement	15
<b>2.9. Performance Requirements and Monitoring</b>	15
2.9.1. Maximum Period for Completing Degree Requirements	15
2.9.2. Guideline for M.Tech. Project Evaluation	15
2.9.3. M.Sc. Continuation and Probation Guidelines	16
2.9.4. M.Tech. Continuation, Probation & Fellowship Guidelines.	16

2.9.5. MS (Research) Continuation Guidelines	16
2.9.6. Conditions for Termination of Registration	16
<b>2.10. Programme Structure</b>	17
2.10.1 M.Sc in Chemistry	17
2.10.2 M.Sc in Mathematics	19
2.10.3 M.Sc in Physics	21
2.10.4 M.Tech. in Biomedical Engineering	25
2.10.5 M.Tech. in Computer Science & Engineering	26
2.10.6 M.Tech. in Electrical Engineering	28
2.10.7 M.Tech. in Mechanical Engineering	29
2.10.8 MS - Research Program in Computer Science & Engineering & Electrical Engineering : Procedures and Guidelines.	31
2.10.8.1 Duration	31
<b>3 PhD Programmes</b>	35
<b>4 Ordinances</b>	35
<b>5 Regulations</b>	35
<b>5.1 Categories of Admission</b>	35
5.1.1 Regular full-time scholars.	35
5.1.1.1 Institute research scholars	35
5.1.1.2 Govt. / Semi Govt. Fellowship Awardees (CSIR, UGC, DAE, DST, DBT, NBHM, etc.)	36
5.1.1.3 Research Fellows under Projects/Schemes	36
5.1.1.4 Direct PhD programme	36
5.1.2 External Registration Programme (ERP)	36
5.1.3 Part time PhD programme	36
5.1.4 PhD programme for staff of IIT Ropar	36
<b>5.2 Reservation for admission</b>	36
5.2.1 Reservation for SC/ST	36
5.2.2 Reservation for the physically handicapped (PH)	36
<b>5.3 Eligibility criterion</b>	36
5.3.1 Eligibility for Regular Full Time PhD programme	37
5.3.2 Eligibility for External Registration Programme (ERP)	37
5.3.2.1 Minimum Eligibility Requirements	37
5.3.3 Eligibility for Direct PhD programme	37
5.3.3.1 Minimum Eligibility Requirements:	37
5.3.3.2 Programme Details	38
5.3.4 Eligibility for Part time PhD programme	38
5.3.4.1 Minimum eligibility requirements	38
5.3.5 Eligibility of PhD programme for staff	38
5.3.5.1 Minimum eligibility requirements	39
<b>5.4 Selection Procedure</b>	39
<b>5.5 Admission to the programme</b>	39
5.5.1 Admission to ERP	40

<b>5.6 Registration</b>	40
5.6.1 Registering for the programme	40
5.6.2 Minimum period of registration	40
5.6.2.1 For non-teaching staff of IIT Ropar	40
5.6.3 Maximum period of registration	40
5.6.3.1 For ERP candidates	40
5.6.3.2 For Direct PhD candidates	40
5.6.3.3 For non-teaching staff of IIT Ropar	40
<b>5.7 Fellowship and advance</b>	40
5.7.1 Transfer of project fellowship to Institute fellowship	41
5.7.2 Fellowship for Direct PhD students	41
5.7.3 Fellowship for PhD of staff of IIT Ropar	41
<b>5.8 Choice of supervisor</b>	41
5.8.1 Allotment of supervisor	41
5.8.2 Maximum number of supervisors allowed	41
5.8.3 Choice of supervisor for ERP candidates	41
5.8.3.1 Research Supervisor(s) from IIT Ropar	41
5.8.3.2 Joint Research Supervisor/Coordinator	41
<b>5.9 Choice of co-supervisor(s)</b>	41
5.9.1 Number of co-supervisors allowed per PhD student and co-supervision rules	42
<b>5.10 Doctoral Committee</b>	42
5.10.1 DC member goes on long leave or retires	42
<b>5.11 Change/Addition of Supervisor</b>	42
5.11.1 A supervisor proceeding on long leave of more than 12 months	42
5.11.1.1 Joint supervisor exists	42
5.11.1.2 Joint supervisor does not exist	42
5.11.1.3 Stages of thesis	43
5.11.1.4 Supervisor wants to extend his leave	43
5.11.2 A supervisor retires	43
5.11.3 A supervisor resigns	43
5.11.4 A supervisor expires	43
<b>5.12 Course Work</b>	43
<b>5.13 Minimum Residential Requirement</b>	44
5.13.1 For ERP candidates	44
5.13.2 For Part Time candidates	44
5.13.3 Temporary withdrawal from the programme	44
<b>5.14 Attendance</b>	44
<b>5.15 Progress Report</b>	44
<b>5.16 Comprehensive Examination</b>	45
<b>5.17 Candidacy confirmation</b>	45
<b>5.18 Enhancement seminar</b>	46
<b>5.19 Enrolment</b>	46

<b>5.20 Conversion from full time to part time PhD programme to take up job</b>	46
<b>5.21 Leave rules</b>	46
5.21.1 Personal leave	47
5.21.2 Withdrawal for a long period (beyond 30 days)	47
5.21.3 Duty leave	47
5.21.4 Medical leave	47
5.21.5 Maternity leave	47
5.21.6 Paternity leave	48
5.21.7 Vacation leave	48
5.21.8 Absence without sanctioned leave	48
5.21.9 Leave for students from external funding agencies	48
5.21.10 Registration and fees during leave	48
<b>5.22 Cancellation of Registration</b>	48
<b>5.23 Synopsis</b>	48
5.23.1 Synopsis criterion	48
5.23.2 External experts for synopsis presentation	49
5.23.3 Synopsis presentation	49
<b>5.24 Submission of Thesis</b>	49
5.24.1 Thesis guidelines	49
<b>5.25 Thesis Report</b>	50
5.25.1 Outcome of thesis reports	50
5.25.2 Acceptance of satisfactory reports	50
<b>5.26 Viva Voce Examination</b>	51
5.26.1 Evaluation during Viva Voce	51
5.26.2 Reappearing for Viva Voce	51
5.26.3 Final form of thesis	51
<b>5.27 Award of PhD Degree</b>	51
<b>5.28 Publication of the thesis by the institute</b>	51
<b>6. Fees</b>	52
<b>6.1. Mode of Payment</b>	52
<b>6.2. Deadlines for Payment</b>	52
<b>6.3. Refund of Fees</b>	52
<b>6.4. Withdrawal from the Institute</b>	52
<b>6.5. Transcripts, Degree and other Certificates</b>	53
<b>6.6. Details of the Semester Fees for the Academic Year 2017-18</b>	54
<b>7. Discipline</b>	55
<b>8. Academic Integrity</b>	56
<b>9. Scholarship and Fellowship</b>	58
<b>9.1. Scholarship for the PhD Scholars</b>	58
<b>9.2 Scholarship for M.Tech/MS-Research Students</b>	58
<b>9.3 Merit-cum-Means Scholarship to M.Sc. students</b>	58
<b>9.4 Director's Fellowship</b>	59



9.4.1 Eligibility	59
9.4.2 Application Processing	59
9.4.3 Selection	59
9.4.4 Duration and Joining	59
9.4.5 Benefits	59
9.4.6 Termination	59
<b>9.5 Post Doctoral Fellowship</b>	60
9.5.1 Eligibility	60
9.5.2 Application Processing & Interview	60
9.5.3 Selection & Offer	60
9.5.4 Duration and Joining	60
9.5.5 Progress Report	60
9.5.6 Assignment	60
9.5.7 Benefits	60
9.5.8 Termination	61
<b>10. Library Facilities</b>	61
<b>11. Medical Facilities</b>	61
<b>12. Hostels and Dining Facilities</b>	61
<b>13. Student Activities</b>	62
<b>14. Recreational Facilities</b>	62
<b>15. General Facilities</b>	62
<b>16. Academic Calendar for the 1st Semester of the Academic Year 2017—18</b>	62
<b>Annexure</b>	63



## 1. Introduction

### 1.1. Background

The Indian Institute of Technology Ropar is one of the eight IITs set up by the Ministry of Human Resource Development (MHRD), Government of India in 2008. In keeping with the spirit of the IIT system, this institute is committed to providing state-of-the-art technical education in a variety of fields, and also to facilitating transmission of knowledge using the latest developments in pedagogy. The institute started operating from the transit campus, i.e., the premises of the Government Polytechnic College for Girls (Ropar) from 18 August 2009. The transit campus of IIT Ropar has all the required facilities such as class rooms fitted with multimedia, faculty rooms and an administrative wing. The four hostels (three for boys and one for girls) on campus have modern mess halls. Faculty recruitment, creation of laboratories and other support facilities are in full swing. In a few years, the institute will be relocated to its own campus. The new campus is spread over an area of 500 acres, and is situated on the banks of the Satluj River.

### 1.2. Departments and Centre

Each course is offered by an academic unit which could either be a department and centre. The various departments and centre and their two letter codes are given below. Some courses are offered jointly by multiple academic units and are classified as interdisciplinary courses; their codes are also given in Table.

#### Academic Departments and Centre

Name of Academic Unit (alphabetical order)	Code
Bio-Medical Engineering	BM
Materials & Energy Engineering	MS
Chemical Engineering	CH
Chemistry	CY
Civil Engineering	CE
Computer Science and Engineering	CS
Electrical Engineering	EE
Humanities and Social Sciences	HU
Mathematics	MA
Mechanical Engineering	ME
Physics	PH

### 1.3. Programmes Offered

IIT Ropar offers a variety of academic programmes for students with a wide range of backgrounds. Admission to many of these programmes are based on the students' performance in national level tests / entrance examination followed by interviews at IIT Ropar in some cases.

The programmes offered by IIT Ropar are presently classified as post graduate and PhD programmes. This classification is based primarily on entry/admission qualification of students rather than the level of degree offered. For all postgraduate programmes, students are admitted after they have obtained at least a college level Bachelor's degree. As this course of study would indicate, there is considerable overlap in courses for senior undergraduate students and junior postgraduate students. The various programmes and their specializations are listed below.

#### Postgraduate Programmes

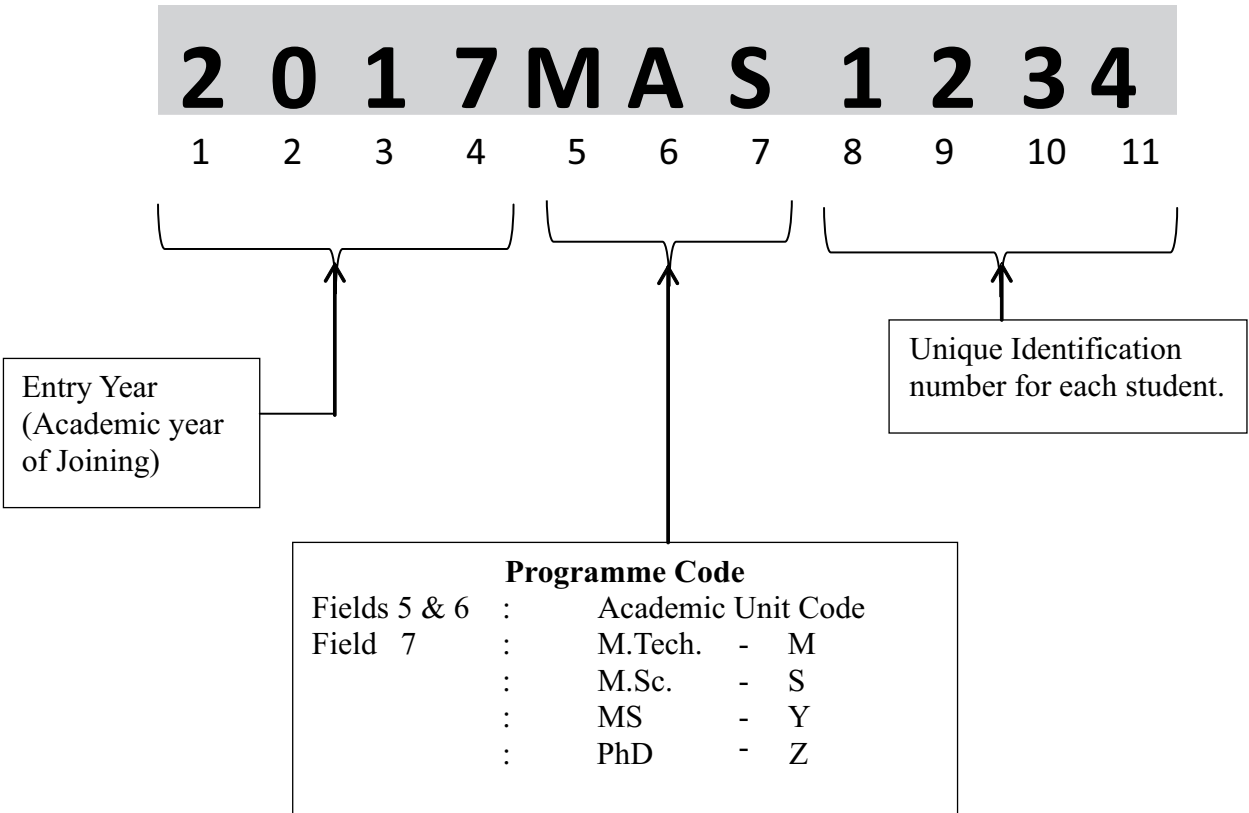
Departments	Degree	Credits
Biomedical Engineering	M.Tech.	64
Chemistry	M.Sc.	87
Computer Science & Engineering	M.Tech.	61
	MS Research	18
Electrical Engineering	M.Tech.	60
	MS Research	20
Mathematics	M.Sc.	81
Physics	M.Sc.	88
Mechanical Engineering	M.Tech.	62

PhD Programmes

Departments
Centre for Biomedical Engineering
Centre for Material & Energy Engineering
Department of Chemical Engineering
Department of Chemistry
Department of Civil Engineering
Department of Computer Science and Engineering
Department of Electrical Engineering
Department of Humanities and Social Sciences
Department of Mathematics
Department of Mechanical Engineering
Department of Physics

1.4. Student’s Entry Number

The entry number of a student consists of eleven alpha-numerals.



In case of a programme change, the three alphabets (fields 5, 6 and 7) will be changed. However, his / her unique numeric code will remain unchanged. Such students will have two entry numbers, one prior to programme change and one after the change. At any time, though, only one entry number that corresponds to the student’s present status will be in use.

# Postgraduate Programmes

## Abbreviations

• BME	Biomedical Engineering
• CE	Civil Engineering
• CFTI	Centrally funded technical institute
• CHE	Chemical Engineering
• CSE	Computer Science and Engineering
• CSIR-NET	CSIR National Eligibility Test
• DC	Doctoral Committee
• EE	Electrical Engineering
• ERP	External Registration Programme
• GFTI	Government funded technical institute
• GOI	Government of India
• HoD	Head of the Department
• HTRA	Half Time Teaching/Research Assistantship
• JRF	Junior research fellow
• ME	Mechanical Engineering
• MEE	Materials and Energy Engineering
• MHRD	Ministry of Human Resource and Development
• RPEC	Research Progress Evaluation Committee
• SRF	Senior research fellow
• UGC-NET	UGC National Eligibility Test

## 2. Postgraduate Programmes

### 2.1. Academic System

The overall academic system for IIT Ropar has been designed to provide a science-based engineering education with a view to producing quality engineer-scientists. The curriculum provides broad-based knowledge and simultaneously builds a temper for life-long learning and exploring. The Postgraduate programme begins with a set of science and general engineering courses which are reflected in the course plan for the first year. These courses provide a foundation for further discipline-specific courses. The medium of instruction at IIT Ropar is English.

The main goals of the postgraduate programmes are to develop scientific and engineering manpower of the highest quality, to cater to the needs of industry, R&D organizations and educational institutions, and to enable students to have awareness and sensitivity to the needs and aspirations of society. The programmes have been structured in such a way that interested students can upgrade to the MS or PhD programme.

The current Academic year begins in July and ends in May of the following year. For the academic year 2017-2018, the 1st semester starts on August 8, 2017. The detailed schedule of the activities and academic deadlines shall be given in the semester schedule that will be available before the start of the semester.

### 2.2. Academic Programmes

Currently, the following PG programmes are being offered:

- |                                                |                                                    |
|------------------------------------------------|----------------------------------------------------|
| 1. M. Sc. Chemistry                            | 8. M.Tech. Electrical Engineering                  |
| 2. M. Sc. Physics                              | • Specialization in Power Engineering              |
| 3. M.Sc. Mathematics                           | 9. M. Tech. Mechanical Engineering                 |
| 4. MS (Research) Computer Science Engineering. | • Specialization in Thermal Engineering (TE)       |
| 5. MS (Research) Electrical Engineering        | • Specialization in Mechanics and Design (MD)      |
| 6. M.Tech. Biomedical Engineering.             | • Specialization in Manufacturing Engineering (ME) |
| 7. M.Tech. Computer Science & Engineering      |                                                    |

### 2.3. General Eligibility Criteria for PG Programmes

a) **M. Sc. Chemistry:** Bachelor degree with Chemistry as one of the subject and should have passed Mathematics at the Higher Secondary (10+2) level. Candidate meeting with this requirement must also have valid JAM score.

b) **M. Sc. Mathematics:** Bachelor degree with Mathematics as a subject for at least two years/four semesters

c) **M. Sc. Physics:** Bachelor degree with Physics for three years/Six Semesters and Mathematics Statistics for at least two years/four semesters. Candidate meeting with this requirement must also have valid JAM score.

**Note:-** For programmes of Physics, Chemistry and Mathematics candidate must have at least 55% aggregate marks without rounding off (taking into account all subjects, including Languages and Subsidiaries, all years combined) for Un-Reserved/OBC Category Candidates and at least 50% aggregate marks, without rounding off (taking into account all subjects, including Languages and Subsidiaries, all years combined) for SC/ST and PwD Category Candidates in the qualifying degree.

d) **MS (Research) Computer Science and Engineering:** Candidates with B.Tech/ B.E/ M.Sc. / MCA in Computer Science and Engineering related area with an excellent academic record a valid GATE score in CS/IT.

e) **MS (Research) Electrical Engineering:** A Candidates with a Bachelor's degree in Electrical Engineering (Electrical and Electronics Engineering)/ Electronics Engineering (Electronics and Communication Engineering)/ Computer Science & Engineering or equivalent with a valid GATE score.

f) **M. Tech. Biomedical Engineering :** A bachelor's degree in engineering (BE/B.Tech.), with a minimum of 60% marks (6.5 grade points on scale of 10) and a valid GATE score. A minimum of 55% marks (6.0 grade points on a scale of 10) for SC/ST.

OR

A master's degree in Science (M.Sc/MS), Computer application (MCA), or equivalent, with a minimum of 60% marks (6.5 grade points on scale of 10) and a valid GATE score. A minimum of 55% marks (6.0 grade points on a scale of 10) for SC/ST.

OR

A bachelor's degree in Medicine/surgery (MBBS), Pharmaceutical Sciences (B.Pharm), Veterinary Science (BVSc), or Dental Surgery (BDS), with a minimum of 60% marks (6.5 grade points on scale of 10) and a valid GATE score. A minimum of 55% marks (6.0 grade points on a scale of 10) for SC/ST.

g) **M. Tech. Computer Science & Engineering** : Candidates with B.Tech./B.E/MCA or M.Sc. in the appropriate area with valid GATE score in Computer Science & Engineering.

h) **M. Tech. Electrical Engineering** : Candidates with B. Tech/B.E or M. Sc. in the appropriate area with valid GATE score in Electrical Engineering.

I) **M. Tech. Mechanical Engineering** : Candidates with B. Tech/B.E or M. Sc. in the appropriate area with valid GATE score in Mechanical Engineering.

**Note:-** For MS (Research)/ M.Tech. programme, IIT B.Tech. Graduates with a CGPA score of 8.0 or above on a scale of 10 [SC/ST: 7.5 CGPA] are eligible to apply without GATE score.

## 2.4. Admission Procedure

The candidates can apply for admission to various PG programmes as given :-

Sr. No.	Programme	Selection Procedure
1.	M.Sc. in Mathematics M.Sc. in Physics M.Sc. in Chemistry	To apply for admission to a desired programme, a candidate is required to qualify JAM (Joint Admission Test for M.Sc.) and also satisfy the Minimum Educational Qualifications (MEQs) and Eligibility Requirements (ERs) of the respective academic programme. For further information, candidates can visit the JAM website.
2.	M.Tech. in Biomedical Engineering M.Tech. in Computer Science & Engineering M.Tech. in Electrical Engineering M.Tech. in Mechanical Engineering	To apply for admission in this programme the candidates are required to apply online to IIT Ropar. Eligible candidates will be called for counselling. For further information, please visit : <a href="http://www.iitrpr.ac.in/admissions">www.iitrpr.ac.in/admissions</a>
3.	MS (Research) in Computer Science & Engineering / Electrical Engineering	To apply for admission in this programme the candidates are required to apply online to IIT Ropar. Eligible candidates will be called for counselling. For further information, please visit : <a href="http://www.iitrpr.ac.in/admissions">www.iitrpr.ac.in/admissions</a>



## 2.5. Credit System

### 2.5.1. Credit System

Education at the Institute is organized around the semester-based credit system. The prominent features of credit system are a process of continuous evaluation of a student's performance/progress and the flexibility to allow a student to progress at an optimum pace suited to his/her ability or convenience. This feature is subject to the fulfillment of the minimum requirements for continuation.

A student's performance/progress is measured by the number of credits that he/she has earned, i.e., completed with a pass grade. Based on the course credits and grade obtained by the student, the grade point average is calculated. A minimum grade point average is required to be maintained for satisfactory progress and continuation in the programme.

All programmes are defined by the total credit requirement and a pattern of credit distribution over courses of different categories. Details are given below.

#### a) Course credits assignment

Each course, except a few special courses, has a certain number of credits assigned to it depending upon its lecture, tutorial and practical contact hours in a week. This weighting also indicates the academic expectation that includes in-class contact and self-study beyond class hours. A few courses are without credit and are referred to as non-credit (NC) courses.

**Lectures and Tutorials:** One lecture or tutorial hour per week per semester is assigned one credit.

**Practical/Laboratory:** One laboratory hour per week per semester is assigned half credit.

For each lecture or tutorial credit, the self study component is 1 hour/week.

#### b) Earning credits

At the end of every course, a letter grade is awarded in each course for which a student had registered. On obtaining a pass grade, the student accumulates the course credits as earned credits. A student's performance is measured by the number of credits that he/she has earned and by the weighted grade point average.

#### c) Course coordinator

Every course is usually coordinated by a member of the teaching staff of the Department which is offering the course in a given semester. This faculty member is designated as the Course Coordinator. He/she has the full responsibility for conducting the course, coordinating the work of the other members of the faculty as well as teaching assistants involved in that course, holding the tests and assignments, and awarding the grades. For any difficulty related to a course, the student is expected to approach the respective course coordinator for advice and clarification. The distribution of the weight for tests, quizzes, assignments, laboratory work, workshop and drawing assignment, term paper, etc. that will be the basis for award of the grade in a course will be decided by the course coordinator of that course and generally announced at the start of the semester.

### 2.5.2. Grading System

The grading reflects a student's own proficiency in the course. While the relative standing of the student is clearly indicated by his/her grades, the process of awarding grades is not necessarily based upon evaluating the performance of the class based on some statistical distribution. The course coordinator and the associated faculty for a course formulate appropriate procedures to award grades that are reflective of the student's performance vis-a-vis the instructor's expectation.

The credit system enables continuous evaluation of a student's performance, and allows the students to progress at an optimum pace suited to individual ability and convenience. This is subject to the fulfilling of the minimum requirements for continuation.

The grades and their description, along with equivalent numerical points wherever applicable are listed below:

**Table 1: Grades with their description**

<b>Grade</b>	<b>Grade Points</b>	<b>Description</b>
A	10	Outstanding
A (-)	9	Excellent
B	8	Very good
B (-)	7	Good
C	6	Average
C (-)	5	Below average
D	4	Marginal
E	2	Poor
F	0	Very poor
NP	-	Audit Pass
NF	-	Audit Fail
U	-	Unsatisfactory
X	-	Continued
I	-	Incomplete
W	-	Withdrawal
S	-	Satisfactory completion
Z	-	Course continuation

### 2.5.3. Description of Grades

#### A grade

The ‘A’ grade stands for outstanding achievement. The minimum percentage for the award of an ‘A’ grade is 80%. However, individual course coordinators may set a higher performance requirement.

#### B grade

The ‘B’ grade refers to very good/good performance.

#### C grade

The ‘C’ grade stands for average performance. This average performance refers to “average” as per instructor’s expectations in a holistic sense and not on the average marks.

#### D grade

The ‘D’ grade stands for marginal performance, i.e., it is the minimum pass grade in any course. The minimum percentage for the award of ‘D’ grade is 30%, however, individual course coordinators may set a higher marks requirement.

#### E and F grades

The ‘E’ and ‘F’ grades denote poor and very poor performance, and indicate failing a course. An ‘F’ grade is also awarded in case of poor attendance (see Attendance Rules). A student has to repeat all the core courses in which he/she obtains either an ‘E’ or an ‘F’ grade, until a pass grade is obtained. In case of the elective courses in which either an ‘E’ or an ‘F’ grade has been obtained the student may take the same course or any other course from the same category. An ‘E’ grade in a course makes a student eligible to repeat the course in the summer semester, if the course is offered. Further, ‘E’ and ‘F’ grades secured in any course stay permanently on the grade card. These grades are not counted in the calculation of the CGPA; however, these are counted in the calculation of the SGPA.

#### NP and NF grades

The ‘NP’ Grade denotes completion of the Audit course. The NF grade denotes Audit fail. These grades are

awarded in a course that the student opts to audit. Only an elective course can be audited until one week after the mid semester examination. The Audit Pass (NP) is awarded if the student's attendance is above 75% in the class and he/she has obtained at least a 'D' grade. The Course Coordinator can specify a higher criterion for audit pass at the beginning of the semester. If either of these requirements is not fulfilled, an audit fail (NF) is awarded. The grades obtained in an audit course are not considered for the calculation of SGPA or CGPA.

### I grade

The 'I' grade denotes incomplete performance in any L (lecture), P (practical), V (special module) category courses. It may be awarded in case of absence on medical grounds or other special circumstances, before or during the major examination period. The student should complete all requirements within:

- (i) 10 days of the last date of the Major Tests; the request is to be made to the Head of the Department of the student's programme who will notify the same to the concerned course coordinators, OR
- (ii) With the permission of the Dean (Academics) the period can be extended to the first week of the next semester. Upon completion of all course requirements, the 'I' grade is converted to a regular grade (A to F, NP or NF). The 'I' grade does not appear permanently in the grade card. Requests for an I-grade should be made at the earliest but not later than the last day of the major tests.

For (ii), the request is to be made to the Dean (Academics). A student may be considered for the award of an 'I' grade in a course only if the attendance in the course is 75%.

Attendance in the course for which an I-grade is being sought will be certified by the course coordinator of the course.

### W grade

The 'W' grade is awarded in a course where the student has opted to withdraw from the course. Withdrawal from a course is permitted until one week after the Mid Semester Examination. The W grade stays on the grade card.

### X grade

The 'X' grade is awarded for incomplete work typically in projects-type course based on request by the student.

### S and Z grades

The 'S' grade denotes satisfactory performance and completion of a course. The 'Z' grade is awarded for non-completion of the course requirements, and if it is a core course, the student will have to register for the course until he/she obtains the 'S' grade. The specific courses in which S/Z grades are awarded are introduction to the Programme, NCC/NSO/NSS, and Introduction to Humanities and Social Sciences, Practical Training, Professional Practices.

## 2.5.4. Evaluation of Performance

The performance of a student will be evaluated in terms of two indices, viz. the Semester Grade Point Average (SGPA) which is the Grade Point Average for a semester, and Cumulative Grade Point Average (CGPA) which is the Grade Point Average for all the completed semesters at any point in time.

The Earned Credits (E.C.) are defined as the sum of course credits of courses in which students have been awarded grades between A to D; for PG students, credits from courses in which an NP or an S grade has been obtained are also added.

Points earned in a course = (Course credits × Grade Point) for courses in which A-F grade has been obtained.

The SGPA is calculated on the basis of grades obtained in all courses registered for in the particular semester, except the audit courses and the courses in which an S/Z grade has been awarded.

$$\text{SGPA} = \frac{\text{Points secured in the semester}}{\text{Credits registered in the semester, excluding S/Z and audit grade courses}}$$

The CGPA is calculated on the basis of all pass grades, except the courses in which S/Z grade has been awarded, obtained in all completed semesters.

$$\text{CGPA} = \frac{\text{Cumulative points secured in all passed courses (A-D)}}{\text{Cumulative earned credits, excluding S / Z and audit grade courses}}$$

An example of these calculations is given below:

**Table 2(a). Typical academic performance calculations-I semester**

Course no.	Course credits	Grade awarded	Earned credits	Grade Points	Points secured
(column 1)	(column 2)	(column 3)	(column 4)	(column 5)	(column 6)
MALXXX	5	C	5	6	30
CYLXXX	4	C(-)	4	5	20
PHLXXX	4	A	4	10	40
PHLXXX	2	B	2	8	16
MELXXX	4	E	0	2	08
TTNXXX	2	S	2	—	—

Credits registered in the semester (total of column 2)	= 21
Credits registered in the semester excluding S/Z and audit grade course	= 19
Earned credits in the semester (total of column 4)	= 17
Earned credits in the semester excluding S/Z grade courses	= 15
Points secured in this semester (total of column 6)	= 114
Points secured in this semester in all passed courses (Total of column 6 & A–D grade)	= 106

$$\text{SGPA} = \frac{\text{Points secured in the semester}}{\text{Credits registered in the semester, excluding S / Z and audit grade course}} = \frac{114}{19} = 6.000$$

$$\text{CGPA} = \frac{\text{Cumulative points secured in all passed courses (A-D)}}{\text{Cumulative earned credits, excluding S / Z and audit grade courses}} = \frac{106}{15} = 7.067$$

Semester performance:	Earned credits (E.C.) = 17	SGPA = 6.000
Cumulative Performance:	Earned credits (E.C.) = 17	CGPA = 7.067

**Table 2(b). Typical academic performance calculations-II semester**

Course no.	Course credits	Grade awarded	Earned credits	Grade Points	Points secured
(column 1)	(column 2)	(column 3)	(column 4)	(column 5)	(column 6)
MALXXX	5	B	5	8	40
EELXXX	4	A(-)	4	9	36
CYLXXX	4	W	—	—	—
CYPXXX	2	B(-)	2	7	14
MELXXX	4	C	4	6	24
AMKXXX	4	A	4	10	40
HUNXXX	1	S	1	—	—

Credits registered in the semester (total of column 2)	= 24
Credits registered in the semester excluding S/Z & audit grade courses	= 23
Earned credits in the semester (total of column 4)	= 20
Earned credits in the semester excluding S/Z & audit grade courses	= 19
Points secured in this semester (total of column 6)	= 154
Points secured in this semester in all passed courses (Total of column 6 & A-D grade)	= 154
Cumulative points earned in all passed courses = 106 (past semesters) + 154 (this sem.)	= 260

$$\text{SGPA} = \frac{\text{Points secured in the semester}}{\text{Credits registered in the semester, excluding S / Z and audit grade courses}} = \frac{154}{19} = 8.105$$

$$\text{CGPA} = \frac{\text{Cummulative points secured in all passed courses (A-D)}}{\text{Cummulative earned credits, excluding S / Z and audit grade courses}} = \frac{106+154}{15+19} = 7.647$$

$$\text{Cumulative earned credits} = 17 \text{ (past semesters)} + 20 \text{ (this semester)} = 37$$

Semester Performance: Earned credits (E.C.) = 20 SGPA = 8.105

Cumulative Performance: Earned credits (E.C) = 37 CGPA = 7.647

### 2.5.5. Course Numbering Scheme

Every course runs for the full length of the semester. At the beginning of the semester, a student registers for the courses that he/she wants to study and at the end of the semester a grade is awarded. On obtaining a pass grade, the student earns all the credits associated with the course while a fail grade does not get any credit; partial credits are not awarded. Each course is associated with a certain number of credits.

#### (a) Codes for the nature of the course

The nature of the course corresponding to the third alphabet in the course code is as follows:

Code	Description
<b>L</b>	Lecture Courses (Other than lecture hours, these courses can have Tutorial and Practical Hours, e.g. L-T-P structures 3-0-0, 3-1-2, 3-0-2, 2-0-0 etc.)
<b>P</b>	Laboratory based courses (where performance is evaluated primarily on the basis of practical or Laboratory work with LTP structures like 0-0-3, 0-0-4, 1-0-3, 0-1-3, etc.)
<b>N</b>	Introduction to the Programme or to Humanities and Social Sciences, etc.
<b>T</b>	Thesis
<b>S</b>	Seminars

#### (b) Level of the course

The first digit of the numeric part of the course code indicates the level of the course as determined by the prerequisite course and/or by the maturity required for registering for the course.

## 2.6. Registration and Attendance

### 2.6.1. Registration

Registration is a very important procedural part of the academic system. The registration procedure ensures that the student's name is on the roll list of each course that he/she wants to study. No credit is given if the student attends a course for which he/she has not registered. Registration for courses to be taken in a particular semester will be done according to a specified schedule before the end of the previous semester. The student must also take steps to pay his/her dues before the beginning of the semester by a demand draft or by making use of internet banking facility of SBI. Students who do not make payments by a stipulated date will be de-registered

for the particular semester. In absentia registration or registration after the specified date will be allowed only in rare cases at the discretion of the Dean (Academics). In case of illness or absence during registration, the student should intimate the same to his/her course adviser and Dean (Academics). A student must meet his/her adviser within the first week of the new semester for the confirmation of his/her registration. The registration record should be preserved until the semester grade card is received.

Various activities related to registration are listed below. The relevant dates are included in the Semester Schedule that is available before the start of the semester.

### 2.6.2. Registration and Student Status

Registration by a student confirms his/her status as a student at the Institute. Failure to register before the last date for late registration will imply that the student has discontinued studies and his/her name will be struck-off the rolls.

Every registered student is considered as a full-time student at the institute. They are expected to be present at the Institute and devote full time to academics.

### 2.6.3. Advice on Courses

At the time of registration, each student must consult his/her faculty adviser/programme coordinator to finalize the academic programme, keeping in view factors, such as, minimum/maximum numbers of total and lecture credits, past performance, backlog of courses, SGPA/CGPA, pre-requisite, work load and student's interests, amongst others. Special Provisions exist for academically weak students.

### 2.6.4. Registration Validation

Before the first day of classes, every student is required to be present on campus and validate his/her registration. The updated registration record will be available on the website and the hard copy will be available with the student's adviser. Students who do not do registration validation will not be permitted to add/drop courses.

### 2.6.5. Late Registration

Late registration is permitted under the following conditions:

- A student, who was not on campus during the period of registration in the previous semester, needs to complete the registration process on or before the first day of the semester before the commencement of classes;
- OR
- For reasons beyond his/her control, if a student is not able to register or send an authorized representative with a medical certificate, he/she may apply to the Dean (Academics) for late registration. Dean (Academics) may consider and approve late registration in genuine cases on payment of an extra fee called late registration fee. Late registration is permitted until one week after the start of the semester.

### 2.6.6. Add, Drop, Audit and Withdrawal from Courses

- a. **Add/Drop:** A student has the option to add a course (s) that he/she has not registered for, or drop a course (s) for which he/she has already registered for. This facility is restricted to the first week of the semester.
- b. **Audit:** A student may apply for changing a credit course to an audit one within one week of the end of the mid semester examination. Audit is not allowed in any 1st year course and also for any core course. The credit of the courses which are audited will not be counted in the final degree requirements.
- c. **Withdrawal:** A student who wants to withdraw from a course should apply within one week of the end of the mid semester examination. A withdrawal grade (W) will be awarded in such cases.

### 2.6.7. Semester Withdrawal

If a student is absent for more than 20 teaching days in a semester on medical grounds, he/she may apply for withdrawal for that semester, i.e., withdrawal from all courses registered in that semester. Application for semester withdrawal must be made as early as possible at least before the start of the major tests. Partial withdrawal from the courses registered in a semester is not allowed.



### **2.6.8. Registration and Fees Payment**

Every registered student must pay the stipulated fees in full before the specified deadlines. In the event that a student does not make these payments, he/she will be de-registered from all courses and his/her name will be struck-off from the roll list.

### **2.6.9. Registration Record**

In addition to web-based entries related to registration, the student should ensure that the same are entered on the Registration Record. Queries related to registration will be considered only when accompanied by the original Registration Record. This record must be preserved until the semester grade card is received by the student.

### **2.6.10. Continuous Absence and Registration Status**

If a student is absent from the Institute for more than four weeks without notifying the Head of the Department or the Dean (Academics) his/her registration will be terminated and the name will be removed from the Institute rolls.

### **2.6.11. Attendance Rules**

All students must attend every lecture, tutorial and practical class.

However, to account for late registration, sickness or other such contingencies, the attendance requirement will be a minimum of 75% of the classes actually held.

If a student has less than 75% attendance in a course during the semester, in lectures, tutorials and practical's taken together (as applicable), the course coordinator may award an 'F' grade in that course irrespective of his/her performance in the tests.

For the purpose of attendance calculation, every scheduled lecture, tutorial or practical class will count as one unit irrespective of the number of contact hours.

An M.Tech. or MS (Research) student irrespective of the source of assistantship, must attend at least 75% of classes in each course in which he / she is registered. In case his/her attendance falls below 75% in any course during a month, he/ she will not be paid assistantship for that month. Further, if his/ her attendance again falls short of 75% in any course in any subsequent month in that semester, his/her studentship and assistantship will be terminated. For the above purpose, if 75% works out to be a number is not a whole number; the immediate lower whole number will be treated as the required 75% attendance.

Attendance record will be maintained based upon roll calls (or any equivalent operation) in every scheduled lecture, tutorial and practical class. The course coordinator will maintain and consolidate attendance record for the course (lectures, tutorials and practical's together, as applicable)

### **2.6.12. Leave Rules**

A full time M.Tech. or MS (Research) student during his/her stay at the Institute will be entitled to leave for 30 days (including leave on medical ground), per academic year. Even during mid-semester breaks, and summer and winter vacations, he/she will have to explicitly apply for leave. The leave will be subject to approval of the Head of Department and a proper leave account of each student shall be maintained by the Department /Centre concerned.

The M.Sc. student during his/her stay at the Institute will be entitled to avail summer/winter vacation.

## **2.7. Rules and Regulations**

### **2.7.1. Absence during the Semester**

- (a) A student must inform the course Instructor / HOD / Supervisor immediately of any instance of continuous absence from classes.
- (b) A student who is absent due to illness or any other emergency, up to a maximum of two weeks, should approach the course coordinator for make-up quizzes, assignments and laboratory work.
- (c) A student who has been absent from mid semester examination due to illness should approach the course coordinator for a make-up test immediately on return to class. The request should be supported with a medical certificate from institute's medical officer. A certificate from a registered medical practitioner will also be acceptable for a student normally residing off-campus provided registration number of the medical

practitioner appears explicitly on the certificate.

- (d) In case of absence on medical grounds or other special circumstances, before or during the major examination period, the student can apply for I-grade. 75% attendance in a course is necessary for being eligible for an I-grade in that course. An application requesting I-grade should be made at the earliest but not later than the last day of major tests. The application should be made to the Head of the Department of the student's programme who will grant approval depending on the merit of the case and inform the course coordinators and PG section. The student should complete all the course requirements within ten days from the last day of the Major Tests. The I-grade will then be converted to a proper grade (A to F, NP or NF).
- (e) In special situations arising due to the inability to be present at the institute during the stipulated period, in (d) above, the period for conversion of I grade can be extended to the first week of the next semester. Approval for this extension can be granted by the Dean (Academics) on recommendations of the concerned Head of the Department and the course coordinators. A request to this effect must be included in the application for I-grade.
- f) In case of the period of absence on medical grounds is more than 20 working days during the semester, a student may apply for withdrawal from the semester, i.e., withdrawal from all courses registered that semester. Such application must be made as early as possible and latest before the start of the major tests. No applications for semester withdrawal will be considered after the major tests have commenced. The Dean (Academics) depending on the merit of the case, will approve such applications. Partial withdrawal from courses registered in a semester is not allowed.
- (g) If a student is continuously absent from the institute for more than four weeks without notifying the Dean (Academics)/HOD, his/her name will be removed from institute rolls.

### 2.7.2. Measures for Helping SC/ST Students

A number of measures exist for helping students belonging to SC and ST categories. A senior faculty member is appointed as adviser to SC/ST students for advising them on academic and non-academic matters. Financial measures for helping SC and ST student are also available.

## 2.8. Curriculum and Structure of the PG Programmes

### 2.8.1. Credit Structure

The total earned credit requirements for PG programme among the various categories is given below in Table 1.

Category	Structure	Credit Requirement
<b>Electrical Engineering (MS- R)</b>	Course Work	20
	Research Work	40
	<b>Total</b>	<b>60</b>
<b>Computer Science and Engineering (MS-R)</b>	Course work	18
	Research Work	40
	<b>Total</b>	<b>58</b>
<b>Biomedical Engineering (M.Tech)</b>	Project Work	32
	Elective	06
	Core Course	26
	<b>Total</b>	<b>64</b>
<b>Computer Science &amp; Engineering (M.Tech)</b>	Project Work	28
	Elective	18
	Core Course	15
	<b>Total</b>	<b>61</b>
<b>Electrical Engineering (M.Tech)</b>	Project Work	30
	Elective	06
	Core Course	24
	<b>Total</b>	<b>60</b>



Category	Structure	Credit Requirement
<b>Mechanical Engineering (M.Tech)</b>	Project Work	32
	Elective	06
	Core Course	18
	Soft core	06
	<b>Total</b>	<b>62</b>
<b>Mathematics (M.Sc.)</b>	Core	49
	Elective	15
	Project Work	15
	Seminar(compulsory)	02
	<b>Total</b>	<b>81</b>
<b>Chemistry (M.Sc.)</b>	Core	56
	Elective	06
	Project Work	25
	<b>Total</b>	<b>87</b>
<b>Physics (M.Sc.)</b>	Core	62
	Elective	09
	Project Work	17
	<b>Total</b>	<b>88</b>

### 2.8.2. Minimum CGPA Required for M.Sc., MS & M.Tech. Degree

The Minimum CGPA for the award of M.Sc., M.Tech. & MS degree is 5.0.

### 2.8.3. Special Requirements

Every student will be required to make presentations in various courses and if the Department so feels, the student can be asked to take a regular course on this aspect for credit.

## 2.9. Performance Requirements and Monitoring

### 2.9.1. Maximum Period for Completing Degree Requirements

The maximum permitted duration of each programme is determined in terms of number of registered regular semesters, herein after called registered semesters. Any semester in which a student has registered for a course will be called registered semester subject to the following:

- Only the first and second semesters of an academic year can be registered semesters. The summer semester will not be considered as a registered semester.
- A semester when a student has been granted withdrawal or granted leave will not be considered as a registered semester.
- The semester when a student is suspended from the Institute on disciplinary grounds will not be counted towards the number of registered semesters.

The summer semesters falling in between the permitted registered semesters shall be available for earning credits. After the student has registered for the maximum permissible number of registered semesters, the subsequent summer semesters will not be available for earning credits.

### 2.9.2 Guidelines for M.Tech. Project Evaluation

- The student shall submit the project report at the completion of project before end-semester exam.
- Project will be evaluated by Project Assessment Committee (PAC).  
(PAC consists of Supervisor(s), HoD/Nominee of HoD, Internal Examiner)

The evaluation will be based on

- Project report and
- Seminar+viva-voce on the project

- (iii) The student will have to appear before PAC and deliver a seminar of 20-25 minutes duration followed by viva-voce.
- (iv) The dissertation seminar and viva-voce shall be conducted as scheduled in the academic calendar
- (v) The grades shall be assigned on the basis of marks awarded in the following distribution:

Assessment of Project work by the Supervisor	50%
Assessment of (1) Report and (2) Seminar with viva-voce by PAC	50%

The department can assign separate weightage on (1) and (2)

### 2.9.3. M.Sc. Continuation and Probation Guidelines

#### Continuation

- (a) After 1st semester, if a student earns more than 75% of the required credits with SGPA  $\geq 5.0$  then he/she can continue in the 2nd semester by taking all courses.

#### Probation

- (a) After 1st semester, if the total earned credits is less than 75% of the required credits or having SGPA  $< 5.0$ , then he/she will be placed in probation.
- (b) After 1st year, if the total earned credits is less than 75% of the required credits or having CGPA  $< 5.0$ , then he/she will be placed in probation.
- (c) After 1st year, if a student complete atleast 50% of required credits with CGPA  $< 5.0$ , then he/she will be placed on probation and will be recommended for slow-paced programme. Maximum duration of the programme is 3 years.
- (d) After 1st year, if a student does not complete minimum of 50% of required credits and with CGPA  $> 5.0$ , then he/she will be placed on probation and will be recommended for slow-placed programme.
- (e) Students in probation are allowed to take a maximum of 75% of the credit of the required credits in the next semester. [Course adviser will recommend how many credits to do based on the students overall performance, SGPA/CGPA and earned credits).
- (f) The registration of any student is limited to 1.25 times the average earned credits of the previous two semesters, subject to a minimum of 9 credits and a maximum of 24 credits.

#### Termination

- (a) After 1st year, if a student does not complete minimum 50% of the required credits and with CGPA  $< 5.0$ , then he/she will be recommended for termination.

### 2.9.4. M.Tech. Continuation, Probation & Fellowship Guidelines

1. A student in this program has to earn at least 6 credits with minimum SGPA of 5.0 in any semester, failing which he/she will be issued a warning and placed on probation.
2. The names of the students who are on probation for two consecutive semesters will be recommended for termination.
3. A minimum of 5.0 CGPA is required for continuation of the stipend.
4. The students who are on probation will not be entitled to receive stipend.
5. Credits earned from successful completion of Project part-1 and Project part-2 will not be considered for calculating CGPA and 'S' grade (satisfactory performance and completion of a course) or 'Z' grade (non-completion of the course requirements) will only be awarded for the project works.

### 2.9.5. MS(Research) Continuation Guidelines

The student should maintain a CGPA of 7.00. If the CGPA of a student falls below 7.00, the student will be given a grace period of one semester to maintain the minimum requirement.

### 2.9.6. Conditions for Termination of Registration

If the performance at the end of first two registered semesters is very poor, then registration will be terminated.

## 2.10. Programme Structure

### 2.10.1. M. Sc. in Chemistry

#### Semester – I [Core]

Sr. No.	Course No.	Course Title	L-T-P	Credits
1	CYL411	Concise Inorganic Chemistry	3-0-0	3
2	CYL412	Concise Organic Chemistry	3-0-0	3
3	CYL413	Quantum Chemistry and Group Theory	3-0-0	3
4	CYL414 / CYL415	An introduction to Biochemistry / Numerical Methods for Chemists	3-0-0	3
5	CYL416	Reaction rates and Chemical Thermodynamics	3-0-0	3
6	CYP401	Practical – 1	0-0-6	3
7	CYP402	Practical – 2	0-0-6	3

Students can choose any one course of serial no. 04

**Total 21**

#### Semester – II [Core]

Sr. No.	Course No.	Course Title	L-T-P	Credits
1	CYL421	Advanced Organic Chemistry	3-0-0	3
2	CYL422	Coordination Chemistry	3-0-0	3
3	CYL423	Solid-State Chemistry	3-0-0	3
4	CYL424	Electrochemistry and Statistical Thermodynamics	3-0-0	3
5	CYL425	Interpretative Molecular Spectroscopy	3-0-0	3
6	CYP421	Practical – 3	0-0-6	3
7	CYP422	Practical – 4	0-0-6	3

**Total 21**

#### Semester – III [Core]

Sr. No.	Course No.	Course Title	L-T-P	Credits
1	CYL511	Instrumentation Analysis	3-0-0	3
2	CYL512	Bio-organic Chemistry	3-0-0	3
3	CYL513	Polymer Chemistry	3-0-0	3
4	CYL514	Environmental Chemistry	3-0-0	3
5	CYT530	Project-I	0-0-20	10

**Total 22**

Dissertation with presentation for the Project-I

## Semester – IV [Core and Electives]

Sr. No.	Course No.	Title	L-T-P	Credits
<b>Core</b>				
1	CYS500	Seminar	-	2
2	CYT540	Project-II	0-0-30	15
<b>Electives</b>				
3	CYLNNN	Elective – 1	x-y-z	3
4	CYLNNN	Elective – 2	x-y-z	3
<b>Total</b>			<b>23</b>	

- Dissertation with presentation for the Project-II (15 credits)
- Elective courses including Open (Minimum 6 credits)
- Minimum CGPA to pass M.Sc. degree: 5.0

## List of Core Courses

Sr. No.	Course No.	Course Title	L-T-P	Credits
1	CYL411	Concise Inorganic Chemistry	3-0-0	3
2	CYL412	Concise Organic Chemistry	3-0-0	3
3	CYL414/ CYL415	An introduction to Biochemistry /Numerical Methods for Chemists	3-0-0	3
4	CYL416	Reaction rates and Chemical Thermodynamics	3-0-0	3
5	CYL417	Quantum Chemistry and Group Theory	3-0-0	3
6	CYP401	Practical – 1	0-0-6	3
7	CYP402	Practical – 2	0-0-6	3
8	CYL421	Advanced Organic Chemistry	3-0-0	3
9	CYL423	Solid-State Chemistry	3-0-0	3
10	CYL424	Electrochemistry and Statistical Thermodynamics	3-0-0	3
11	CYL426	Coordination Chemistry	3-0-0	3
12	CYL427	Interpretative Molecular Spectroscopy	3-0-0	3
13	CYP403	Practical – 3	0-0-6	3
14	CYP404	Practical – 4	0-0-6	3
15	CYL511	Instrumentation Analysis	3-0-0	3
16	CYL513	Polymer Chemistry	3-0-0	3
17	CYL514	Environmental Chemistry	3-0-0	3
18	CYL515	Bio-organic Chemistry	3-0-0	3
19	CYT530	Project-I	0-0-20	10
20	CYS500	Seminar	-	2
21	CYT540	Project-II	0-0-30	15

## List of Elective Courses

Sr. No.	Course No.	Course Title	L-T-P	Credits
1	CYL604	Electronic Structure Calculations	2-0-2	3
2	CYL605	Quantum Molecular Reaction Dynamics	3-0-0	3
3	CYL611	Advances in Catalysis	3-0-0	3
4	CYL612	Molecular Recognition	3-0-0	3
5	CYL613	The Chemistry of Metal Carbon bond	3-0-0	3
6	CYL621	Advanced Quantum Chemistry	3-0-0	3
7	CYL622	Applied Electrochemistry	3-0-0	3
8	CYL623	Heterogeneous Catalysis and Interfacial Phenomena	3-0-0	3
9	CYL624	Chemistry of Natural Products	3-0-0	3
10	CYL625	Inorganic Material Chemistry	3-0-0	3
11	CYL626	Synthetic Organic Chemistry	3-0-0	3
12	CYL701	Molecular Spectroscopy	3-0-0	3
13	CYL702	Chemistry of Novel Heterogeneous Catalytic Materials	3-0-0	3
14	CYL703	Strategies in Supramolecular Chemistry	3-0-0	3
15	CYL704	Chemical Synthetic Strategy of Organic Reactions	3-0-0	3
16	CYL705	Bioconjugates: Techniques and Applications	3-0-0	3
17	CYL706	Advances in <i>Ab Initio</i> Methods	3-0-0	3
18	CYL707	Non-adiabatic Effects in Chemical Dynamics	3-0-0	3

### 2.10.2. M.Sc. in Mathematics

#### Semester- I

Sr. No.	Course Code	Course Title	L-T-P	Credits
1	MAL411	Topics in Real Analysis	3-1-0	4
2	MAL412	Basic Linear Algebra	3-1-0	4
3	MAL413	Introduction to Computing	3-0-2	4
4	MAL414	Ordinary Differential Equation	3-1-0	4
5	MAL415	Algebra	3-1-0	4

**Total 20**

#### Semester- II

Sr. No.	Course Code	Course Title	L-T-P	Credits
1	MAL421	Topics in Complex Analysis	3-0-0	3
2	MAL422	Partial Differential Equation	3-1-0	4
3	MAL423	Stochastic Processes	3-1-0	4
4	MAL424	Numerical analysis	3-0-2	4
5	MAL425	Topology	3-0-0	3
6	MAS500	Seminar	- - -	2

**Total 20**

### Semester- III

Sr. No.	Course Code	Course Title	L-T-P	Credits
1	MAL511	Functional Analysis	3-0-0	3
2	MAL512	Mathematical Methods	3-1-0	4
3	MAL513	Optimization Techniques	3-1-0	4
4	MALXXX	Elective – I	- - -	3 or 4
5	MALXXX	Elective – II	- - -	3 or 4
6	MAT530	Project-I	- - -	3

**Total Min: 20, Max: 22**

### Semester- IV

Sr. No.	Course Code	Course Title	L-T-P	Credits
1	MALXXX	Elective – III	- - -	3 or 4
2	MALXXX	Elective – IV	- - -	3 or 4
3	MALXXX	Elective-V	- - -	3 or 4
4	MAT540	Project-II	- - -	12

**Total 21/24**

### List of Core Courses

Sr. No.	Course Code	Course Title	L-T-P	Credits
1	MAL411	Topics in Real Analysis	3-1-0	4
2	MAL412	Basic Linear Algebra	3-1-0	4
3	MAL413	Introduction to Computing	3-0-2	4
4	MAL414	Ordinary Differential Equation	3-1-0	4
5	MAL415	Algebra	3-1-0	4
6	MAL421	Topics inComplex Analysis	3-0-0	3
7	MAL422	Partial Differential Equation	3-1-0	3
8	MAL423	Stochastic Processes	3-1-0	4
9	MAL424	Numerical Analysis	3-0-2	4
10	MAL425	Topology	3-0-0	3
11	MAL511	Functional Analysis	3-0-0	3
12	MAL512	Mathematical Methods	3-1-0	4
13	MAL513	Optimization Techniques	3-1-0	4

## List of Elective Courses

Sr. No.	Course Code	Course Title	L-T-P	Credits
1	MAL603	Topics in Numerical Analysis	3-0-2	4
2	MAL604	Water Wave Theory	3-0-2	4
3	MAL605	Nonlinear Dynamics	3-0-0	3
4	MAL606	Fields and Galois Theory	3-0-0	3
5	MAL607	Commutative Algebra	3-0-0	3
6	MAL608	Operator Theory	3-1-0	4
7	MAL609	Mathematics of Financial Derivatives I	4-0-0	4
8	MAL610	Measure Theory	3-1-0	4

### 2.10.3. M.Sc. in Physics

#### Semester- I

Sr. No.	Course Code	Course Title	L-T-P	Credits
1	PHL411	Classical Mechanics	3-1-0	4
2	PHL412	Mathematical Physics	3-1-0	4
3	PHL413	Quantum Mechanics-I	3-1-0	4
4	PHL414	Electromagnetic Theory	3-1-0	4
5	PHL415	Electronics & Lab	2-0-6	5

**Total 21**

#### Semester- II

Sr. No.	Course Code	Course Title	L-T-P	Credits
1	PHL421	Quantum Mechanics-II	3-1-0	4
2	PHL422	Statistical Mechanics	3-1-0	4
3	PHL423	Atomic and Molecular Physics	3-1-0	4
4	PHL424	Nuclear and Particle Physics	3-1-0	4
5	PHL425	Condensed Matter Physics	3-1-0	4
6	PHP420	Physics Lab-I	0-0-8	4

**Total 24**

**Physics Lab-I:** Experiments related to Solid State Physics, Modern Physics, and Nuclear Physics.

### Semester- III

Sr. No.	Course Code	Course Title	L-T-P	Credits
1	PHL511	Modern Optics	3-1-0	4
2	PHL512	Experimental Methods	3-0-2	4
3	PHL513	Numerical Methods and Programming	2-0-6	5
4	PHL5XX	M.Sc. Elective -I/MS Elective-I	3-0-0	3
5	PHP510	Physics Lab-II	0-0-8	4
6	PHT530	M.Sc. Project-I	- - -	3
7	PHL5XX/6XX	MS Elective-II	3-0-0	3
8		MS Open Elective-I	3-0-0	3

**Total 23**

**Physics Lab-II:** Experiments related to Optics, Electromagnetism, and Spectroscopy.

### Semester- IV

Sr. No.	Course Code	Course Title	L-T-P	Credits
1	PHL5XX/6XX	M.Sc. Elective -II/MS Elective-III	3-0-0	3
2	PHL5XX/6XX	M.Sc. Elective -III/MS Elective-IV	3-0-0	3
3	PHT540	M.Sc. Project-II	---	10
4	PHS500	M.Sc. Seminar + Viva Voce	---	4
5		MS Open Elective-2	3-0-0	3
6	PHT522	MS project	---	4
7	PHS533	MS Seminar	---	3
8	PHL523	*Advanced topics in Physics for MS students	3-0-0	3

**Total**

**M.Sc. (20)/MS (19)**

\*The course details would be provided by the instructor before the course registration.



## List of Core Courses

Sr.No.	Course code	Course name	L-T-P	Credits
1	PHL 411	Classical Mechanics	3-1-0	4
2	PHL412	Mathematical Physics	3-1-0	4
3	PHL413	Quantum Mechanics-I	3-1-0	4
4	PHL414	Electromagnetic Theory	3-1-0	4
5	PHL415	Electronics & Lab	2-0-6	5
6	PHL421	Quantum Mechanics-II	3-1-0	4
7	PHL422	Statistical Mechanics	3-1-0	4
8	PHL423	Atomic and Molecular Physics	3-1-0	4
9	PHL424	Nuclear and Particle Physics	3-1-0	4
10	PHL425	Condensed Matter Physics	3-1-0	4
11	PHP420	Physics Lab-I	0-0-8	4
12	PHL511	Modern Optics	3-1-0	4
13	PHL512	Experimental Methods	3-0-2	4
14	PHL513	Numerical Methods and Programming	2-0-6	5
15	PHP510	Physics Lab-II	0-0-8	4
16	PHT530	M.Sc. Project-I	---	3
17	PHT540	M.Sc. Project-II	---	10
18	PHS500	M.Sc. Seminar + Viva Voce	---	4
19	PHT522	MS project	---	4
20	PHS533	MS Seminar	---	3
21	PHL523	Advanced topics in Physics for MS students	3-0-0	3
22	PHT598	MS Thesis minor presentation	---	16
23	PHT599	MS Thesis defense at the end of sixth semester	---	26

## List of Elective Courses

Sr.No.	Course code	Course name	L-T-P	Credits
1	PHL 551	Nano-Optics	3-0-0	3
2	PHL552	Physics of Nanomaterials & Nanotechnology	3-0-0	3
3	PHL553	Surface & Interfacial Forces	3-0-0	3
4	PHL554	Nonlinear Optics	3-0-0	3
5	PHL555	Nuclear Reaction & Instability	3-0-0	3
6	PHL556	Particle & Radiation Detectors	3-0-0	3
7	PHL557	Data Reduction & Measurement Technique	3-0-0	3
8	PHL558	Nuclear Scattering & Heavy Ion Reactions	3-0-0	3
9	PHL559	Physics of Low Dimensional Systems	3-0-0	3
10	PHL560	Semi conductor Physics	3-0-0	3
11	PHL610	Quantum Optics I: Fundamentals	3-0-0	3
12	PHL611	Introduction to Quantum Computations & Communication	3-0-0	3
13	PHL612	Thin Film Science & Technology	3-0-0	3
14	PHL614	Laser Physics	3-0-0	3
15	PHL615	Introduction to Quantum Information	3-0-0	3
16	PHL616	Quantum Optics II: Basic Applications	- - -	3
17	PHL617	Ion Beam Fundamental & Patterning	3-0-0	3
18	PHL618	Linear & Non Linear Laser Spectroscopy	3-0-0	3
19	PHL619	Particle Physics	3-0-0	3
20	PHL620	Nuclear Models	3-0-0	3
21	PHL621	Super conductivity & Magnetism	3-0-0	3

The Physics department needs to change the structure from M.Sc-M.S./PhD to M.Sc. only.

## 2.10.4. M.Tech. in Biomedical Engineering

### Semester - I

Sr.No.	Course code	Course name	L-T-P	Credits
1	BML601	Fundamentals of Human Physiology	3-0-2	4
2	BML604	Introduction to Advanced Biology	2-0-2	3
3	BML605	Biomedical Electronics and Communication	3-0-2	4
4	BML606	Biomaterial and Tissue Interactions	2-0-2	3

**Total 14**

Weekly seminars (no credit, 1 hour/week)

### Semester - II

Sr.No.	Course code	Course name	L-T-P	Credits
1	CSL631	Physics of Medical Imaging	3-0-2	4
2	BML607	Medical Devices and Equipment	3-0-2	4
3	BML608	Biomechanics	3-0-2	4
4	Elective - I	---	---	3
5	Elective - II	---	---	3
6	BML609	Research Ethics and Communication (2 hours/ week)	---	-

**Total 18**

- **M.Tech. thesis:** Thesis adviser to be assigned before the end of II semester.
- **Summer Semester :** Project work to be initiated during the summer vacation, immediately after the II semester.

III Semester (16 credits)	IV Semester (16 credits)
Project work (part-1) Interim evaluation	Project work (part-2) Dissertation Open thesis defense

## 2.10.5. M.Tech. in Computer Science & Engineering

### Semester -I

Sr.No.	Course Code	Course Name	L-T-P	Credits
1	CSL606	Data Structures and Algorithms	3-0-0	3
2	CSP609	PG software lab	0-0-6	3
3	CSLNNN	Elective 1	---	3 or 4
4	CSLNNN	Elective 2	---	3 or 4

### Semester -II

Sr.No.	Course Code	Course Name	L-T-P	Credits
1	CSL608	Foundation of Computer Science	3-0-0	3
2	CSL610	Advanced Computer Architecture	3-0-2	4
3	CSLNNN	Elective 3	---	3 or 4
4	CSLNNN	Elective 4	---	3 or 4
5	CSS600	PG seminar in computer science	NC	---

### Semester -III

Sr.No.	Course Code	Course Name	L-T-P	Credits
1	CSLNNN	Elective 5	---	3 or 4
2	CSP797	Project Part 1	0-0-24	12

### Semester -IV

Sr.No.	Course Code	Course Name	L-T-P	Credits
1	CSP798	Project Part 2	0-0-32	16

### List of Courses for Programme

#### Program Core:

1. CSL606: Data structures and algorithms: (3-0-2) 4 Credits
2. CSL608: Foundation of computer science : (3-0-0) 3 Credits
3. CSP609: PG software lab: (0-0-6) 3 Credits
4. CSL610: Architecture of high performance computers: (3-0-2) 4 Credits
5. CSS600: PG seminar in computer science: (NC)
6. CSP797: M. Tech. Project Part-I : (0-24) 12 Credits
7. CSP798: M. Tech. Project Part II: (0-32) 16 Credits

#### Theory Courses

1. CSL601: Computational complexity: : (3-0-0) 3 Credits
2. CSL602: Computational geometry: (3-0-2) 4 Credits
3. CSL606: Data structures and algorithms: (3-0-0) 3 Credits
4. CSL608: Foundation of computer science: (3-0-0) 3 Credits

5. CSL613:Algorithms in Bioinformatics:(3-0-2) 4 Credits
6. CSL701:Approximation algorithms:(3-0-2) 4 Credits
7. CSL702:Randomized algorithms:(3-0-2) 4 Credits
8. CSL703:Combinatorial optimizations:(3-0-2) 4 Credits
9. CSL710:Algorithms exemplified:(3-0-2) 4 Credits
10. CSL719:Advanced algorithms:(3-0-0) 3 Credits

### **Systems Courses**

11. CSP609: PG software lab:(0-0-6) 3 Credits
12. CSL610: Advanced Computer Architecture:(3-0-2) 4 Credits
13. CSL611:Real time systems:(3-0-2) 4 Credits
14. CSL616:Wireless and adhoc networks:(3-0-2) 4 Credits
15. CSL619: System Level Design and Modeling:(3-0-0) 3 Credits
16. CSL704:Advanced operating systems:(3-0-2) 4 Credits
17. CSL706:Advanced software architecture:(3-0-2) 4 Credits
18. CSL707:Advanced topics in contemporary computing platforms:(3-0-2) 4 Credits
19. CSL708:Advanced topics in internet technologies:(3-0-2) 4 Credits
20. CSL713:Game theory in wireless networks:(3-0-0) 3 Credits

### **Application Courses**

21. CSL603:Machine learning:(3-0-2) 4 Credits
22. CSL605: Imaging systems and models
23. CSL607: Multimedia systems:(2-0-4) 4 Credits
24. CSL612:Artificial intelligence:(3-0-2) 4 Credits
25. CSL614:Computer System Security:(3-0-2) 4 Credits
26. CSL617:Image processing:(3-0-2) 4 Credits
27. CSL618:Computer vision:(3-0-2) 4 Credits
28. CSL631:Physics of medical imaging:(3-0-0) 3 Credits
29. CSL705: Constraint programming:(3-0-2) 4 Credits
30. CSL709: Network science:(3-0-2) 4 Credits
31. CSL712:Advanced machine learning:(3-0-0) 3 Credits
32. CSL714:Advanced image processing
33. CSL715:Biomedical image processing & Analysis:(3-0-2) 4 Credits
34. CSL716:Advanced computer vision:(3-0-2) 4 Credits
35. CSL717: Affective Computing & Interaction:(3-0-2) 4 Credits
36. CSL718:Artificial neural network:(3-0-2) 4 Credits

## 2.10.6. M.Tech. in Electrical Engineering

### Semester -I

Sr.No.	Course code	Course Name	L-T-P	Credits
1	EEL502	HV Power Equipment	3-0-0	3
2	EEL606	Simulation & Analysis of Modern Power Systems	3-0-3	3+2
3	EEL501	Power Converter Analysis & Design	3-0-0	3
4	EELXXX	Department Elective - 1	---	3

### Semester -II

Sr.No.	Course code	Course Name	L-T-P	Credits
1	EEL705	High Voltage Engineering	2-2-0	3
2	EEL711	Stability & Control of Power Systems	3-1-0	3
3	EELXXX	Design & Application of Electric Drives	---	4
4	EELXXX	Open Elective - 1	---	3
5	EEL503	High Voltage Engineering Lab	0-0-2	1
6	EELXXX	Power Converter Analysis & Design Lab	---	2

### Semester -III

Sr.No.	Course code	Course Name	L-T-P	Credits
1	EEPXXX	Project part-1	---	15

### Semester -IV

Sr.No.	Course code	Course Name	L-T-P	Credits
1	EEPXXX	Project part-2	---	15

### 2.10.7. M.Tech. in Mechanical Engineering

Semester -I (15 Credits)	Semester-II (15 Credits)
Math – 1(core 1)	Core 5
Math – 2(core 2)	Core 6
(Core-3)	(Soft Core – 2)
(Core-4)	Open Elective 1
(Soft Core – 1)	Open Elective 2
Thesis supervisor to be decided after mid sem of 1 <sup>st</sup> sem	
Semester-III (16 Credits)	Semester-IV (16 Credits)
Project part – 1	Project part -2
Weekly Seminar (NC)	Weekly Seminar (NC)

#### List of Course for M.Tech. Programme

##### MATHEMATICS

1. MEL632 (Math - 1) Mathematics for Engineers(3-0-0)/3 credits
2. MEL633 (Math - 2) Numerical Methods in Mechanical Engineering(3-0-0)/3credits

##### MANUFACTURING

1. MEL501 Advanced Composites: (3-0-0)3 Credits
2. MEL502 Advanced Welding Technology: (3-0-0)3 Credits
3. MEL503 Solidification Processing: (3-0-0)3 Credits
4. MEL 504 Advanced Metal Casting Technology: (3-0-0)3 Credits
5. MEL505 Industrial Robotics: (3-0-0) 3 Credits
6. MEL506 Surface Engineering: (3-0-0) 3 Credits
7. MEL507 Engineering Design Optimization: (3-0-0) 3 Credits
8. MEL 511 Atomistic Simulation and Modeling of Materials: (3-0-0)3 Credits
9. MEL512 Nanocomposites-Processing, characterization and Applications: (3-0-0) 3 Credits
10. MEL514 Metallic Corrosion: (3-0-0) 3 Credits
11. MEL517 Sustainable Design and Manufacturing: (2-0-4) 4 Credits
12. MEL519 Biological Materials:( 3-0-2)4 Credits
13. MEP502 Advanced Mechanical and Materials Engineering: (0-0-6) 3 Credits
14. MEL605 Friction and Wear in Machinery: (3-0-0) 3 Credits
15. MEL606 Modern Manufacturing Processes: (3-0-0) 3 Credits
16. MEL607 Rapid Prototyping: (3-0-0)3 Credits
17. MEL613 Science of Machining: (3-0-0) 3Credits
18. MEL615 Advanced Material Characterization Techniques: (2-0-4) 4 Credits
19. MEL617 Biology for Engineers: (3-0-0) 3 Credits
20. MEP 601 Advanced Mechanical and Materials Engineering Laboratory: (0-0-6) 3 Credits
21. MEP 602 Materials Engineering Laboratory: (0-0-4) 2 Credits
22. MEL 626 Theory of Elasticity: (3-0-0) 3 Credits
23. MEL603 Machine Vibration Analysis: (3-0-0) 3 Credits
24. MEL 634 Computer Integrated Design and Manufacturing Systems : (2-0-4) 3 Credits

25. MEL616 Fracture and Fatigue: (3-0-0) 3 Credits
26. MEL602 Finite Element Methods in Engineering: (3-0-0) 3 Credits
27. MEL625 Engineering Ethics: (3-1-0) 4 Credits
28. MEL 423 Micro Manufacturing (3-0-2) 4 Credits
29. MEL 471 Materials Characterization techniques: (3-0-2) 4 Credits

## DESIGN

1. MEL507 Engineering Design Optimization: (3-0-0) 3 Credits
2. MEL508 Advanced Mechanics of Solids: (3-0-0) 3 Credits
3. MEL510 Rotor Dynamics and Condition Monitoring: (3-0-2) 4 Credits
4. MEL513 Introduction to Plasticity: (3-0-0) 3 Credits
5. MEL515 Bone Biology: (3-0-0) 3 Credits
6. MEL516 Orthopedic Biomechanics: (3-0-2) 4 Credits
7. MEL518 Robot Manipulators: Kinematics, Dynamics and Control: (3-0-2) 4 Credits
8. MEP501 Control Engineering Laboratory: (0-0-4) 2 Credits
9. MEL602 Finite Element Methods in Engineering: (3-0-0) 3 Credits
10. MEL603 Machine Vibration Analysis: (3-0-0) 3 Credits
11. MEL604 Vibration and Shock Isolation: (3-0-0) 3 Credits
12. MEL608 Mechatronics: (3-0-0) 3 Credits
13. MEL614 Nonlinear oscillations : (3-0-0) 3 Credits
14. MEL616 Fracture and Fatigue: (3-0-0) 3 Credits
15. MEL618 Molecular, Cellular and Tissue Biomechanics: (3-0-2) 4 Credits
16. MEL 626 Theory of Elasticity: (3-0-0) 3 Credits
17. MEL 634 Computer Integrated Design and Manufacturing Systems : (2-0-4) 3 Credits
18. MEL517 Sustainable Design and Manufacturing: (2-0-4) 4 Credits
19. MEL625 Engineering Ethics: (3-1-0) 4 Credits
20. MEL 423 Micro Manufacturing (3-0-2) 4 Credits
21. MEL 471 Materials Characterization techniques: (3-0-2) 4 Credits

## THERMAL

1. MEL507 Engineering Design Optimization: (3-0-0) 3 Credits
2. MEL509 Convective Heat Transfer: (3-0-0) 3 Credits
3. MEL520 Energy Conservation and Waste Heat Recovery: (3-0-0) 3 credits
4. MEL 521 Computational Fluid Dynamics: (3-0-2) 4 Credits
5. MEL 522 Air Conditioning and Ventilation: (3-0-0) 3 Credits
6. MEL 523 Refrigeration Systems (3-0-0) 3 Credits
7. MEL609 Solar Thermal Engineering: (3-0-0) 3 Credits
8. MEL610 Advanced Conduction & Radiative Heat Transfer: (3-0-0) 3 Credits
9. MEL611 Combustion Engineering: (3-0-0) 3 Credits
10. MEL612 Turbulent Flow: (3-0-0) 3 Credits
11. MEL 603 Engine Management : (3-1-0) 4 Credits
12. MEL 620 Fluid Flow and Heat Transfer in Biological Systems (3-0-0) 3 Credits
13. MEL 621 Micro and Nanoscale Heat Transfer
14. MEL 622 Engine Instrumentation and Combustion Diagnostics: (3-0-0) 3 Credits
15. MEL 623 Alternative Fuels and Advances in Engines: (3-0-0) 3 Credits
16. MEL629 Advanced Fluid Mechanics: (3-0-0) 3 Credits



### Table 2.10.8. MS-Research Program in Computer Science & Engineering and Electrical Engineering : Procedures and Guidelines

Following are the details of the M.S. (R) programme offered by Department of Computer Science & Engineering and Department of Electrical Engineering, IIT Ropar:

#### 2.10.8.1. Duration

**Minimum Duration:** Two Years | **Maximum Duration:** Three Years

The candidate has to carry out research work under the supervision of a faculty member from the department.

**Student Supervisory Committee:** A Student supervisory Committee (SSC) will be formed within 2 months of the student joining the MS (R) program. The SSC should consist of the primary supervisor of the student and two additional members. At least one of the additional member should belong to the same department. The student is allowed to have a maximum of 2 thesis co-supervisors. The head of the department will serve as ex-officio member of the SSC.

**Monitoring the Progress of the Student:** The Supervisor will monitor the progress of the student through written reports and/or oral presentations. The student will submit a report to the supervisor within 15 days of the end of each semester in which the student has registered for thesis credits. The supervisor recommends the number of thesis credits considered as cleared at the end of the semester.

**Evaluation of Thesis:** Subject to fulfilling the course credit requirements and other conditions as may be laid down from time to time, the candidate may submit by M.S. thesis. The Research Supervisor will recommend to the Senate a panel of five experts approved by the SSC. One expert from the panel shall be appointed as external examiner and the supervisor(s) will be the internal examiner(s). The thesis shall be forwarded to all examiners who shall report separately on the thesis and forward their recommendation to the Associate Dean (Research). The Associate Dean (Research) will examine the reports of the thesis examiners and send them to Chairman, Senate. The reports shall thereafter be sent to the Research Supervisor for their perusal and necessary action. There may be three-possible situations arising out of the nature of the reports, and the steps to be taken appropriate to the circumstances shall be as laid down below:

- (i) The examiners are unanimous in recommending the award of the degree on the basis of the thesis without any modification. This is a clear case for going in for the final requirement of viva voce.
- (ii) The external examiner is recommending the award of the degree but has suggested modification and/or has asked for clarifications. The candidate in that case shall make modification and provide the clarifications as suggested within a time to be fixed by the Associate Dean (Research) which in no case shall exceed two months from the date the communication is sent to the candidate. These may be sent to the examiners, if so desired by them.
- (iii) The external examiner does not recommend the award of the degree. The Dean (Research) in such a case may either ask the candidate to modify the thesis as suggested within a given time not exceeding six months and send the modified thesis to the same examiner again or recommend to the Senate to appoint another external examiner or send the thesis to him/her in its original form. The recommendation of this additional examiner, at this stage, shall be taken as final.

Once the reports of the examiners have been accepted as satisfactory the candidate will have to defend his/her thesis before a viva board is not satisfied, the candidate has to appear again before the board within the next three months. The SSC shall recommend to the Senate the award of the MS Research degree if the viva voce is satisfactory and all the other requirements have been fulfilled. After the recommendations of the SSC either for acceptance of the thesis for the MS Research degree or for its rejection/modification have been accepted by the Senate and the Board of Governors or by their Chairman as the case may be, a copy of the reports of the examiners may be issued to the candidate at his/her request. However, the names of the examiners are not to be disclosed. On the basis of the report of the Board of Examiners, the Senate decides the student's eligibility for the award of master in Science Research degree. Nothing contained in

these Regulations shall preclude a candidate from publishing/patenting either independently or jointly with the supervisor the result of work incorporated in the thesis, at any time before or after submitting the thesis for examination.

**Converting form MS-R to PhD program:** A minimum GPA of 8 after the first two semesters of coursework is required for a student in the MS-R program to enroll into the PhD program. There must also be a faculty member of the department willing to supervise the student. Students, however must satisfy other requirements for the admission into the PhD program. The student is allowed to join the PhD program anytime between 12-18 months after joining the MS-R program. The student must submit an application to the head of the department. The head of the department will forward the application to the SSC for its recommendation. The SSC's recommendation is then forwarded to the Dean's office. The date of conversion is the date of registration in the PhD program.

The credit and thesis requirement for the PhD program will remain the same. However the student will be allowed to transfer the course and thesis credits earned in the MS (R) program. The duration of the PhD program will still remain the same- 5 years. Fellowship will be provided to the students from the date of conversion to the PhD program according to the institute rules without any arrears.

# PhD Programmes

## Abbreviations

• BME	Biomedical Engineering
• CE	Civil Engineering
• CFTI	Centrally funded technical institute
• CHE	Chemical Engineering
• CSE	Computer Science and Engineering
• CSIR-NET	CSIR National Eligibility Test
• DC	Doctoral Committee
• EE	Electrical Engineering
• ERP	External Registration Programme
• GFTI	Government funded technical institute
• GOI	Government of India
• HoD	Head of the Department
• HTRA	Half Time Teaching/Research Assistantship
• JRF	Junior research fellow
• ME	Mechanical Engineering
• MEE	Materials and Energy Engineering
• MHRD	Ministry of Human Resource and Development
• RPEC	Research Progress Evaluation Committee
• SRF	Senior research fellow
• UGC-NET	UGC National Eligibility Test

### 3. PhD Programmes

The institute, apart from establishing a robust teaching environment, is keen to facilitate and support cutting-edge research in a variety of areas. This aspect will enable the students to acquaint themselves with the latest developments in their respective areas of study and to pursue their own research interests. The institute offers PhD programme in a wide range of areas in Science, Engineering & Humanities and Social Sciences. The broad objective of the PhD programme is not only to keep pace with the expanding frontiers of knowledge but also to provide research training relevant to the present social and economic objectives of the country.

The academic programme leading to PhD degree is broad based and involves a minimum course credit requirement, comprehensive examination, synopsis seminar and thesis submission. The institute also encourages research in interdisciplinary areas through a system of joint supervision and interdepartmental group activities. The presence of highly motivated research oriented faculty members provides excellent opportunities for such programmes. The institute undertakes sponsored research and development projects from industrial and other organizations in public as well as private sector.

Facilities for research work leading to a PhD degree are presently available in the following departments.

1. Centre for Biomedical Engineering
2. Centre for Material and Energy Engineering
3. Department of Chemical Engineering
4. Department of Chemistry
5. Department of Civil Engineering
6. Department of Computer Science & Engineering
7. Department of Electrical Engineering
8. Department of Humanities & Social Sciences
9. Department of Mathematics
10. Department of Mechanical Engineering
11. Department of Physics

### 4. Ordinances

- 4.1. A candidate who has qualified for the award of Master's degree of this Institute or a recognised Institute or University in the discipline as prescribed in the regulations of the Senate is eligible to apply for the PhD programme of this Institute.
- 4.2. A candidate who has qualified for the award of Bachelor's Degree in Engineering / Technology with exceptionally good academic background in the discipline as prescribed in the regulations of the Senate is also eligible to apply for PhD programme in Engineering/Technology of this Institute.
- 4.3. The award of the PhD degree shall be in accordance with the regulations of the Senate of this Institute.

### 5. Regulations

#### 5.1. Categories of Admission

Candidates will be admitted to the PhD programme of the Institute under one of the following categories:

##### 5.1.1. Regular full-time scholars.

Students selected from HTRA list can move to Non-HTRA and revert back to HTRA later or vice-versa depending on the selection criterion adopted by the department during the intake of the candidate.

The regular full time scholars can be of the following categories.

##### 5.1.1.1. Institute research scholars

Students under this category are entitled for Institute Research Assistantship / Fellowship as per MHRD, GOI norms.

#### **5.1.1.2. Govt. /Semi Govt. Fellowship Awardees (CSIR, UGC, DAE, DST, DBT, NBHM, etc.)**

These candidates are financially supported under various Govt. / Semi Govt. schemes. The admission procedure and other requirements are same as applicable to Institute Research Scholars.

#### **5.1.1.3. Research Fellows under Projects/Schemes**

The admission procedure and other requirements for research Fellows (JRFs/SRFs) in various projects/schemes in the institute who wish to enroll for the PhD programme are the same as applicable to Institute Research Scholars. They will be paid assistantship/fellowships as per the norms of the project and sanctioned amount.

#### **5.1.1.4. Direct PhD programme**

Students under this category gets an opportunity to earn a doctorate in Engineering / Sciences / Humanities just after the Bachelor's degree.

#### **5.1.2. External Registration Programme (ERP)**

A research scholar under the External Registration Programme will carry out major part or all of his/her research work in the industry/research laboratories employing the scholar.

Research scholars under the External Registration Programme (ERP) should be sponsored by and employed in industries/research laboratories having R & D facilities and recognised by DST or IIT Ropar.

#### **5.1.3. Part time PhD programme**

A research scholar under the Part time PhD Programme will carry out major part or all of his/her research work at IIT Ropar under the supervision of supervisor(s) at IIT Ropar. The feasibility of doing this with sufficient intensity will be an important consideration in admitting the scholar in this category.

The candidate should be employed in a reputed University/Institution/Organisation.

Leave is not required for attending the courses.

#### **5.1.4. PhD programme for staff of IIT Ropar**

Members of non-teaching staff (working in permanent capacity, including technical and non-technical) may be permitted to join the Ph.D. program under this category.

Regulations pertaining to all kinds of PhD programmes will be common as detailed below, unless stated otherwise.

### **5.2. Reservation for admission**

#### **5.2.1. Reservation for SC/ST**

Reservation under SC/ST category will be allowed as per GOI rules.

#### **5.2.2. Reservation for the physically handicapped (PH)**

Reservation under PH category will be allowed as per GOI rules. They will not be allowed any other relaxation beyond this limit even if they belong to SC/ST category

### **5.3. Eligibility criterion**

1. Advertisement for admission to the PhD programme will be published on the website/newspapers (two times in a year) in the month of March/April for the first semester (that starts in July) of the academic year and in the month of September/October for the second semester (that starts in January) of the academic year.
2. The candidates who possess requisite qualifications as mentioned in the advertisement are eligible for admission to the PhD programme on the basis of
  - a. Overall academic career

- b. Entrance test conducted by the Department/School.
3. A candidate who has obtained research scholarship on the basis of CSIR-NET fellowship or equivalent examination will also be evaluated on the basis of (a) and (b) above only.

### 5.3.1. Eligibility for Regular Full Time PhD programme

The minimum educational qualification and research areas for admission to the PhD programme of the Institute in the following major disciplines are as furnished in the Institute website / Advertisement. Registration under this programme is generally open in the following Departments/Centers.

**PhD in Engineering** : CHE, CE, CSE, EE, ME, BME, MEE

**PhD in Science** : Chemistry, Physics, Mathematics

**PhD in Humanities and Social Sciences**

### 5.3.2. Eligibility for External Registration Programme (ERP)

Admission to this programme is open to the Departments/Centers as furnished in the Institute website / Advertisement. Registration under this programme is generally open in the following Departments/Centers.

**PhD in Engineering** : CHE, CE, CSE, EE, ME, BME, MEE

**PhD in Science** : Chemistry, Physics, Mathematics

**PhD in Humanities and Social Sciences**

#### 5.3.2.1. Minimum Eligibility Requirements

In addition to possessing the academic qualifications mentioned in the respective departments / centers, an applicant should fulfil the following requirements also:

##### 5.3.2.1.1. GATE or equivalent qualification

GATE or Equivalent Qualification is not required for admission.

##### 5.3.2.1.2. Professional Experience

Should have completed full time employment of 2 years of service as on the deadline of application (of the year of admission into the programme).

##### 5.3.2.1.3. Organization / Institution

Organisation / Institution must have at least 5 years of its existence for sponsoring candidates to ERP programme. Only persons engaged in R & D work in Technical / Scientific Institutions/ Industries or R & D Establishments are eligible. The organization should have adequate facilities for carrying out research. All CFTIs/GFTIs will be considered irrespective of their years of existence.

##### 5.3.2.1.4. Sponsorship / NOC

Unconditional sponsorship or NOC by the employer is essential and a must at the time of joining. IIT Ropar will not have any financial liability for the candidate throughout the tenure of PhD.

### 5.3.3. Eligibility for Direct PhD programme

Admission to this programme is open to the Departments/Centers as furnished in the Institute website / Advertisement. Registration under this programme is generally open in the following Departments/Centers.

**PhD in Engineering** : CHE, CE, CSE, EE, ME, BME, MEE

**PhD in Science** : Mathematics (Only CFTIs), Chemistry, Physics

**PhD in Humanities and Social Sciences**

#### 5.3.3.1. Minimum Eligibility Requirements

##### 5.3.3.1.1. For Students of Centrally Funded Technical Institutes (CFTIs)

1. Studying in final year of B.Tech./BE
2. No GATE or other equivalent national exam qualification required

3. CGPA of at least 8.0 out of 10.0

#### **5.3.3.1.2. For Students of Non-CFTIs**

1. Studying in final year B.Tech./BE
2. GATE or other equivalent national exam qualification required at the time of joining
3. CGPA of at least 8.0 out of 10.0

#### **5.3.3.2. Programme Details**

Regular PhD programme guidelines will be followed

#### **5.3.4. Eligibility for Part time PhD programme**

Admission to this programme is open to the Departments/Centers as furnished in the Institute website / Advertisement. Registration under this programme is generally open in the following Departments/Centers.

**PhD in Engineering** : CHE, CE, CSE, EE, ME, BME, MEE

**PhD in Science** : Mathematics (Only CFTIs), Chemistry, Physics

**PhD in Humanities and Social Sciences**

##### **5.3.4.1. Minimum eligibility requirements**

In addition to possessing the academic qualifications mentioned in the respective departments / centers, an applicant should fulfil the following requirements also.

##### **5.3.4.1.1. GATE or equivalent qualification**

Minimum qualification for these candidates is the same as for full-time candidates except that the requirement of qualifying in a national examination (e.g., GATE or equivalent) is waived off.

##### **5.3.4.1.2. Professional Experience**

The candidate should have a minimum experience of 2 (two) years (full time) after B.Tech./ M.Tech/ M.Sc./ M.A. or equivalent as on the date of registration.

##### **5.3.4.1.3. Sponsorship/NOC**

Part-time candidates are required to submit a “No Objection Certificate” on a proper letter head from the appropriate authority in the organization clearly stating the following:

- The candidate is permitted to pursue studies on a part-time basis.
- That his/her official duties permit him/her to devote sufficient time for research.
- Facilities for research in the candidate’s field of research in the area in which admission is sought are available at the candidate’s place of work.
- He/she will be fully relieved from duty and permitted to reside at the Institute for the period required residency.

##### **5.3.4.1.4. NOC in case of change or organization**

If the candidate after joining PhD program changes the organization, he should get NoC from the new organization as well.

#### **5.3.5. Eligibility of PhD programme for staff**

Registration under this programme is open in the Departments/Centers as given in the advertisement. All common rules laid down in the Ph.D. Regulations relating to course work, prosecution of research work under the supervision of a member of faculty, etc. shall be applicable to all members of staff when being enrolled.

##### **5.3.5.1. Minimum eligibility requirements**

For admission to the program a member of staff must fulfill the prescribed norms and at the qualifying



examination he/she must have obtained at least the percentage of marks/grade/CGPA at par with the regular PhD programme. The Chairman of the Senate may, on the recommendation of the RPEC, relax the above norm to the extent deemed reasonable in the case of a staff member of the Institute having long experience and/or additional professional qualification.

#### **5.3.5.1.1. GATE or equivalent qualification**

Minimum qualification for these candidates is the same as for full-time candidates except that the requirement of qualifying in a national examination (e.g., GATE or equivalent) is waived off.

#### **5.3.5.1.2. Sponsorship/NOC**

Prior permission/NOC has to be obtained from competent authority before applying for admission to the program. Institute work should not suffer due to joining the PhD programme by the candidate.

#### **5.3.5.1.3. Other conditions**

The other conditions for permission of staff shall be as follows.

1. The application for administrative permission to join a research program by a member of non-teaching staff must be submitted through the Head of the Department/Centre or the Section In-charge, as the case may be. While submitting the application he/she must give an undertaking in the prescribed form to the effect that he/she will abide by all rules and regulations.
2. If the exigencies of Institute work so require, the permission granted to a member of non-teaching staff under these rules can be withdrawn by the Institute at any time without assigning any reason.
3. Every application for permission under these rules shall be examined by the RPEC taking into account whether the proposal for joining the program for which permission is sought for, arises out of genuine interest and ability.
4. After the permission is granted he/she will submit his application on prescribed form together with the prescribed enrolment-cum-registration fee. On receipt of this application the Head of the Department/Centre concerned will proceed for composition of the DC.
5. The minimum period to be spent in the research work by a member of non-teaching staff registered for the Ph.D. degree shall 4 years. The maximum period admissible for completion of the work and submission of the thesis shall, however, remain to be the same as in the case of regular candidates.

## **5.4 Selection Procedure**

Eligible candidates possessing the minimum educational qualifications and satisfying additional criteria set by the departments from time to time, will be called for an Interview and/or Test by the Selection Committees of the respective departments.

Based on the academic record and the performance of the candidates in the interview and/or test, the Departmental Selection Committee will recommend to the Dean (Academics) the names of candidates found suitable for admission to the PhD Programme.

## **5.5 Admission to the programme**

1. Candidates whose selection is approved by the Dean (Academics) will be admitted to the PhD programme after payment of prescribed fees.
2. Ordinarily, a candidate is not eligible for re-registration for PhD after cancellation of his/her earlier registration for any reason. Based on the merits of the individual case and taking into consideration of any special circumstances, a candidate may be considered for re-registration.
3. All selected candidates who are Indian citizens and who do not receive any other scholarship or funding will be provided financial support by the Institute. Admission to reserved-category candidates will be as per Government of India notification.
4. A limited number of Research Assistantships and other financial support for attending conferences within

India and abroad are available as per MHRD norms subject to the conditions prescribed in the Institute regulations.

### **5.5.1. Admission to ERP**

Candidate admitted to the programme must continue to remain in the same organization and place of work until the research work is completed. If the candidate is transferred or joins a new organization before the submission of the thesis, he/she should get the approval from the new organization for continuation of the programme

## **5.6. Registration**

### **5.6.1. Registering for the programme**

A candidate who is selected for PhD the programme will be enrolled by paying the requisite fee on the stipulated date. An entry number will be allotted to the candidate after enrollment. In addition to the semester and hostel fee, candidates need to produce medical fitness certificate. The candidate has to carry out research work under a supervisor from amongst the faculty of the Institute.

### **5.6.2. Minimum period of registration**

1. Candidate with a B.Tech/M.Sc/M.A degree or its equivalent: Shall be required to be registered for the degree for a period of not less than 3 calendar years (36 months) from the date of his initial registration. In exceptional cases, the minimum period of registration may be reduced to 2 calendar years (24 months) upon recommendation of the DC and subsequent approval of the Senate.
2. Candidate with an M.Tech degree or its equivalent: The minimum period of registration shall be 2 calendar years (24 months).

#### ***5.6.2.1. For non-teaching staff of IIT Ropar***

The minimum period to be spent in the research work by a member of non-teaching staff registered for the Ph.D. degree shall be 4 years.

### **5.6.3. Maximum period of registration**

The candidates of all categories shall normally submit their thesis within a period of 5 years from the date of their initial registration for the PhD programme. However, as a special case, this limit may be extended to a maximum of 7 years by the Dean (Research) after which the registration shall stand cancelled automatically.

#### ***5.6.3.1. For ERP candidates***

Maximum registration period of the programme will be one year in addition to regular PhD programme of IIT Ropar.

#### ***5.6.3.2. For Direct PhD candidates***

Maximum registration period of the programme will be at par with the regular PhD programme of IIT Ropar.

#### ***5.6.3.3. For non-teaching staff of IIT Ropar***

The maximum period admissible for completion of the work and submission of the thesis shall, however, remain to be the same as in the case of regular candidates.

## **5.7. Fellowship and advance**

Fellowship will be given to the candidates as per MHRD norms or external funding agency directives, as applicable.

The institute may provide advance as per existing norms and practices.

### **5.7.1. Transfer of project fellowship to Institute fellowship**

1. This applies to candidates who are already registered under the PhD programme. Project fellowships cannot be transferred to Institute fellowship so long as funds are available in the project.
2. Minimum time for which a student has to work in a project to get transferred to Institute fellowship is 1 year.

### **5.7.2. Fellowship for Direct PhD students**

The duration and amount of fellowship will be as per MHRD norms.

### **5.7.3. Fellowship for PhD of staff of IIT Ropar**

Members of staff permitted and enrolled for the PhD degree shall not be entitled to any fellowship.

## **5.8 Choice of supervisor**

### **5.8.1. Allotment of supervisor**

Allotment of research scholars to supervisor(s) will be made by the Head of the Department (HoD) taking into consideration the research profile of the department and the preferences of the research scholars and supervisor(s) as per the departmental policy.

### **5.8.2. Maximum number of supervisors allowed**

There shall be not more than two supervisors from the Institute for a research scholar.

### **5.8.3. Choice of supervisor for ERP candidates**

#### ***5.8.3.1. Research Supervisor(s) from IIT Ropar***

A maximum of 1 supervisor is allowed from IIT Ropar in case the student has a joint research supervisor from his parent institute. If the student has a coordinator from his parent institute, then he/she can have maximum 2 supervisors from IIT Ropar.

#### ***5.8.3.2. Joint Research Supervisor/Coordinator***

(for candidates from industry/research laboratories)

Candidate should identify a Joint Research Supervisor (should hold a PhD degree)/Coordinator from the sponsoring organization (who must be a permanent staff member).

The person should be willing to supervise/coordinate the research work of the candidate.

The person should be from the same establishment/laboratory in which the candidate is employed.

## **5.9 Choice of co-supervisor(s)**

Additional Supervisor from outside the Institute can be allowed with the approval of Chairperson, Senate on case to case basis.

Co-supervisor from other IITs / Institutions / Industries with a minimum academic qualification of Master's degree in Engineering / Management and with adequate professional experience in the relevant field or PhD in relevant area may be nominated for PhD scholars on the request of scholar / supervisor.

The recommendation for the co-supervisor shall be made with valid reasons and justifications by the DC of the research scholar.

Appointment of Co-supervisor by the Head of the Department on the recommendation of the supervisor within 24 months from the date of joining for the PhD scholars. After the time limit, the co-supervisor shall be made with valid reasons and justifications by the DC of the research scholar.

### 5.9.1. Number of co-supervisors allowed per PhD student

The number of co-supervisors can be restricted to a maximum of 1. This process has to be completed before the confirmation of candidacy.

## 5.10 Doctoral Committee

The Head of the Department (HoD) will intimate to the Dean (Research), for each scholar the area of research, the name(s) of the supervisor(s) and the names of faculty members comprising of the Doctoral Committee (DC), within 15 days of the date of joining of the research scholar. The final approving authority of the DC will be Dean (Research).

The following would be the composition of the Doctoral Committee (DC):

1. **Chairperson:** Head of the Department (HoD/nominee of HoD) ((If the HoD happens to be the Supervisor of a scholar, the senior most Professor / previous HoD/ senior most Associate Professor will be nominated by Chairperson, Senate or his nominee)

HoD may nominate Chairperson, if he/she is otherwise engaged for the conduct of DC meetings to assess the progress of the scholars.

When a new HoD joins, the previous HoD will continue to be the Chairperson of the already existing DCs.

Chairperson, DC must be present for comprehensive Exam / Synopsis / Thesis report / Viva voce meetings of the Scholar.

2. **Convenor:** Research supervisor(s)
3. **Member 1:** A minimum of 1 faculty member of the Department nominated by the HoD. They will be chosen from a panel of 3 experts submitted by the supervisor(s).
4. **Member 2:** A minimum of 1 faculty member of allied Departments or allied Institutions nominated by the HoD. He /She may be chosen from a panel of 3 experts submitted by the supervisor(s).
5. **Member 3:** A minimum of 1 faculty member nominated by the HoD from any of the above panels.

The research supervisor(s) may suggest the constitution of the DC. However, it is desired that as far as possible the research supervisor(s) should avoid keeping the same DC members for his/her students.

### 5.10.1. DC member goes on long leave or retires

In case any member goes on leave exceeding one year duration, or resigns or retires from the Institute, the HoD or his nominee will nominate another member and duly inform the Dean (Research).

## 5.11. Change/Addition of Supervisor

The Doctoral Committee of a research scholar may recommend change of supervisor or appointment of a co-supervisor for valid reasons.

A faculty member appointed as a PhD supervisor is normally expected to be available to a research scholar in the Institute till the thesis viva-voce examination. However, under unavoidable circumstances, such as: long leave of more than 12 months; resignation; retirement; or death; a supervisor may not be available to the scholar. In such special cases, appointment of supervisor(s) will be regulated as under:

### 5.11.1. A supervisor proceeding on long leave of more than 12 months

#### 5.11.1.1. Joint supervisor exists

The supervisor proceeding on leave for more than 12 months can continue to be a Joint-Supervisor.

#### 5.11.1.2. Joint supervisor does not exist

A Joint-Supervisor may be appointed by the DC in case where a student has not yet submitted his synopsis.

### **5.11.1.3. Stages of thesis**

Depending on the stage of the thesis work, the following situations can arise.

#### **5.11.1.3.1. Synopsis /thesis submission done**

If the synopsis/thesis is submitted before the supervisor proceeds on leave, he will continue to be the supervisor and only a caretaker supervisor will be appointed.

#### **5.11.1.3.2. Major revision of the thesis is necessary**

If a major revision becomes necessary, and the sole supervisor is on leave, he should be asked to specifically state whether he would effectively help the student carrying out the major revisions within a reasonable time. In case the sole supervisor expresses his inability due to one reason or the other, the caretaker supervisor, if he provides the required help in carrying out the major revision, will automatically be treated as joint-supervisor of that candidate.

#### **5.11.1.4. Supervisor wants to extend his leave**

If a supervisor proceeds on leave for a period less than 12 months initially, but later extends his leave beyond 12 months, the above procedure will be followed. The extension granting authority will inform the PhD Section accordingly.

### **5.11.2. A supervisor retires**

1. A faculty member who is to retire within 3 years may be permitted to become a supervisor to a new scholar with another faculty member, who is not likely to retire within 5 years as co-supervisor, at the time of registration itself. On retirement, the faculty member will continue to be a supervisor and will be invited to the Doctoral Committee meetings, synopsis meeting and viva voce examination.
2. In other cases, a faculty member on retirement may continue as
  - a. A Supervisor, if re-employed as an Emeritus Fellow
  - b. A Supervisor, if he/she has supervised a candidate for at least 3 years. However, a co-supervisor who is in service will be appointed in addition. The supervisor who has retired will be invited for the Doctoral Committee meetings, synopsis meeting and the viva voce examination.
  - c. A Joint-Supervisor, if the synopsis of the thesis has been submitted. Appointed of another Supervisor, if necessary, will be as per above or as a caretaker Supervisor.

### **5.11.3. A supervisor resigns**

If the supervisor resigns before completion of comprehensive examination, a new supervisor be appointed on recommendation of DC.

If the supervisor resigns after completion of comprehensive examination, he/she may chose to remain as the supervisor or appoint a co-supervisor/caretaker supervisor as suggested by the DC.

### **5.11.4. A supervisor expires**

A new supervisor will be appointed, if necessary, on recommendation of DC.

## **5.12 Course Work**

All candidates enrolled for the PhD programme are required to complete the following credit requirements towards course work. The course work has to be decided by the DC.

Particulars	Credits Requirement
PhD in Science and HSS Departments for candidates with M.Sc/MA degree	15
PhD in Science and HSS Departments for candidates with M.Tech/M.Pharm/M.Phil degree	12
PhD in Science and HSS Departments for candidates with BE/B.Tech Degree	20
PhD in Engineering Departments with candidates having ME/M.Tech/MS degree	12
PhD in Engineering Departments with BE/B.Tech./MSc. degree	20

Course work has to be normally completed within 18 months from the date of registration. Candidates are required to complete the course work with a minimum CGPA of 7.0 and Minimum grade in a subject should be at least 'C'. In case, a student fails in a given course, then DC can recommend to repeat the course or recommend another course as a replacement to complete the minimum CGPA requirements. For ERP candidates, the course work credit requirements and duration to complete courses is same as regular (M.Tech intake) / Direct (B.Tech intake) PhD scholars.

### 5.13. Minimum Residential Requirement

Regular PhD students have to stay within campus during their entire period of studentship. However, special permission, on a case to case basis may be granted by the competent authority for staying outside of campus.

#### 5.13.1. For ERP candidates

Candidate is required to spend a minimum of one semester at IIT Ropar right after admission (during course-work). Otherwise, the registration is liable to be cancelled.

#### 5.13.2. For Part Time candidates

For part-time candidates from outside, there is a minimum residency requirement of 4 months. DC may specify a higher or lower residency requirement based on the courses recommended as well as the background. The minimum residency period can be completed in parts in the entire tenure of PhD. However, the minimum period of residence for each period should not be less than 3 weeks.

The minimum period to be spent in the research work by a student working under part time PhD programme shall be 4 years.

#### 5.13.3. Temporary withdrawal from the programme

Withdrawal from the programme is permitted for a semester or longer for reasons of ill health or other valid grounds as duly recommended by DC. However, the maximum period of registration will remain unchanged.

### 5.14. Attendance

Attendance should be in compliance with the leave rules of IIT Ropar or the applicable external funding agency.

### 5.15. Progress Report

1. DC will monitor the progress of the research scholar.
2. The research scholar needs to submit the progress report duly forwarded through research supervisor (of IIT Ropar, in case of ERP candidates) and DC to Dean (Research) office within 15 days of the end of each



semester. If two consecutive progress reports are not submitted/not satisfactory, registration of the student may be cancelled.

3. In case of joint supervisors, the progress report must be submitted with the signature of all the research supervisors.
4. The Progress report is not required to submit, in case the student has proceeded on maternity leave, semester leave etc.
5. In case, the supervisor proceeds on long leave, the caretaker supervisor will forward the progress report of student.
6. In the case of research scholars under ERP or working on a Part Time basis, the Doctoral Committee will pay particular attention to the quantum of effort put in by the scholar towards doctoral studies and progress.

## 5.16. Comprehensive Examination

1. After the successful completion of course work the student needs to appear for comprehensive exam.
2. Every PhD scholar shall take and perform satisfactorily in a Comprehensive Examination in his/her Department.
3. The comprehensive examination will consist of two parts
  - a. Examination on basic concepts of the subject
    - i. Written examination: Minimum weightage should be 30%
    - ii. Oral examination: Minimum weightage should be 30%.
    - iii. The minimum passing marks for this (written + oral) should be 50%
  - b. Thesis proposal seminar
    - i. Should focus on the research problem to be taken up
4. The Comprehensive Examination should be conducted with the following committee
  - a. Oral examination:
    - i. DC members
    - ii. Dean (Research) / Dean (Academics) should nominate a senior faculty member from outside the DC to be present during the oral examination.
  - b. Thesis proposal seminar:
    - i. DC members
    - ii. One external expert chosen by Dean (Research) from a panel of 5 experts given by the supervisor.
5. The student must qualify the written and the oral exams within 18 months of registering into the PhD programme for regular candidates. Direct PhD students and students having B.E/B.Tech degrees have to complete the same within 4 semesters. The above are inclusive of the second attempt by the candidate.
6. The student must qualify the thesis proposal seminar within 24 months of registering into the PhD programme for regular candidates. Direct PhD students have to complete the same within 5 semesters. The above are inclusive of the second attempt by the candidate.
7. If the candidate is unable to qualify the comprehensive exam, his/her registration for the PhD programme may be cancelled.

## 5.17. Candidacy Confirmation

1. The candidacy of a student will be confirmed for the PhD degree after successful completion of course work and comprehensive examination. Candidacy for the PhD degree shall be effective, normally from the date of registration
2. The candidacy of a candidate may be deferred by the DC on account of unsatisfactory progress.
3. A candidate is required to submit the thesis before the expiry of the registration period. In the event of the candidate failing to submit the thesis within the period, the registration shall lapse automatically.
4. PhD scholars should submit their thesis as stated below.

- a. Regular PhD scholars: Within 5 years from the date of registration
- b. Direct PhD: Within 5 years from the date of registration.
- c. The DC may recommend to Dean (Research) to extend the period of submission of the thesis further 2 years with an additional year for research scholars under external registration

### 5.18. Enhancement seminar

The seminar related to enhancement of fellowship from JRF to SRF for students getting fellowship from external agencies, will depend on the respective rules of the funding agencies.

### 5.19. Enrolment

All research scholars who are in residence and whose registration is still in force, are required to enroll each semester on the stipulated date.

### 5.20. Conversion from full time to part time PhD programme to take up job

PhD Scholars who got a job offer can get relief from full time PhD programme based on the recommendations of DC, RPEC and subsequent approval of the Senate, while keeping their registration alive on payment of the requisite fees every semester, on the following conditions:

1. If they have completed their
  - a) Minimum residential requirement
  - b) Course work
  - c) Passed the comprehensive examination, given the research proposal seminar which is adjudged as satisfactory.
2. The candidate must produce the offer letter from the institution/organization which he/she proposes to join.
3. The candidate has to produce a “No Objection Certificate” from the Head of the institution/organization, which he/she proposes to join.

Such conversion will be subject to the following conditions:

1. The student must complete his/her thesis within 7 years counted from the date of his/her first registration in the programme
2. Provision of conversion from full-time to part-time status can be availed of only once by the student during his/her programme
3. The status of the student will be reviewed by the supervisor and the DC at least one every two semesters after the conversation, and his/her continuation on part-time status will be subject to his/her making satisfactory progress towards completing the PhD thesis.

### 5.21. Leave rules

PhD students may be granted leave on application to the Head of the Department (HoD) concerned through their respective supervisor(s). The following applies to all leave unless stated otherwise.

- Unless otherwise stated all leave will be approved by the concerned HoD upon recommendation of the supervisor(s).
- The leave application (excepting personal leave and medical leave (in case of emergency)) has to be submitted to the department at least 7 working days before the requested commencement of leave.



- The maximum period of registration remains unchanged for all cases.
- Leave will be sanctioned as per calendar year. It will be granted on pro-rata basis to those students who join midway.

#### **5.21.1. Personal leave**

All Research Scholars under TA/RA/SF are entitled for leave for a maximum of 30 days per year in addition to Public Holidays. This leave can be carried over to the next year and accumulated up to 10 days. The carried over leave can be taken in any semester. The total number of leaves should not exceed 21 days for any semester. While sanctioning the leave, HoD must make sure that the TA duties have been taken care of.

#### **5.21.2. Withdrawal for a long period (beyond 30 days)**

Withdrawal beyond 30 days in an academic year may be granted to a Research Scholar in exceptional cases, by Dean (Research) on the recommendation of DC.

- Withdrawal beyond 30 days will be without Assistantship/Scholarship.
- The causes of such withdrawal could be due to personal, medical or professional reasons.
- Such an extension of up to additional 30 days will be granted only once during the programme of the Scholar.
- Withdrawal may be subject to the approval of the Head of Department / Centre / Programme Coordinator concerned on the recommendation of the supervisor(s); and a proper withdrawal account of each scholar shall be maintained by the Department/ Centre/ Programme Coordinator concerned.
- In exceptional circumstances the Dean (Research) may, on the recommendation of the DC grant a Research Scholar withdrawal without assistantship for a period not exceeding 12 months in the entire period of his tenure for purpose of accepting teaching / research assignment on temporary basis provided the post accepted by research scholar is in the same school or in an educational institution, R & D organization or an industry of repute.
- When a scholar is permitted such withdrawal without assistantship the enhancement of fellowship or comprehensive examination (in case it has not taken place yet) shall be deferred for the appropriate period. However, the date of termination of fellowship remains unchanged.

#### **5.21.3. Duty leave**

Duty leave is permissible for performing experiments, attending Schools / Seminars / Conferences / Workshops / Meetings etc. in India or abroad involving an active participation or field trips such as data collection, survey work, etc. on recommendation of the concerned supervisor(s), forwarded by the HoD and subsequent approval by Dean (Research) on a case to case basis.

This kind of leave is also permissible for institute related activities (e.g., sports, cultural fests, technical fests, etc.) on recommendation of the concerned supervisor(s), forwarded by the concerned Faculty-in-Charge / Officer for the particular activity and HoD and subsequent approval by Dean (Research) on a case to case basis.

Before forwarding the application, the concerned HoD must ensure that TA duties have been taken care of.

#### **5.21.4. Medical leave**

Leave on medical ground, duly supported by a medical certificate, may be granted to a student for up to 10 days per year. Such leave shall not entail any loss of financial assistantship.

#### **5.21.5. Maternity leave**

Women scholars are entitled for maternity leave at the full rate for a period as per the GOI rules, only once during the tenure of their studentship. The application should be supported by a medical certificate. In such cases, the maximum period of registration may be extended by the period of maternity leave availed.

When a scholar is permitted such leave the enhancement of fellowship or comprehensive examination (in case it has not taken place yet) shall be deferred for the appropriate period. However, the date of termination of fellowship remains unchanged.

#### **5.21.6. Paternity leave**

Male Scholars are entitled for 15 days of paternity leave at a stretch only once during the tenure of their award. This should be supported by a medical certificate.

When a scholar is permitted such leave the enhancement of fellowship or comprehensive examination (in case it has not taken place yet) shall be deferred for the appropriate period. However, the date of termination of fellowship remains unchanged.

#### **5.21.7. Vacation leave**

Not applicable.

#### **5.21.8. Absence without sanctioned leave**

Absence without sanctioned leave will entail loss of financial assistantship for the period of absence, and may result in the termination of the student's programme on the recommendation of the DC and approval of RPEC.

#### **5.21.9. Leave for students from external funding agencies**

Research scholars getting funded through external funding agencies will be governed by institute rules. In case of any difference of policy with the funding body, the Senate takes a decision.

#### **5.21.10. Registration and fees during leave**

A student granted academic leave for one or more semesters, should pay prescribed fees in every semester as per schedule.

### **5.22. Cancellation of Registration**

1. The registration of a research scholar whose progress is not found to be satisfactory consecutively twice by the DC is liable to be cancelled.
2. The registration of a research scholar who has not enrolled within time is liable to be cancelled.
3. The registration of a research scholar who has not submitted his/her thesis before the end of the maximum permissible period will be cancelled.
4. If the scholar absents him/herself for a continuous period of four weeks without prior intimation/sanction of leave.
5. If the scholar resigns from the Ph.D. Programme and the resignation is duly recommended by the DC.
6. If the scholar does not clear the comprehensive examination as stipulated
7. If the CGPA is below 7.00 at any time while doing course work.
8. If the scholar is found involved in an act of misconduct and/or indiscipline and termination is recommended by a competent authority.

### **5.23. Synopsis**

On satisfactory completion of the prescribed courses, the comprehensive examination and the research work, the scholar shall submit the requisite copies of the synopsis of his/her research work in the required format through the DC with its recommendations to the Research Section.

#### **5.23.1. Synopsis criterion**

Prior to submission of the synopsis, the scholar

1. Is required to give at least 2 open seminars on the topic of his/her research.
  - a. One of these would be the thesis proposal seminar delivered as a part of the comprehensive examination.
  - b. The other should be delivered at least 6 months before the synopsis seminar.

2. The scholar should have at least 1 paper either published or accepted for publication in a refereed journal.
3. DC may consider exceptional cases, which will be reported to Senate.

#### **5.23.2. External experts for synopsis presentation**

The supervisor(s) shall suggest a panel of 5 external experts for evaluation of the synopsis seminar to the Dean (Research) through their respective HoD.

The expert will be chosen from the panel by Dean (Research).

#### **5.23.3. Synopsis presentation**

1. The research scholar shall present the synopsis seminar to an open audience in which besides others the DC members will be present. Dean (Research) and/or Director may attend as invitees in the synopsis seminar.
2. The seminar lecture will test the candidate's depth of knowledge and progress in his/her research.
3. The candidate shall be allowed to submit his/her thesis for the PhD degree only when the DC is satisfied with the work.
4. If the DC is not satisfied with the quality of the work or the general preparation of the candidate, the candidate will have to appear again for the seminar within a maximum period of 6 months.

### **5.24. Submission of Thesis**

1. Subject to fulfilling the course credit requirements and other conditions as may be laid down from time to time, the candidate may submit the PhD thesis.
2. The thesis has to be submitted within a minimum period of 2 (two) years and maximum period of 7 (seven) years from the date of registration.
3. The thesis must be submitted within 2 (two) months of successful completion of the synopsis seminar. If the thesis is not submitted within the above mentioned period, the candidate shall be required to submit fresh synopsis. However, in case a candidate fails to submit the thesis but has suitable justification for the same, the Dean (Research) may on recommendations of DC and on individual merit of each case grant the candidate an extension for not more than 2 (two) months for submission of the thesis.
4. The scholars should submit the synopsis along with thesis in hard and soft copy.
5. The research scholar shall submit 3 (three) copies of the thesis and abstract of the thesis.

#### **5.24.1. Thesis guidelines**

1. Besides a soft copy (CD)/USB storage, a candidate shall submit 3 (three) copies of the thesis neatly typed or printed and bound in a manner notified separately. The thesis must contain the text and common matters like bibliography/references and summary/conclusions.
2. A preface/introduction in which the candidate shall state whether the thesis is based on discovery of new facts or new interpretation of established facts by others, or based on exhaustive study and critical analysis of published work of others, or design, or development;
3. Bio data of the candidate within one page (i.e. name, date of birth, educational qualification, research experiences, professional experience, if any, and permanent home address).
4. An abstract of the thesis (about 500 words) with key words (about 5)
5. A certificate (in standard format from the supervisor that (a) the work has been carried out under his/her/their supervision, (b) the candidate has fulfilled all prescribed requirements and c) the thesis which is based on the candidate's own work has not been submitted elsewhere for a degree/diploma.

## 5.25. Thesis Report

1. The examiner is expected to send the report on the thesis within 2 (two) months from the date of receipt of the thesis.
2. In case of undue delay in receiving the thesis report, the Chairperson, Senate or his/her nominee shall appoint another examiner in his/her place for evaluating the thesis.

### 5.25.1. Outcome of thesis reports

The Dean (Research) will forward the reports of the thesis examiners to the DC for their perusal and necessary action. There may be the following possible situations arising out of the nature of the reports, and the steps to be taken appropriate to the circumstances shall be as laid down below:

#### ***5.25.1.1. The examiners are unanimous in recommending the award of the degree on the basis of the thesis without any modification.***

This is a clear case for going in for the final requirement of viva voce.

#### ***5.25.1.2. The external examiners are unanimous in recommending the award of the degree but have suggested modification and/or have asked for clarifications.***

The candidate in that case shall make modification and provide the clarifications as suggested within a time which in no case shall exceed six month from the date the communication is sent to the candidate, failing which the revised thesis will not be accepted and his/her registration will be cancelled. These may be sent to the examiners, if so desired by them.

#### ***5.25.1.3. One of the external examiners does not recommend the award of the degree and rejects the present form of the thesis while the other external examiner recommends the award.***

The DC in such a case may either ask the candidate to modify the thesis as suggested within a given time not exceeding six months and send the modified thesis to the Dean (Research) to be forwarded to the same examiner again or recommend to the Senate to appoint another external examiner or send the thesis to him in its original form. The recommendation of this 'third' examiner, at this stage, shall be taken as final.

#### ***5.25.1.4. Both the external examiners reject the thesis.***

In the event of a thesis being rejected by both the external examiners the Senate may, on the recommendation of the DC and forwarded by Dean (Research), permit submission of a revised thesis on an additional payment of the prescribed fee, after a suitable time to be fixed by the Senate. The observations and comments of the examiners, if any, may be copied and given to the candidate on request. In no case should a resubmission of the thesis without modification along the lines of criticism made by the earlier examiners, if any, may be allowed. The revised thesis shall be referred for assessment to two external examiners selected from a new panel of 10 experts recommended by the Research Supervisor. In case, both the experts reject the revised thesis again, the thesis will stand rejected and the registration of the candidate cancelled.

#### ***5.25.1.5. The reports obtained are ambiguous***

In case of any ambiguity in the reports or the recommendations received from the examiners, the DC may recommend an interpretation of the reports which will be considered by the Dean (Research) and further Chairperson, Senate for approval.

### 5.25.2. Acceptance of satisfactory reports

1. Once the reports of the examiners have been accepted as satisfactory, DC will hold a meeting in presence of Dean (Research).
2. The names of the external examiners may be revealed by Dean (Research) in this meeting.
3. The DC upon examination of the reports shall recommend to the Dean (Research) for the PhD viva voce examination.
4. The DC shall make recommendations for the viva voce board during this meeting.
5. In the viva voce examination, the candidate will have to defend his/her thesis before the viva voce board.

## **5.26. Viva Voce Examination**

### **5.26.1. Evaluation during Viva Voce**

1. The viva voce board will examine the scholar on his/her thesis work and evaluate his/her performance as satisfactory or otherwise.
2. The viva voce board will ensure that the scholar answers satisfactorily the questions raised by the thesis examiner(s).

### **5.26.2. Reappearing for Viva Voce**

1. If the report of the viva voce board declares the performance of the research scholar not satisfactory, he/she may be asked to reappear for viva voce at a later date (not earlier than a month and not later than 3 months from the date of the first viva voce).
2. If the viva voce board on the second occasion also evaluates the performance of the research scholar not satisfactory, the matter will be referred to Senate for a decision.

### **5.26.3. Final form of thesis**

1. The viva voce board may also recommend revision to be made in the final version of the thesis after taking into consideration suggestions of the examiners who evaluated the thesis and the discussion at the viva voce examination.
2. The Chairperson of the viva voce board shall forward the thesis to the research section certifying that the revisions recommended by the viva voce board, if any, have been incorporated in the copy of the thesis along with the report of the viva voce board.
3. The research scholar shall submit one copy of the final form of thesis in A5 size (double-sided) and an electronic version in PDF format after the viva voce board recommends the award of the PhD degree.
4. Nothing contained in these Regulations shall preclude a candidate from publishing/patenting either independently or jointly with the supervisor the result of the work incorporated in the thesis, at any time before or after submitting the thesis for examination.
5. Patents, if any, will be in the name of IIT Ropar. The inventors for a particular patent will be as per the Intellectual Property Rights (IPR) policy of the institute.

## **5.27. Award of PhD Degree**

1. If the performance of the research scholar in the viva voce is satisfactory and has completed all the prescribed requirements and has cleared all fees and dues payable to the Institute, he/she will be awarded PhD degree on the recommendation of the Senate and with the approval of the Board of Governors of the Institute.
2. A provisional degree may be given to the candidate, on request, if the award of the final degree is delayed due to any reason, whatsoever.

## **5.28. Publication of the thesis by the institute**

The institute has a right to publish the thesis in repositories after submission. However, the candidate can request to defer such publication of his/her thesis by a maximum period of 1 year keeping in mind the pending patents and publications linked to the thesis.

## 6. Fees

### 6.1. Mode of Payment

#### 6.1.1. Institute dues

All Institute dues are to be paid through Demand Draft favoring “The Registrar, IIT Ropar” payable at Ropar / through Netbanking.

#### 6.1.2. Mess dues

Mess dues are to be paid by demand draft favoring “The Director, IIT Ropar, Hostel Account” payable at Ropar or State Bank of India Internet Banking as available.

### 6.2. Deadlines for Payment

#### 6.2.1. Institute dues

- (i) All Institute dues to be paid in full before the last date for Late Registration (this is typically one week after the first day of classes)
- (ii) Students who do not pay the required amount by this date, or those who make partial payments, shall have their registration cancelled. Registration will be restored on payment of fees and a fine as stipulated in the Institute rules.
- (iii) In case of new entrants, the fee has to be paid by demand draft on the day of registration at the time of joining the Institute.

#### 6.2.2. Mess dues

All Mess dues are to be paid on or before the date for Registration Validation, i.e. before the first day of classes

### 6.3. Refund of Fees

The whole amount of fees/other charges deposited by the students will be refundable after deduction of Rs. 1,000/, if the students do not join the programme after paying the dues and leave the Institute by applying for refund on or before the date of registration. No refund of fees will be permissible to students who have registered for the programme but leave immediately thereafter. In such cases, only caution money will be refunded and that too only at the end of the semester.

### 6.4. Withdrawal from the Institute

If a student is continuously absent from the Institute for more than four weeks without informing the HOD, Dean (Academics) his/her name will be removed from the Institute rolls.

A student wishing to leave the Institute on his/her own should submit an application duly countersigned by his/her father/guardian. He/she shall also obtain “No Dues Certificate” from the Department, the Deputy librarian, the Warden, the Officer Commanding, NCC, and the Accounts Section, and submit to the Academics Section for settling his/her accounts in the Accounts Section. The student shall remain liable to pay all dues till the date on which his/her name is formally struck off the Institute rolls.

A Post Graduate Student wishing to withdraw from the programme should submit his/her request to the Head of the Deptt./School on the prescribed form, who will forward the same to Associate Dean (Research) with his/her recommendations.

## 6.5. Transcripts, Degree and other Certificates

Additional transcripts, duplicate degrees/diplomas, etc can be obtained on payment of the following charges:

a)	Degree, in person		: Rs. 1000
b)	Degree, in absentia	(In India)	: Rs. 1000
		(In Abroad)	: Rs. 1500
		Or	:US\$ 150
c)	Migration Certificate (Only one original)		: Rs. 500
d)	Duplicate Degree/certificate (Only one Original)	(In India)	: Rs. 2500
		(In Abroad)	: US\$ 250
e)	Transcripts (1 Original + 4 Attested Copies)	(In India)	: Rs. 500
		(In Abroad)	: US\$ 50
f)	Duplicate Identity Card		: Rs. 500
g)	Certificate of medium of instruction in English (Only one original)	(In India)	: Rs. 100
		(In Abroad)	: US\$ 10
h)	Verification of degree certificate, JEE Rank, membership of Institute bodies, etc. (for each individual verification)	(In India)	: Rs. 1000
		(In Abroad)	: US\$ 100
i)	Character Certificate (only one original)	(In India)	:Rs. 100
		(In Abroad)	:US\$ 10



## 6.6 Details of Semester Fees for the Academic Year 2017-18.

	ITEM Programme ↓	Student's →	M.Tech/ MS-R/MS (Gen)	M.Tech/ MS-R/MS (SC/ST)	M.Sc (Gen)	M.Sc (SC/ST)	PhD
1.	<b>SEMESTER FEES (To be paid every semester)</b>		(INR)	(INR)	(INR)	(INR)	(INR)
1.1	<b>INSTITUTE FEES</b>						
	i) Tuition Fee		6785	1785	4235	1735	2500
	ii) Examination Fee		350	350	350	350	300
	iii) Registration/Enrolment Fee		250	250	250	250	250
	iv) Gymkhana Fee		500	500	500	500	500
	v) Medical Fee		50	50	50	50	50
	vi) Laboratory & other facilities		1500	1500	1500	1500	1500
	vii) Library		500	500	500	500	500
	viii) Hostel & Mess Establishment, Amenities charges		1000	1000	1000	1000	1000
	ix) Transfer charges (Campus Bus Services)		0	0	0	0	0
1.2	<b>HOSTEL FEES +</b>						
	i) Hostel Seat Rent		3000	3000	3000	3000	1000
	ii) Fan, Electricity and water charges		2300	2300	2300	2300	1000
	<b>TOTAL (Semester Fees to be paid)</b>		<b>16235</b>	<b>11235</b>	<b>13685</b>	<b>11185</b>	<b>8600</b>
2.	<b>ONE TIME PAYMENTS (Non -refundable) To be paid at the time of admission</b>						
	i) Admission Fees		200	200	200	200	150
	ii) Thesis Fees		0	0	0	0	950
	iii) Grade card		200	200	200	200	0
	iv) Provisional certificate		200	200	200	200	100
	v) Student welfare fund		300	300	300	300	200
	vi) Modernization fees		400	400	400	400	500
	vii) Identity card		100	100	100	100	100
	viii) Benevolent fund		100	100	100	100	100
	ix) Alumni fees		1000	1000	1000	1000	1000
	x) Training & Placement		500	500	500	500	0
	<b>Total (one time payment at the time of admission)</b>		<b>3000</b>	<b>3000</b>	<b>3000</b>	<b>3000</b>	<b>3100</b>
3	<b>Deposits (Refundable)</b>						
	i) Institute security deposit		2000	2000	2000	2000	1000
	ii) Library security deposit		2000	2000	2000	2000	1000
4	<b>OTHER PAYMENTS</b>		500	500	500	500	500
	Insurance Scheme (To be paid every year in 1 <sup>st</sup> semester)						
	<b>GRAND TOTAL</b>		<b>23735</b>	<b>18735</b>	<b>21185</b>	<b>18685</b>	<b>14200</b>

The fee payable at IIT Ropar is subject to change as per the Institute rules.

Note: Mess charges will be notified separately.

Tuition Fees for Foreign Nationals:

For SAARC Countries- US\$ 2000

For Other Countries- US\$ 4000

All other fees is the same as that of the regular students



## 7. Discipline

1. Every student is required to observe disciplined and decorous behaviour both inside and outside the campus and should not indulge in any activity, which will tend to bring down the prestige of the Institute.
2. Students are expected to dress and to conduct themselves in a proper manner.
3. All forms of ragging are prohibited. If any incident of ragging comes to the notice of the authorities, the student concerned shall be given the opportunity to explain. If the explanation is not found to be satisfactory, the authorities can expel him/her from the Institute.
4. The students are expected to conduct themselves in a manner that provides a safe working environment for women. Sexual harassment of any kind is unacceptable and will attract appropriate disciplinary action.
5. Any act of indiscipline of a student reported to the Dean will be referred to a Disciplinary Committee nominated by the Senate from time to time.
6. The committee will investigate the charges and will recommend suitable punishment if it finds the charges substantiated.
7. The recommendation of the Committee will be considered by the Dean to take appropriate action.
8. The Dean will report the action taken at the next meeting of the Senate.
9. Appeal: The scholar may go in for appeal to the Chairperson of the Senate whose decision will be final.
10. The following graded punishments will be imposed on those who indulge in Academic Mal-practices - unfair means during Quizzes/Mid-semester/End-semester examinations:

### (a) For rude behaviour :

- (i) Severe warning shall be issued to a student who is found to display rude behaviour towards fellow students /invigilators.
- (ii) The student is liable to be expelled from the examination hall.
- (iii) In such cases, the parents of that student would be informed of such indiscipline.

### (b) Malpractices and corresponding Punishments:

S.No.	Nature of Malpractice	Recommended Punishment
1	Communicating with neighbours in the examination hall	The erring student(s) shall be awarded 'F' grade in the subject concerned
2.	Possessing incriminating* materials inside the examination hall (or) Possessing the answer book of another candidate (or) Passing on answer book to another student (or) Exchange of question papers, with some answers noted down on them (or) Individual referral of material/discussion with other students, during visit outside the examination hall	The Disciplinary Committee shall have the discretion to recommend one of the following punishments: (a) The erring students(s) shall be awarded 'F' grade in the subject concerned. (or) (b) The erring student(s) shall be awarded 'F' grade in the subject concerned and one grade less in all the other subjects in the concerned semester. (or) (c) The concerned student(s) shall be awarded 'F' grade in all the subjects in the concerned semester.
3.	Involved in malpractice in the examination for the second time, in a premeditated manner.	The concerned student i) shall be awarded 'F' grade in all subjects, in the concerned semester and ii) shall be debarred from attending classes and taking examinations in the subsequent semester.
4.	Impersonation in the examination	The concerned student i) shall be awarded 'F' grade in all subjects, in the concerned semester and ii) shall be debarred from attending classes and taking examinations in the next two subsequent semesters.

(\* incriminating materials include written/printed material; unauthorized additional sheets without or with write-ups, bits, scribbles on scales / handkerchief / on the body; abuse of calculator / organizer / cell phone, etc.)

## 8. Academic Integrity

Cases of ethical lapses emanating from institutions of scientific research are increasingly being reported in the news. In this context, we need to create awareness and come up with a set of clear guidelines to maintain academic integrity. A flourishing academic environment entails individual and community responsibility for doing so. The three broad categories of improper academic behavior that will be considered are: I) plagiarism, II) cheating and III) conflict of interest.

1. Cases of ethical plagiarism are the use of material, ideas, figures, code or data without appropriate acknowledgment or permission (in some cases) of the original source. This may involve submission of material, verbatim or paraphrased, that is authored by another person or published earlier by oneself. Examples of plagiarism include:
  - (a) Reproducing, in whole or part, text/sentences from a report, book, thesis, publication or internet.
  - (b) Reproducing one's own previously published data, illustrations, figures, images, or someone else's data, etc.
  - (c) Taking material from class-notes or downloading material from internet sites, and incorporating it in one's class reports, presentations, manuscripts or thesis without citing the original source.
  - (d) Self-plagiarism, which constitutes copying verbatim from one's own earlier published work in a journal or conference proceedings without appropriate citations.The resources given in Subsection (8) explain how to carry out proper referencing, as well as examples of plagiarism and how to avoid it.
2. Cheating is another form of unacceptable academic behavior and may be classified into different categories:
  - (a) Copying during exams, and copying of homework assignments, term papers or manuscripts.
  - (b) Allowing or facilitating copying, or writing a report or exam for someone else.
  - (c) Using unauthorized material, copying, collaborating when not authorized, and purchasing or borrowing papers or material from various sources.
  - (d) Fabricating (making up) or falsifying (manipulating) data and reporting them in thesis and publications.
3. Some guidelines for academic conduct are provided below to guard against negligence as well as deliberate dishonesty:
  - (a) Use proper methodology for experiments and computational work. Accurately describe and compile data.
  - (b) Carefully record and save primary and secondary data such as original pictures, instrument data readouts, laboratory notebooks, and computer folders. There should be minimal digital manipulation of images/photos; the original version should be saved for later scrutiny, if re-required, and the changes made should be clearly described.
  - (c) Ensure robust reproducibility and statistical analysis of experiments and simulations. It is important to be truthful about the data and not to omit some data points to make an impressive figure (commonly known as "cherry picking").
  - (d) Lab notebooks must be well maintained in bound notebooks with printed page numbers to enable checking later during publications or patent. Date should be indicated on each page.
  - (e) Write clearly in your own words. It is necessary to resist the temptation to "copy and paste" from the Internet or other sources for class assignments, manuscripts and thesis.
  - (f) Give due credit to previous reports, methods, computer programs etc. with appropriate citations. Material taken from your own published work should also be cited; as mentioned above, it will be considered self-plagiarism otherwise.
4. At Conflict of Interest: A clash of personal or private interests with professional activities can lead to a potential conflict of interest, in diverse activities such as teaching, research, publication, work on committees, research funding and consultancy. It is necessary to protect actual professional independence,

objectivity and commitment, and also to avoid an appearance of any impropriety arising from conflicts of interest. Conflict of interest is not restricted to personal financial gain; it extends to a large gamut of professional academic activities including peer reviewing, serving on various committees, which may, for example, oversee funding or give recognition, as well as influencing public policy. To promote transparency and enhance credibility, potential conflicts of interests must be disclosed in writing to appropriate authorities, so that a considered decision can be made on a case-by-case basis. Some additional information is available in the section below dealing with resources.

5. **Individual and Collective Responsibility:** The responsibility varies with the role one plays.
  - (a) Student roles: Before submitting a thesis to the department, the student is responsible for checking the thesis for plagiarism using software that is available on the web. In addition, the student should certify that they are aware of the academic guidelines of the institute, have checked their document for plagiarism, and that the thesis is original work. A web-check does not necessarily rule out plagiarism.
  - (b) Faculty roles: Faculty should ensure that proper methods are followed for experiments, computations and theoretical developments, and that data are properly recorded and saved for future reference. In addition, they should review manuscripts and theses carefully. Apart from the student certification regarding a web-check for plagiarism for theses, the Institute will provide some commercial software at SERC for plagiarism checking. Faculty members are encouraged to use this facility for checking reports, theses and manuscripts. Faculty members are also responsible for ensuring personal compliance with the above broad issues relating to academic integrity.
  - (c) Institutional roles: A breach of academic integrity is a serious offence with long lasting consequences for both the individual and the institute, and this can lead to various sections. In the case of a student, the first violation of academic breach will lead to a warning and/or an “F” course grade. A repeat offence, if deemed sufficiently serious, could lead to expulsion. It is recommended that faculty members bring any academic violations to the notice of the Department Chairman. Upon receipt of reports of scientific misconduct, the Director may appoint a committee to investigate the matter and suggest appropriate measures on a case to case basis.
6. **Intellectual Property Rights:** The Indian Institute of Technology Ropar will own the Intellectual Property (IP) made or created by any student carrying out research under the supervision of any employee of the Institute, or the IP developed individually by the student in the course of his/her studies at IIT Ropar, or with any use of IIT Ropar facilities. By accepting admission to IIT Ropar, a student agrees to assign to the IIT Ropar all such IP made or created at IIT Ropar, including inventions and copyrightable material; and to execute all papers required to assign, apply for, obtain, maintain, issue and enforce IP and IP rights.

## References:

National Academy of Sciences article “On being a scientist,”  
[http://www.nap.edu/openbook.php?record\\_id=4917&page=RI](http://www.nap.edu/openbook.php?record_id=4917&page=RI)  
<http://www.admin.cam.ac.uk/univ/plagiarism/>  
<http://www.aresearchguide.com/6plagiar.html>  
<https://www.indiana.edu/~tedfrick/plagiarism>  
<http://www.files.chem.vt.edu/chem-ed/ethics/index.html>  
[http://www.ncusd203.org/central/html/where/plagiarism\\_stoppers.html](http://www.ncusd203.org/central/html/where/plagiarism_stoppers.html)  
<http://sja.ucdavis.edu/files/plagiarism.pdf>  
<http://web.mit.edu/academicintegrity/>  
<http://www.northwestern.edu/provost/students/integrity/>  
<http://www.ais.up.ac.za/plagiarism/websources.htm#info>  
<http://ori.dhhs.gov/>  
<http://www.scientificvalues.org/ceses.html>

## 9. Scholarships and Fellowships

### 9.1. Scholarship for PhD Scholars

Period of Assistantship	Qualifying Degree	Fellowship Amount	Hours/week Teaching Assistance
First 2 years of registration (JRF)	Post Graduate Degree in Basic Science with NET/GATE Qualification or Graduate degree in Professional Course with NET /GATE Qualification or Graduate degree in Professional Course	Rs. 25000/-p.m + 10% HRA if applicable	8 hrs/week
After 2 years of registration(SRF)	JRF Qualification with two years of Research experience	Rs. 28000/-p.m + 10% HRA if applicable	8 hrs/week

**Duration :** The fellowship will get expire at the end of 5 years.

### 9.2. Scholarship for M.Tech./MS-Research Scholars

Qualifying Degree	Fellowship Amount	Hours/week Teaching Assistance
B.E./B.Tech./BS/B.Des and GATE/GPAT qualified	Rs. 12,400/-p.m (Both 1 <sup>st</sup> and 2 <sup>nd</sup> year and 5 <sup>th</sup> year of Dual Degree Programmes.	8 hrs/week

The above is subject to change as per MHRD guidelines

- The maximum duration for which Assistantship can be awarded to M.Tech/ MS(R ) students is 4 semesters.
- Only full-time non-sponsored students who have qualified GATE are eligible for assistantship.
- In the first instance, the assistantship is awarded only for one semester. Thereafter continuation of the assistantship during each semester is contingent upon satisfactory academic performance and satisfactory performance in the discharge of responsibilities assigned under the assistantship scheme. For this purpose an SGPA of not less than 5.00 at the end of the semester is treated as satisfactory academic performance.
- Candidates qualified for CSIR JRF will not be allowed to avail fellowship for doing M.Tech / M.S- (R) programmes. However, they can avail the CSIR fellowship for doing the Ph.D programme.

### 9.3 Merit-cum-Means scholarship to M.Sc. students

The M.Sc. students are eligible for Merit-cum-Means scholarship (MCM) in the form of tuition fee waiver and monthly pocket allowance on the following terms and conditions.

The students are exempted from paying tuition fee and will further receive a pocket allowance of Rs. 1000/- per month at par with B.Tech. students.

M.Sc. students will be eligible to receive MCM in the first semester based on All India Rank in JAM. The scholarship will be renewed/continued on semester to semester basis until he/she clears all academic requirements of the programme, provided that he/she continues to satisfy the eligibility and continuation criteria. This is continuation of MCM, the performance of the student will be reviewed at the end of each semester.

### Criteria for Continuation.

1. CGPA must be 6.0 or more; and
2. Earned credit requirement. (Each department will notify the no. of credits required to be registered by the students and number of credits to be passed)
3. SGPA in the previous semester must be 6.0 or more.

Only those students are eligible whose parents have a gross yearly income upto Rs. 4.5 lac per annum or as notified by govt. of India from time to time.

## 9.4. Director's Fellowship

### 9.4.1. Eligibility

Research scholars who have already submitted their thesis from IIT Ropar and who would like to continue research for some more time to conclude some unfinished work.

### 9.4.2. Application Processing

- a) The applicant may apply during submission of synopsis not exceeding 5 years of doctoral research.
- b) The applicant may apply during submission of synopsis.
- c) Application should be addressed to Dean (Research) through PhD supervisor and HoD.
- d) The application should be accompanied with a recommendation from the supervisor.

### 9.4.3. Selection

Selection will be done based on the recommendation of the DC.

### 9.4.4. Duration and joining

- a) The duration of the fellowship will be maximum for a period of 6 months.
- b) After joining as a pre-doctoral fellow, the student has to give a joining report.

### 9.4.5. Benefits

The pre-doctoral fellows are eligible for the following benefits.

• Fellowship Amount	Rs. 40,000/ - (consolidated) before defense of thesis and Rs. 45,000(consolidated) thereafter.
• Accommodation	Suitable Hostel/Campus accommodation as per IIT norms will be provided if requested and if available
• Medical benefits/Insurance	As applicable to PhD Scholars
• Permission for Conference	Can use funds left from the PhD period
• Leave	As applicable to PhD Scholars (on pro rata basis)
• Contingency	Can be given on a pro rata basis.
• Certificate	The candidate will receive a certificate of appreciation for this fellowship from IIT Ropar.

### 9.4.6. Termination

If the student wishes to leave the programme before the end of the tenure, he/she can do so with prior approval of Dean (Research) giving one month's notice. The fellowship may be terminated by the Institute if the performance / conduct of the student is unsatisfactory after giving one month's notice to the student.

## **9.5. Institute Post Doctoral Fellowship**

### **9.5.1. Eligibility**

PhD degree holders are eligible to apply within five years after completion of PhD. Candidates completing PhD from IIT Ropar can apply after 3 years of completion of their PhD.

### **9.5.2. Application processing and interview**

- a. Applications will be invited twice a year.
- b. The application received by the respective departments will be shortlisted and the candidates to be called for interview.
- c. Interview call letter will be sent to the shortlisted candidates along with proforma for TA claim and No Objection certificate, if employed by the Academic section.
- d. Candidates called for interview are eligible for reimbursement for Train Fare (II AC) to and fro by shortest route.
- e. The Department have to send the list of shortlisted candidates along with the short listing criterion followed to the PSC.
- f. It is informed that the selected candidates who had obtained their PhD from IIT Ropar, the Collaborator faculty member will be other than the candidate's PhD Thesis Supervisor.

### **9.5.3. Selection and offer**

- a. The short listing criterion will be left to the respective departments to decide.
- b. At least 2 letters of recommendation (1 preferably from PhD Thesis supervisor) should be obtained.

### **9.5.4. Duration and joining**

- a. The duration of the fellowship will be for a period of 3 years. Renewal needs to be done each year based on the progress of the PDF and the recommendation of the Department.
- b. After joining as Institute PDF, the PDF has to give joining report.

### **9.5.5. Progress report**

- a. The candidate should present a yearly progress report to PPAC detailing the research work carried out and research findings supported by reprints/preprints/manuscripts of the papers published/accepted for publication or communicated/research reports for this purpose.
- b. The progress report has to be duly endorsed by the HOD in consultation with the dept.

### **9.5.6. Assignment**

- a. Apart from the research pursued by the post-doctoral fellow services of post-doctoral fellow may be engaged by the department up to 8 hours per week for academics assistance in the departmental work including teaching, handling of tutorials and laboratory work.
- b. Apart from quality research work, post-docs will also be encouraged to write funding proposals. They will not be engaged in teaching in general, unless the scholar himself/herself wishes so.
- c. The post docs will be attached to the mentor only for administrative purpose. He/she will work 'with' the mentor rather than 'under' the mentor. He/she will have independence to change the course of research.
- d. Post docs will be eligible to serve as co-guide for B.Tech./M.Sc. and M.Tech. projects along with at least 1 faculty member from the concerned dept.

### **9.5.7. Benefits**

- a. The PDFs are eligible for the following benefits:



• Fellowship Amount	Between Rs. 45,000-55,000/- consolidated (depending upon experience and qualification)
• Accommodation	Suitable Hostel/Campus accommodation as per IIT norms will be provided if requested and if available
• Contingency Grant	A contingency grant of Rs. 1,00,000/- per annum will be provided to the Post-doctoral fellow for research purpose. Unspent amount can be carried over to the next financial year
• Medical benefits/Insurance	As applicable to PhD Scholars
• Permission for Conference	Either national or international conference can be permitted provided funds available in the contingency grant of the concerned doctoral fellow.
• TA claim for attending interview	Train fare by II AC from place of residence to IIT Roar (by shortest route).
• Leave	With fellowship not exceeding 30 days in a year for each completed year of the fellowship. The leave can be availed on a prorata basis for the duration (on a 6 month's basis ) of the fellowship completed.

### 9.5.8. Termination

If the Post-Doctoral Fellow wishes to leave the programme before the end of the tenure, he/she can do so with prior approval of the PPAC giving one month's notice. The fellowship may be terminated by the Institute if the performance / conduct of the fellow is unsatisfactory after giving one month's notice to the Post-Doctoral Fellow.

## 10. Library Facilities

The Central Library functions as the primary information resource centre and repository of printed and electronic resources for teaching and research activities at the institute. Apart from textbooks and recommended reading materials prescribed for each course offered at the institute, the library houses a growing collection of research monographs, reports, multi-volume reference works, dictionaries, encyclopaedias, handbooks, and so on. In addition, the library also facilitates access to a number of journals through its participation in consortia, such as E-Shodh Sindhu. At present, users can consult more than 13, 000 books (available on shelves) and thousands of electronic journals. Online access is also provided to bibliometric and scientometric databases such as Web of Science, Scopus and MathSciNet.

The library operations are automated using LIBSYS software. The Online Public Access Catalogue (OPAC) enables users to search documents in the possession of the library. Recently library has introduced the Radio Frequency Identification Technology (RFID) which is the state-of-the-art auto identification technology helps in self servicing and enhanced security. A separate e-resources section is provided in the library to browse CDs and DVDs of books; theses and dissertations. Library has developed institutional digital repository (IDR) to archive and provide online access to intellectual output of the institute. These steps will greatly enhance the library's efficiency in making the resources available to the academic community at large and also enable the institute participate in various inter-library initiatives at national and international levels.

## 11. Medical Facilities

The institute has a Medical Centre adjacent to the hostel complex. A doctor (Homeopathic & Allopathic), Pharmacist & Staff nurse have been appointed to attend to medical emergencies of the campus residents. In addition, the institute relies on a few super-specialty hospitals in the city of Ropar and Chandigarh for providing medical care to its members.

## 12. Hostels and Dining Facilities

The Institute campus houses four hostels with the latest and modern facilities: Jupiter, Mercury (Wing A &

Wing B), Neptune Hostels for boys and Venus Hostel for girls. The hostels are well equipped for comfortable board and lodging of approximately 600 students. All hostels are provided with water coolers with RO systems. Facilities for indoor recreation and games are also available.

The hostel complex also includes four shops that caters to the basic needs of the residents; washing machine facilities are also available for the students in the hostels.

The Institute houses two Messes adjacent to the old and new hostel. Breakfast, lunch, tea / snacks and dinner are served to the students. The Mess Committee looks after the day to day administration.

### **13. Student Activities**

The Institute has a Society for Publication and Communication Skills Development. In addition, there are Music, Dance, Dramatics and Literary Societies where the students can participate and develop a well-rounded personality.

### **14. Recreational Facilities**

At present, the transit campus has excellent facilities for several sports, including a cricket field, three lawn tennis courts, a football field, a hockey field, a gymnasium, a basket ball court, badminton courts, an athletics track, table tennis room and also facilities for several athletic events. The institute encourages its students to participate in inter-IIT sport events and other competitions. Space for recreational and creative activities is also available.

### **15. General Facilities**

The Institute has a branch of SBI as well as a Post office to cater to the needs of the faculty members, staff and students.

### **16. Academic Calendar for the 1st Semester of Academic Year 2017 – 18**

Please visit - [www.iitrpr.ac.in/academic-calendar-0](http://www.iitrpr.ac.in/academic-calendar-0)



## ANNEXURE

### Regulations for preparation of PhD Thesis

1. Thesis should be type-written on both sides of good quarto-size/A-4 size paper in 1.5 space with sufficient margins (left margin 1.5", right margin 0.75") in Times Roman (12 font size) with multi-plastic ring binding.
2. Suitable reproduction of Indian-Ink diagrams should be used. Photographs should be suitably mounted on the same quality paper as the thesis.
3. Reference should be given in a style in the text consistent with a standard journal in the field.
4. Three copies of thesis in multi-plastic spiral binding in Dark Orange color cover and three soft copies (CDs/DVDs) must be submitted for evaluation. In case of student being supervised by more than one supervisor, appropriate number of additional copies must be submitted.
5. The cover should have the following printed on it in block letters:  
(a) The title at the top (b) author's name in the middle (c) Name of Department/Centre and Indian Institute of Technology Ropar at the bottom.
6. After the Viva-Voce Examination, two copies of thesis in hard maroon-color cover must be submitted. The cover should have the material indicated in item 5 above. Besides, the following should be printed on the spine of the thesis:  
(a) The year of publication at the top (b) the author's last name in the middle and (c) Ph.D. at the bottom.
7. The contents of thesis should have the following format:  
(i) The hard bound copies of the thesis must contain the following copy right notice in the beginning of the thesis (left side of the inner cover page):--  
©Indian Institute of Technology Ropar- 20.....  
All rights reserved.  
(ii) Inner cover page (iii) certificate of the Supervisor(s) (iv) Acknowledgements (v) Abstract  
(vi) Table of contents (vii) List of figures (viii) Body of the thesis (ix) References  
(x) Appendices and (xi) Brief Bio data of the author.
8. The inner cover page should read as follows:

### TITLE OF THESIS

By

(NAME OF AUTHOR)

.....Department/School

Submitted

In fulfillment of the requirements of the degree of Doctor of Philosophy  
to the



**Indian Institute of Technology Ropar**  
**Month & Year**

## CONTACT INFORMATION

**Director****Prof. Sarit K. Das**

Tel. +91-1881-223391, 242101

Email: [director@iitrpr.ac.in](mailto:director@iitrpr.ac.in)

**Dean**

(Academics)

**Prof. P. K. Raina**

Tel. +91-1881-227083, 242114

Email: [deanar@iitrpr.ac.in](mailto:deanar@iitrpr.ac.in)

**Dean**

(Industrial Consultancy  
& Sponsored Research)

**Prof. Sanjoy Roy**

Tel. +91-1881-242174

Email: [deanspc@iitrpr.ac.in](mailto:deanspc@iitrpr.ac.in)

**Dean**

(Faculty Affairs  
& Administration)

**Prof. Ramesh Garg**

Tel. +91-1881-242296

Email: [deanfaa@iitrpr.ac.in](mailto:deanfaa@iitrpr.ac.in)

**Associate Dean**

(Academics-UG)

**Dr. Himanshu Tyagi**

Tel. +91-1881-242119

Email: [deanug@iitrpr.ac.in](mailto:deanug@iitrpr.ac.in)

**Associate Dean**

(Academics-PG)

**Dr. T. J. Dhillip Kumar**

Tel. +91-1881-242115

Email: [deanpg@iitrpr.ac.in](mailto:deanpg@iitrpr.ac.in)

**Associate Dean**

(Research)

**Dr. S. Sarkar**

Tel. +91-1881-242311

Email: [deanresearch@iitrpr.ac.in](mailto:deanresearch@iitrpr.ac.in)

**Associate Dean**

(Student Affairs)

**Dr. Prabal Banerjee**

Tel. +91-1881-242112

Email: [deansa@iitrpr.ac.in](mailto:deansa@iitrpr.ac.in)

**Associate Dean**

(Industrial Relations,  
International & Alumni Affairs)

**Dr. Harpreet Singh**

Tel. +91-1881-242177

Email: [deanir@iitrpr.ac.in](mailto:deanir@iitrpr.ac.in)

**Associate Dean**

(Infrastructure)

**Dr. Balwinder Singh Sodhi**

Tel. +91-1881-242169

Email: [deancd@iitrpr.ac.in](mailto:deancd@iitrpr.ac.in)

**Associate Dean**

(Continuing Education & Outreach Activities)

**Dr. Asoka Biswas**

Tel. +91-1881-242141

Email: [abiswas@iitrpr.ac.in](mailto:abiswas@iitrpr.ac.in)

**Registrar****Sh. Sanjay Bhatnagar**

Tel. +91-1881-242105

Email: [registrar@iitrpr.ac.in](mailto:registrar@iitrpr.ac.in)

Website : [www.iitrpr.ac.in](http://www.iitrpr.ac.in)



# IIT ROPAR

# IIT



## भारतीय प्रौद्योगिकी संस्थान रोपड़ INDIAN INSTITUTE OF TECHNOLOGY ROPAR

रुपनगर, पंजाब - 140001 (भारत), Rupnagar, Punjab - 140001 (INDIA)

दूरभाष/Tele : 01881-242105, फैक्स/Fax : 01881-223395, ईमेल/E-mail : [info@iitrpr.ac.in](mailto:info@iitrpr.ac.in), वेब/Web : [www.iitrpr.ac.in](http://www.iitrpr.ac.in)

# IIT