

# KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506 015, Telangana, INDIA.

కాకతీయ ప్రేయోగికీ ంవ విజ్ఞాన సంస్థాన, వరంగల - 506 095 తెలంగాణ, భారత  
కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - 506 015 తెలంగాణ, భారతదేశము

(An Autonomous Institute under Kakatiya University, Warangal)

(Approved by AICTE, New Delhi; Recognised by UGC under 2(f) & 12(B); Sponsored by EKASILA EDUCATION SOCIETY)

## B.TECH. CURRICULUM

ACADEMIC YEAR: 2024-25

### UNDERGRADUATE RULES AND REGULATIONS-2024 (URR24)

In accordance with the National Education Policy 2020  
w.e.f AY 2024-25

Regulations Governing the  
Choice Based Credit System and  
Multiple Entry and Multiple Exit Options  
with  
Competency-Focused Outcome Based Curriculum (CF-OBC)



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE, WARANGAL - 506 015 TELANGANA

(UGC Autonomous Institute Under Kakatiya University, Warangal)

**GENERAL RULES AND REGULATIONS FOR UNDERGRADUATE  
PROGRAMME  
B.TECH 4-YEAR DEGREE PROGRAMME (URR-24)  
COMPETENCY FOCUSED OUTCOME BASED CURRICULUM (CF-OBC) WITH  
CHOICE BASED CREDIT SYSTEM (CBCS)  
(Applicable from the academic year 2024-25)**

**1. INTRODUCTION**

- 1.1 Kakatiya Institute of Technology & Science, Warangal (KITSW) is a UGC autonomous institute under Kakatiya University (KU) Warangal. The institute offers 4 year (8 semesters) Bachelor of Technology (B.Tech) degree programme, under Choice Based Credit System (CBCS) with effect from the academic year 2024-25.
- 1.2 The provisions contained in these regulations given the conditions for imparting course of instructions, conducting examinations and evaluation of students' performance leading to B.Tech. 4-year degree programme to be offered by the Kakatiya Institute of Technology & Science, Warangal and awarded by Kakatiya University, Warangal.
- 1.3 These regulations shall be called the *Kakatiya Institute of Technology & Science, Warangal (KITSW) regulations for the award of B.Tech 4-year degree programme by Kakatiya University, Warangal.*
- 1.4 They shall come into effect from the date of getting approval from the Academic Council of the Kakatiya Institute of Technology & Science, Warangal
- 1.5 They shall be applicable for all students enrolling for B.Tech 4-year degree programme at the Kakatiya Institute of Technology & Science, Warangal from the academic year 2024-25.

**2. DEFINITIONS**

- 2.1 *"B.Tech."* means Bachelor of Technology, an Undergraduate Degree awarded from the Kakatiya University, Warangal
- 2.2 *"University"* means Kakatiya University, Warangal
- 2.3 *"Institute"* means Kakatiya Institute of Technology & Science, Warangal
- 2.4 *"UGC"* means University Grants Commission, New Delhi
- 2.5 *"AICTE"* means All India Council for Technical Education, New Delhi

- 2.6 **"MHRD"** means Ministry of Human Resource & Development, Govt. of India, New Delhi
- 2.7 **"TGCHE"** means Telangana Council for Higher Education, Govt. of Telangana, Hyderabad
- 2.8 **"GB"** means Governing Body of the Institute
- 2.9 **"AC"** means Administrative Committee of the Institute
- 2.10 **"FC"** means Finance Committee of the Institute
- 2.11 **"Academic Council"** means Academic Council of the Institute
- 2.12 **"AAC"** means Academic Advisory Committee of the Institute
- 2.13 **"Principal"** means Principal of the Institute
- 2.14 **"Dean"** means Dean of specific affairs of the Institute
- 2.15 **"HoD"** means Head of the Department of specific programme offered by the Institute
- 2.16 **"BoS"** means Board of Studies in the engineering of a specific programme offered by the Institute
- 2.17 **"CoE"** means Controller of Examinations of the Institute.

### **3. UNDERGRADUATE PROGRAMMES**

3.1 The Institute shall offer the following Undergraduate Programmes under CBCS:

1. B.Tech Civil Engineering (CE)
2. B.Tech Mechanical Engineering (ME)
3. B.Tech Electrical & Electronics Engineering (EEE)
4. B.Tech Computer Science & Engineering (CSE)
5. B.Tech Information Technology (IT)
6. B.Tech Electronics & Communication Engineering (ECE)
7. B.Tech Computer Science & Engineering (Networks) (CSN)
8. B.Tech Electronics Communication & Instrumentation Engineering (ECI)
9. B.Tech Computer Science & Engineering (Artificial Intelligence & Machine Learning)
10. B.Tech Computer Science & Engineering (IoT)
11. B.Tech Computer Science & Engineering (DS)

3.2 The provisions of these regulations shall also be applicable to any new

undergraduate programmes that are introduced from time to time with approval from appropriate bodies such as MHRD / AICTE / UGC, etc.

#### 4. ADMISSION

- 4.1 a) Candidates seeking admission to 1<sup>st</sup> year of the Four Year B.Tech. degree programme shall have passed the Intermediate Examination of the Board of Intermediate Education, Telangana with Mathematics and Physical Sciences (Physics and Chemistry) as optional subjects or any other examination recognized by the University as equivalent to it.
- b) **Lateral Entry:** Candidates seeking admission directly into 2<sup>nd</sup> year of 4-year B.Tech. degree programme as “**Lateral Entry**” student shall have passed 3 year full time Diploma (after 10<sup>th</sup> Std) offered by State Board of Technical Education and Training, Telangana or any other examination recognized by the University as its equivalent.
- 4.2 The admissions shall be made in accordance with the guidelines issued by TGCHE.

#### 5. ACADEMIC SESSION

- 5.1 Each academic session is divided into two semesters (odd and even), each of 16 weeks.
- a) **Odd Semester:** From June/July to October/November of academic year. However, the academic session of the first semester will be decided based on the counseling schedule declared by the TGCHE.
- b) **Even Semester:** From November/December to March/April of academic year.
- 5.2 The Institute shall announce the academic Calander (Almanac) for all the academic activities well before the commencement of the academic year and take all the necessary steps to follow them scrupulously.
- 5.3 The academic activities in a semester normally include registration, course work, Continuous Internal Evaluation (CIE), End Semester Examination (ESE) and declaration of results.

#### 6. REGISTRATION

- 6.1 All the students are required to register in person at the beginning of each academic year on the dates specified in the academic calendar (almanac).
- 6.2 The sole responsibility for registration rests with the student concerned.

- 6.3 Registration of students will be centrally organized by the Academic section.
- 6.4 The Registration procedure involves:
- a) Filling of the prescribed registration form
  - b) Payment of fees and clearance of outstanding dues (if any)
  - c) Signing undertakings (undertaking for regular attendance, discipline and against ragging) along with the parents
- 6.5 If for any compelling reasons like illness, etc., a student is unable to register on the announced day of registration, he/she can register within 12 working days from the beginning of the academic year on payment of an additional late fee as prescribed by the Institute.
- 6.6 **No late registration shall be permitted after 12<sup>th</sup> working day** from the scheduled date of commencement of class work for that academic year.
- 6.7 Only those students will be permitted to register who have
- a) cleared all institute and hostel dues of previous semesters
  - b) paid all required prescribed fees for the current academic year
  - c) not been debarred / detained from registering for a specified period on disciplinary or any other grounds
  - d) cleared the minimum academic requirement as detailed in Regulation No. 15

## 7. CURRICULUM

- 7.1 The URR24 regulations are in line with the National Education Policy 2020 (NEP2020) and the AICTE model curriculum to provide multidisciplinary holistic education to produce well-rounded engineering graduates. These regulations offer the Choice Based Credit System and Multiple Entry and Multiple Exit Options with Competency-Focused Outcome Based Curriculum (CF-OBC).
- 7.2
- a) The duration of the programme leading to B.Tech degree will be 8 semesters (4 academic years)
  - b) However, for the lateral entry students, the duration of the program leading to B.Tech degree will be 6 semesters (3 academic years)
- 7.3 The curricula for different degree programmes as proposed by the department and recommended by the BoS shall have the approval of the Academic Council.
- 7.4 As suggested by AICTE, the courses offered for UG programme are broadly

classified as:

Basic science courses (BSC), Engineering science courses (ESC), Humanities and social sciences including management courses (HSMC), Professional core courses (PCC), Professional Elective (PE) courses, Open Elective (OE) courses, Mandatory courses (MC) and Project (PROJ) based courses

7.5 The courses offered would have a *Lecture - Tutorial - Practical (L-T-P)* component to indicate contact hours. A separate laboratory (practical) course may exist (0-0-P) in certain cases as decided.

7.6 The academic programmes of the Institute follow the credit system.

7.7 Each course shall have credits(C), which reflects its weightage. The number of credits of a course in a semester shall ordinarily be calculated as below:

$$\text{Number of credits of a course, } C = L + T + (P/2)$$

where *L, T, P* represent the No. of Lecture, Tutorial and Practical hours / week

7.8 The students admitted for B.Tech. programme under Lateral Entry scheme have to be offered a mandatory course on “Environmental Studies” in the 4<sup>th</sup> semester of B.Tech. programme.

7.9 **Course Code:** Each course offered in the Undergraduate (B.Tech.) curriculum at this institute shall be listed by using a total of 8 digits, as follows:

Ex: **U24CE106**

a) The first letter, to represent the Undergraduate Programme

Ex. U for Undergraduate Course

b) The next two numbers, to represent the year in which the syllabus is proposed / revised.

Ex. 24 for the year 2024 from which syllabus is applicable for the batches admitted from academic year 2024-25

c) The next two letters represent the department concerned offering that course.

Ex. CE for Civil Engineering

d) The last three numbers, to represent the course number and semester in which it is being offered.

Ex. XYZ; X - Semester number ; YZ - Course number

106 represents course number 06 offered in the first semester

In general, a **course code “U24CE106”** represents an **Undergraduate**

**Course number 06 for the batches admitted from the year 2024 offered by the Department of Civil Engineering in first semester.**

7.10 The syllabus of each course in the B.Tech. curriculum shall be divided into four (4) units.

**8. ATTENDANCE**

8.1 All the students are normally required to have 100% attendance in aggregate. However, a condonation for shortage of attendance up to 25% may be granted by the principal based on the recommendation of HoD concerned.

8.2 The condonation for shortage of attendance up to 25% (as mentioned in Regulation No. 8.1) shall be taken up only when the student takes prior permission for his absence stating fully the genuine reasons along with supporting documents to the HoD concerned.

8.3 Hence, students who do not have the mandatory requirement of minimum 75% of attendance in aggregate shall be detained and shall not be permitted to appear for the ESE of that semester.

8.4 All such students who are detained have to repeat the entire semester when it is offered, by following the due registration procedure

8.5 Attendance of all courses shall be entered before the end of each working day by the faculty concerned through the College Management System (CMS) portal of the institute website. Students are advised to monitor the status of their attendance through this CMS portal.

**9. CONDUCT AND DISCIPLINE**

9.1 All students shall be required to conduct themselves in a manner befitting the reputation of the institution, within and outside the premises of the Institute; and are expected to complete their studies without any break.

9.2 As per the order of Hon'ble Supreme Court of India, ragging in any form is strictly banned. Involvement of a student in ragging will be considered as a gross indiscipline and may lead to his / her expulsion from the Institute.

9.3 Detailed rules regarding the conduct and discipline (code of conduct) are made available on the Institute website.

**10. EVALUATION PROCEDURE**

Refer Annexure - I, for Assessment and Evaluation procedure adopted in URR24 curriculum

**11. MINIMUM REQUIREMENT FOR PASSING A COURSE**

Refer Annexure - I, for minimum requirement to pass a course under Assessment and Evaluation procedure adopted in URR24 curriculum

## 12. GRADING SYSTEM

12.1 At the end of the semester a student is awarded a letter grade in each of his / her courses considering the total marks secured (X) in that course where, X = Marks secured in CIE + ESE.

12.2 For arriving at a grade obtained by a student in a particular course, the total marks obtained by the student in CIE+ESE for theory or lab integrated course shall be converted to a letter grade following the guidelines in Table.

12.3 The Institute shall follow an absolute grading system. The grades will be awarded to each course as below:

Grade	Total Marks Secured (X)
S	$X \geq 90\%$
A	$80\% \leq X < 90\%$
B	$70\% \leq X < 80\%$
C	$60\% \leq X < 70\%$
D	$50\% \leq X < 60\%$
P	$40\% \leq X < 50\%$
F	$X < 40\%$

12.4 The typical grades and their numerical equivalents on 10-point scale (called Grade Points) are as follows:

Performance	Letter Grade	Grade Points (G <sub>i</sub> )
Superior	S	10
Excellent	A	9
Very Good	B	8
Good	C	7
Average	D	6
Pass	P	4
Fail	F	0

12.5 **F-Grade** is a Fail Grade. The course in which the student has earned F-Grade will be termed as a backlog course.

12.6 In addition, there shall be a transitional **M-Grade**. M-Grade for "Debarred" due to indiscipline / malpractice during examination.

12.7 A Semester Grade Point Average (SGPA) will be computed for each semester. The SGPA will be calculated as follows:

$$SGPA = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i}$$



where 'n' is the no. of courses (subjects) offered (excluding mandatory non-credit courses) for the semester, 'C<sub>i</sub>' is the credits allotted to a particular course, 'G<sub>i</sub>' is the grade-points carried by the letter corresponding to the grade awarded to the student for the course as illustrated in 12.4.

- 12.8 The SGPA would indicate the performance of the student in the semester to which it refers. SGPA will be rounded off to the second place of decimal and recorded as such.
- 12.9 Starting from the second semester, at the end of each semester, a Cumulative Grade Point Average (CGPA) will be computed for every student as follows:

$$CGPA = \frac{\sum_{i=1}^m C_i G_i}{\sum_{i=1}^m C_i}$$

where 'm' is the total number of courses (subjects) the student has been offered from the first semester onwards up to and including the present semester, 'C<sub>i</sub>' and 'G<sub>i</sub>' are as explained in 12.7.

- 12.10 The CGPA would indicate the cumulative performance of the student from the first semester up to the end of the semester to which it refers. CGPA will be rounded off to the second place of decimal and recorded as such.
- 12.11 SGPA and CGPA are calculated in consideration of only credits cleared, i.e. F-Grade credits are not included for calculation.

### 13. SUPPLEMENTARY EXAMINATIONS

- 13.1 A student who obtained the F-Grade in a course (theory or practical) can appear in a subsequent End Semester Examination (ESE) in the same course as a supplementary candidate.
- 13.2 However, the marks secured in Continuous Internal Evaluation (CIE) by the student in that course during the semester study shall remain unaltered.
- 13.3 The students who have passed the supplementary examination will be awarded grade with '\*' marked on the courses passed in the supplementary.
- 13.4 **Makeup Examination for VIII semester courses:**  
Makeup Examination for the students having backlog courses at VIII semester of 4<sup>th</sup> year B.Tech. programme shall be conducted immediately

after the release of VIII semester regular examinations result.

#### **14. REVALUATION**

- a) Revaluation is allowed in theory ESE only, (for theory as well as lab integrated theory courses).
- b) If the award of the revaluator varies from the original award by less than or equal to 20% of maximum marks prescribed for the course, the original awards shall be taken as final.
- c) If the award of the revaluator varies from the original award by more than 20% of the maximum marks prescribed for the course, the answer script shall be examined by the second revaluator. If the award of both re-evaluators is more than 20% of the maximum marks prescribed for the course, then the average of the two re-evaluated awards thus available shall be taken as final. Otherwise, the original award shall be taken as final.

#### **15. CONDITIONS FOR PROMOTION**

15.1 A student shall have to satisfy the attendance requirements for the semester (as per Regulation No. 8) for promotion to the next higher semester. In addition,

- a) for promotion to the fifth semester, a student should not have more than four backlogs in the first and second semesters taken together.
- b) for promotion to the seventh semester, a student should not have more than four backlogs in the courses of first to fourth semester taken together.
- c) the grade (marks) secured in mandatory non-credit courses will not be counted for the purpose of backlogs. However, a minimum P-Grade is compulsory in those courses for the award of the degree.

#### **16. IMPROVEMENT EXAMINATION**

16.1 Students who wish to improve their SGPA / CGPA are permitted for SGPA / CGPA improvement. The student may opt to re-appear in any number of ESE theory only (of the theory/lab integrated courses) of a semester at immediately succeeding End Semester Examination (ESE) for improving grades. However, students should clear all the courses of a particular semester in which he / she intends to take an improvement examination.

16.2 Further, when the student appears for the improvement examination, he / she shall be awarded grades considering best marks of two appearances

(previous ESE and improvement ESE). However, the marks secured in Continuous Internal Evaluation (CIE) by the student in those courses during the semester study shall remain unaltered.

16.3 *Students who have re-appeared for improvement will be awarded grade with '\$' marked on the courses that appeared for improvement examination. '\$' will state the grade improvement. Such improved grades will not be counted for the award of Academic Prizes, Medals and Ranks.*

16.4 However, the students who register for improvement examinations is allowed drop from appearing the improvement examinations, by written application to the CoE (through proper channel), before commencement of examinations.

## 17. GRADUATION REQUIREMENT

17.1 A student shall be declared to be eligible for award of the B.Tech. degree, if he / she has registered and completed all the courses with a minimum P-grade scored in every course and secured a total of stipulated 160 credits.

17.2 Normally a student should complete all the requirements consecutively in 8 semesters (4 academic years) for the award of B.Tech. degree. However, the students who fail to fulfill all the requirements for the award of B.Tech. degree within a period of 16 consecutive semesters (8 academic years from the registration in 1<sup>st</sup> semester) shall forfeit his / her enrolment to the program.

17.3 The students admitted in the lateral entry scheme should complete all the requirements consecutively in 6 semesters (3 academic years) for award of B.Tech. degree. However, the students who fail to fulfill all the requirements for the award of B.Tech. degree within a period of 12 consecutive semesters (6 academic years from the registration in 3<sup>rd</sup> semester) shall forfeit his / her enrolment to the program.

17.4 a) **CGPA to Percentage conversion:** As per UGC and AICTE guidelines, the CGPA will be converted to percentage of marks as below:

$$\text{Percentage of marks} = (\text{CGPA} - 0.50) \times 10$$

Ex: If CGPA is 6.75, the equivalent Percentage of marks =  $(6.75 - 0.50) \times 10 = 62.5\%$

b) CGPA to Class conversion:

S.	Division	Eligibility Criteria
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No.		
1	First Division with Distinction	a) Student should secure $CGPA \geq 7.50$ b) Student should pass all the courses along with the batch of students admitted with him / her within 8 consecutive semesters (6 consecutive semesters for lateral entry students) c) Student who appeared for improvement examination up to 6 <sup>th</sup> semester will also be considered d) Student who has cleared any course in supplementary examination shall not be awarded Distinction
2	First Division	a) Student should secure CGPA, which is $6.50 \leq CGPA < 7.50$ within the time frame of the programme i.e. 16 semesters (12 semesters in case of lateral entry students) b) Student who has cleared any course in supplementary examination and secured $CGPA \geq 6.50$
3	Second Division	Student should secure CGPA, which is $5.50 \leq CGPA < 6.50$ within the time frame of the programme i.e. 16 semesters (12 semesters in case of lateral entry students)
4.	Pass Division	Student should secure CGPA, which is $4.50 \leq CGPA < 5.50$ within the time frame of the programme i.e. 16 semesters (12 semesters in case of lateral entry students)
5.	Fail	Student with a $CGPA < 4.50$ will not be eligible for award of degree

**17.5 Minor / Honours / Honours with Research in Engineering can be conferred as per AICTE guidelines and Model curriculum January 2024**

A student will be conferred with Undergraduate degree as “*Bachelor of Technology in XXX Engineering/Technology, with Honours / Honours with research*” (or) “*Bachelor of Technology in XXX Engineering/Technology, with Minor in YYY Engineering/Technology/specialization*”, if he/she completes an additional 18 credits. These additional 18 credits could be acquired through SWAYAM-NPTEL MOOCs / other MOOCs such as Coursera, Udemy, IITB spoken tutorials. These additional 18 credits earned through SWAYAM-NPTEL MOOCs /other MOOCs should be in addition to the credits acquired through SWAYAM - MOOCs offered in the curriculum

as part of Professional Electives/ Open Electives. The University will award degrees to the students who are evaluated and recommended by the Institute.

- 17.5.1 **Honours / Honours with Research:** Honours is an additional credential a student may earn if he/she does additional learning for 18 credits *in his/her own discipline* of B.Tech programme. These additional credits shall be acquired through MOOCs from the *list of courses for Honours*, prescribed by the respective departments. These courses shall mostly be advanced courses (or) courses designed to give more exposure to different areas of one's own discipline. In the case of *Honours with Research* a student shall earn an additional 18 credits. A student opting for Honours with Research shall undergo research internships at the institute, after 2<sup>nd</sup> and 3<sup>rd</sup> year of the programme (**5+5 = 10 credits**), shall complete Research Methodology course through MOOCs / at the institute (*4 credits*) and shall produce a Research Paper (*4 credits*). On successful accumulation of these additional credits, at the time of graduation, it shall be mentioned in the degree certificate as "*Bachelor of Technology in XXX Engineering / Technology, with Honours / Honours with Research*".
- 17.5.2 **Minor in Engineering:** A minor in engineering/specialization is an additional credential a student may earn if he/she does additional learning for 18 credits *in a discipline other than his/her major discipline* of B.Tech programme. These additional credits shall be acquired through MOOCs from the *list of courses for Minor Engineering/Minor specialization* prescribed by the respective departments. On successful accumulation of these additional credits, at the time of graduation, it shall be mentioned in the degree certificate as "*Bachelor of Technology in XXX Engineering / Technology, with Minor in YYY Engineering/Technology/specialization*".
- 17.5.3 A student shall be eligible to register for Honours / Honours with Research in the same discipline of his/her study, and/or a Minor in Engineering/specialization offered by another department.
- 17.5.4 A student can register for both Honours in the same discipline and also a Minor in Engineering in another discipline. On successful accumulation of prescribed credits for Honours and also prescribed credits for Minor in Engineering/Technology/specialization, at the time of graduation, it shall be mentioned in the degree certificate as "*Bachelor of Technology in XXX*

*Engineering / Technology, with Honours / Honours with Research and/or Minor in YYY Engineering/Technology/ specialization"*

- 17.5.5 A student who has completed B.Tech. IV semester in his/ her regular B.Tech. programme without any standing backlogs and with a minimum CGPA of 7.0 shall be allowed to register for Honours / Honours with Research and/or Minor in Engineering. In case of promising candidates, having standing backlogs, the BoS chair and Dean, AA shall take appropriate decision on allowing Honours/Honours with Research/Minor degree programmes.
- 17.5.6 Student who wants to register for Honours / Honours with Research and/or Minor in Engineering shall opt for registration at the end of the IV semester of his/ her B.Tech. programme, subject to the conditions prescribed by the AAC from time to time.
- 17.5.7 Student registered for Honours / Honours with Research and/or Minor in Engineering/specialization shall ensure the following in his/her regular B. Tech programme
- (i) student is expected to maintain a minimum SGPA of 7.0 from V semester to VIII semester of regular B. Tech programme
- 17.5.8 A student may withdraw from Honours/Honour with Research and/or Minor in Engineering/specialization at any time before graduating. Such students shall apply for withdrawal to the Dean AA, before the start of any semester. The Dean AA shall communicate the list of such students to the HoDs concerned (parent-department / minor-department) with a copy to the CoE.
- 17.5.9 During the curriculum revision, the HoDs in coordination with their Department Academic Advisory Committee (DAAC) shall identify the list of courses to be offered by the department under Honours curricula/ Minor in Engineering/specialization curricula and forward the same to the office of the Dean AA.
- 17.5.10 Student shall be permitted to take a maximum of one theory course and one laboratory course during any semester for additional learning towards Honours curricula/ Minor in Engineering curricula.
- 17.5.11 Student shall take laboratory courses, listed under Honours curricula/Minor in Engineering curricula, in the parent-department/ minor-department during inter-semester break and complete

the course with a course project.

- 17.5.12 The office of the Dean AA shall compile and release a list of courses under Honours curricula/ Minor in Engineering curricula for different departments/ programmes/disciplines, highlighting the importance of each discipline.
- 17.5.13 By the end of April of every academic year, the Dean AA in coordination with HoDs shall notify the department wise list of equivalent courses in MOOCs/ SWAYAM-NPTEL MOOCs against the list of courses notified under Honours curricula/ Minor in Engineering curricula, by respective departments.
- 17.5.14 The office of the Dean AA shall release registration notification for Honours/ Minor in Engineering, during even semester of every academic year inviting interested students of B. Tech IV semester to apply.
- 17.5.15 Interested students shall submit three (03) copies of applications in the prescribed format, *notified by the Dean AA*, along with supporting documents to the concerned HoD in the parent-department. The HoD in coordination with DAAC shall scrutinize the submitted applications and forward the consolidated list of registered students along with two sets of applications to the Dean AA.
- 17.5.16 The Dean AA shall notify, in coordination with the CoE, the list of eligible students towards **Honours** and forward this list to the **parent-department**. These notified students shall be allowed to do additional learning towards Honours in Engineering from V semester onwards.
- 17.5.17 The Dean AA shall notify, in coordination with the CoE, the list of eligible students towards Minor in Engineering and forward this list to the Minor-department in which student opted to gain prescribed credits for Minor in Engineering along with one set of application. These notified students shall be allowed to do additional learning towards Minor in Engineering from V semester onwards.
- 17.5.18 In the process of additional learning towards Honours/ Minor in Engineering, the student shall exercise carefully all options to ensure the following:
- (i) The credits earned in a course studied in regular curriculum towards fulfilment of basic degree shall not be claimed under credits for

additional learning towards Honours/ Minor in Engineering and vice versa

(ii) A course once studied in regular curriculum, shall not be taken again for additional learning towards Honours/ Minor in Engineering

- 17.5.19 The HoD in coordination with department MOOCs coordinator and faculty counsellor concerned, shall monitor progress of the registered student during the semester for successful completion of registered courses of Honours curricula.
- 17.5.20 The Minor-department HoD in coordination with Minor-department MOOCs coordinator and faculty counsellor concerned, shall monitor progress of the registered student during the semester for successful completion of registered courses of Minor in Engineering curricula.
- 17.5.21 On successful completion of registered courses, the student shall submit the course completion details in “Semester wise progress report (*for additional learning towards Honours/Minor in Engineering*)” in the prescribed format notified by the Dean, AA along with Certificate/ Grade sheet/ Mark sheet (indicating credits of the course) to the HoDs concerned (parent-department /Minor-department).
- 17.5.22 The HoDs shall consolidate “Semester wise progress report (*for additional learning towards Honours/Minor in Engineering*)” of all the students registered for *Honours/Minor in Engineering* in their departments and forward the same to the Dean AA.
- 17.5.23 The Dean AA shall ensure genuineness of the submitted certificates, of registered students, with the help of the Institute MOOCs coordinator and forward the semester wise progress of registered students to the CoE.
- 17.5.24 The CoE shall ensure for reflecting the earned credits for additional learning towards Honours/Minor in Engineering in corresponding student semester grade sheet, subsequently in consolidated grade sheet and transcripts.
- 17.5.25 Separate CGPA for Honours and/or Minor in Engineering shall be mentioned in the consolidated grade sheet.
- 17.5.26 The students who have registered for Honours/ Minor in Engineering but unable to accumulate the 18 credits prescribed towards Honours/ Minor in Engineering at the time of graduation, he/she shall be awarded the Degree in his/her discipline without any mention about Honours/ Minor



in Engineering.

17.6 The University will award degrees to the students who are evaluated and recommended by the Institute.

## 18. MALPRACTICE IN EXAMINATION

18.1 Malpractice in examination is an illegal activity and is prohibited.

18.2 Mobile phones are strictly prohibited in the examination hall.

18.3 Exchange of question paper and material like pen, pencil, sharpener, eraser, scale, calculator, etc., during examination is strictly prohibited.

18.4 Malpractice in examination is viewed very seriously. Malpractice includes oral communication between candidates, possessing forbidden material, mobile phones (switched off/on) etc.

18.5 Any malpractice or engaging in any improper conduct and violation of the examination code by the student during examinations is liable for the punishment as given below:

S. No.	Nature of Malpractice	S. No.	Punishment
1.	Taking help from others, consulting and/or helping other examinees during the examination period inside the examination hall or outside it, with or without their consent or helping other candidates to receive help from anyone else	a)	Cancelling the examination of the paper in which he/she indulged in malpractices
2.	If the examinee attempts to disclose his / her identity to the valuer by writing his/her Hall Ticket Number at a place other than the place prescribed for it or any coded message including his/her name or addressing the valuer in any manner in the answer book	b)	Cancelling the examination of the paper in which he/she indulged in malpractices
3.	Candidate is found in possession of forbidden material; relevant or not relevant but not used	c)	Cancellation of the result of all examinations (both theory and practical) taken and proposed to be taken including current examination in that

			session
4.	Destroying the material found in his / her possession or acting in any other manner with a view to destroying evidence	d)	Cancellation of the result of all examinations taken or proposed to be taken during that session and prohibiting his/her admission to or continuation in any course of the Institute for a period of one year. The student will be eligible to appear for the next corresponding semester / year examination in the succeeding academic year
5.	Smuggling main answer book / additional answer book/ question paper / matter in to or out of the examination hall & conspiring to interchange Hall Ticket Numbers	e)	Cancellation of the result of all examinations taken or proposed to be taken during that session and prohibiting his/her admission to or continuation in any course of the Institute for a period of one year. The student will be eligible to appear for the next corresponding semester / year examination in the succeeding academic year
6.	Candidate is found in possession of forbidden material, relevant or not relevant but used	f)	Cancellation of the result of all examinations taken or proposed to be taken during that session and prohibiting his/her admission to or continuation in any course of the Institute for a period of one year. The student will be eligible to appear for the next corresponding semester / year examination in the succeeding academic year
7.	In case of (i) impersonation, (ii) misbehavior with the invigilators/ any person related to examination	g)	Cancellation of the result of all examinations taken or proposed to be taken during that session and

	work, (iii) insertion of written sheets in different handwriting in the main/additional answer book, and (iv) creation of disturbance in and around the examination hall during or before the examination		prohibiting his/her admission to or continuation in any course of the Institute for a period of two years. Further, the candidate shall not be allowed to appear for any examination during the period of punishment
8.	If a candidate is found guilty of malpractice in the improvement examination (after completion of course)	h)	Punishment will be awarded subject to the above rules and further, he/she will not be permitted to appear for further improvement examination
9.	Taking out answer booklets outside the examination room.	i)	The candidate shall be awarded an "F" Grade in that course
10.	Possession of Mobile phones, programmable calculator, recording apparatus or any unauthorized electronic equipment.	j)	Cancellation of the result of all examinations (both theory and practical) taken and proposed to be taken including current examination in that session
11.	Possession of earphones, headphones and other relevant gadgets	k)	Cancellation of the result of all examinations (both theory and practical) taken and proposed to be taken including current examination in that session
12.	Taking a photo and sending the question paper outside the examination hall through mobile phone or any electronic gadget	l)	Cancellation of the result of all examinations (both theory and practical) taken and proposed to be taken including current examination in that

			session and prohibiting his/her admission into or continuation of any course of the institute for a period of one year. Further the candidate shall not be allowed to appear for any examination during the period of punishment
13.	Candidate is found in possession of forbidden material, like written or printed materials, bits, writings on scale, calculator, Eraser, hand kerchief, dress, part of the body and hall ticket etc., relevant or not	m)	Cancellation of the result of all examinations (both theory and practical) taken and proposed to be taken including current examination in that session
14.	Possession of answer book of another candidate. Giving the answer book to another candidate.	n)	Cancellation of the result of all examinations (both theory and practical) taken and proposed to be taken including current examination in that session
15.	Physical assault to the invigilator or any examination officials.	o)	Rustication from the Institute.
16.	Helping candidates during examination from outside the examination venue through WhatsApp or any other way.	p)	Suspension from the institute for one semester
17.	Student found to be written any relevant content on the table or bench before starting the examination	q)	Cancellation of the result of all examinations (both theory and practical) taken and proposed to be taken including current examination in that session
18.	Any other forms of exam malpractice, not covered	r)	Appropriate Decision by the exam malpractice committee

## 19. ROLL NUMBER ALLOTMENT

The Roll Number given to the student shall have a total of 8 digits as follows:

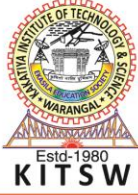
Ex: **B24CE108**

- a) The first letter, to represent the Bachelors (B.Tech.) degree programme.  
Ex: B for **B.Tech.** programme
- b) The next two numbers represent the year in which the student admitted into I semester.  
Ex: 24 for **2024**
- c) The next two letters represent the department concerned to which the student belongs.  
Ex: CE for **Civil Engineering**
- d) The last three numbers represent the three - digit roll number of the student.

In general, a **student with roll number “B24CE108”** represents a **B.Tech.** student admitted in **2024** in **Civil Engineering** bearing roll number **108**.

## 20. AMENDMENTS

Notwithstanding anything contained in this manual, the Academic Council of the Institute reserves the right to modify / amend the curricula, requirements and rules & regulations pertaining to its undergraduate programmes, without any further notice.



## KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506 015, Telangana, INDIA.

కాకతీయ ప్రేయోగికీ ంవ విజ్ఞాన సంస్థాన, వరంగల - 506 015 తెలంగానా, భారత

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - 506 015 తెలంగాణ, భారతదేశము

(An Autonomous Institute under Kakatiya University, Warangal)

(Approved by AICTE, New Delhi; Recognised by UGC under 2(f) & 12(B); Sponsored by EKASILA EDUCATION SOCIETY)

# Annexure-I

## SCHEME OF ASSESSMENT & EVALUATION (A&E)

### IN

## COMPETENCY FOCUSED OUTCOME BASED EDUCATION

### (CF-OBE) UNDER URR-24

Maximum marks for theory course	: 250
Maximum marks for lab integrated course	: 350
Maximum marks for value added course/ability enhancement course	: 100
Minimum percentage of marks for passing	: 40%

# 1. Introduction

Assessment & Evaluation (A&E), Grading and Certification rest on examination system which plays an important role in the progression of a learner on the learning path. The exams not only indicate whether the desired learning outcomes have been achieved but also assess the level of achievements against benchmarks.

Assessment & Evaluation (A&E) of students is a critical aspect of Outcome Based Education (OBE) that emphasizes continuous assessment, evaluation and feedback throughout the learning process. It allows the faculty to identify each student's strengths and weaknesses on an ongoing basis. This enables personalized instruction to be tailored to meet individual learning needs, ensuring that each student can progress at their own pace. Regular competency-focused assessments encourage students to reflect on their own learning and performance. Self-assessment skills are essential for lifelong learning, helping students develop the ability to evaluate their own work and make informed decisions about their learning strategies.

For holistic learning, there is a need to assess and evaluate both generic and technical competencies acquired by a graduate. The A&E in URR-24 assesses & evaluates both technical and generic competencies through formative and summative assessments.

Under URR-24 for Competency Focused Outcome Based Education (CF-OBE),

- A theory course shall be evaluated for a maximum of 250 marks
- A lab integrated course shall be evaluated for a maximum of 350 marks.

## 2. Components in A&E of CF-OBE

Under URR-24, the **Competency Focused Outcome Based Assessment & Evaluation (CF-OB-A&E)** of a student comprises of the following three components:

1. Generic Competency Building Activity Assessment (Formative assessment) – GCBAA
2. Mid Term Technical Competency Assessment (Formative assessment) – MTTCA assessment
3. End Semester Technical Competency assessment (Summative assessment) -ESTCA

**For a theory course**, the above three components shall be grouped into two classes as mentioned below.

1. Continuous Internal Evaluation (CIE) – 150 marks which includes GCBAA and MTTCA:
  - MTTCA shall be for 100 marks
  - GCBAA shall be for a maximum of 50 marks
2. End Semester Examination (ESE):
  - ESE shall be for 100 marks which includes ESTCA

**For a lab integrated course**, in addition to the above-mentioned components for the theory part, the following shall be used for evaluation of laboratory part.

1. Lab Continuous Internal Evaluation (CIE) – 60 marks
  - Performance based assessment for a maximum of 40 marks (average of marks awarded for each laboratory session performance)
  - Attendance for a maximum of 20 marks
2. Lab End Semester Examination (ESE):
  - ESE shall be for 40 marks

Table 1a shows the different components of A & E of the student for a theory course, which shall be evaluated for a maximum of 250 marks. Table 1b shows the components of A & E for a lab integrated course which shall be evaluated for a maximum of 350 marks.



Table 1a. Components of Assessment & Evaluation (A & E) for theory course

A & E Component		COs addressed	Max. marks	Weightage%	Max. Duration of exam	
<b>CIE (60%)</b>	Generic Competency Building Activity Assessment (GCBAA)	CO1 - CO4	50	20%	-	
	Mid Term Technical Competency Assessment (MTTCA)	Minor Exam -I	CO1	25	10%	45 mins
		MSE	CO1 & CO2	50	20%	90 mins (1 1/2 Hrs)
		Minor Exam-II	CO3	25	10%	45 mins
<b>ESE (40%)</b>	End Semester Technical Competency Assessment (ESTCA)	ESE	CO1 - CO4	100	40%	180 mins (3 Hrs)
<b>Total Marks</b>			<b>250</b>	<b>100%</b>	-	

Table 1b. Components of Assessment & Evaluation (A & E) for lab integrated course

A & E Component		COs addressed	Max. marks	Weightage %	Max. Duration of exam		
<b>Theory Part</b>	<b>CIE (60%)</b>	Generic Competency Building Activity Assessment (GCBAA)		CO1 - CO4	50	20%	-
		Mid Term Technical Competency Assessment (MTTCA)	Minor Exam - I	CO1	25	10%	45 mins
			MSE	CO1 & CO2	50	20%	90 mins (1 1/2 Hrs)
			Minor Exam- II	CO3	25	10%	45 mins
	<b>ESE (40%)</b>	End Semester Technical Competency Assessment (ESTCA)	ESE	CO1 - CO4	100	40%	180 mins (3 Hrs)
	<b>Total Marks -Theory</b>				<b>250</b>	<b>100%</b>	<b>-</b>
<b>Laboratory part</b>	<b>CIE (60%)</b>	Performance Based Assessment		CO5 - CO8	40	40%	-
		Attendance		-	20	20%	-
	<b>ESE (40%)</b>	End Semester Technical Competency Assessment (ESTCA)	ESE	CO1-CO8	40	40%	180 mins (3 Hrs)
	<b>Total Marks -Laboratory</b>				<b>100</b>	<b>100%</b>	<b>-</b>
<b>Total marks</b>					<b>350</b>	<b>-</b>	<b>-</b>

The pattern of Teacher's Assessment of different components has been attached herewith in subsequent sections.

### 3.Generic Competency Building Activity Assessment (Formative assessment) – GCBAA

During the start of the course, the course teacher shall upload the following (minimum) on CourseWeb:

1. 12 Tutorial sheets
2. 4 Course Projects (CPr)
3. Special Assignments (SAs) on:
  - a) 2 Course Research Papers (CRPs)
  - b) 2 Course Patent (CPs)

The student shall carefully exercise, as per his/her interests/ choices, the following activities under GCBAA to score a maximum of 50 marks.

- (i). **Single Source Notebook (SSN) & Attendance (Max: 20 marks):** Attend all classes, maintain a Single Source Notebook (SSN) for the course and pen down running notes with the important points taught/ discussed in the class.  
**(\*Maintaining 75% attendance is mandatory for promotion to the next higher semester)**
- (ii). **Maintaining record of tutorial solutions in SSN (Max: 20 marks):** Practice all tutorials by solving problems in the classroom & at home and maintain a record of solutions of all the tutorial sheets/problems.
- (iii). **Solving Tutorial problems on board (Max: 20 marks):** Solve the problems in the tutorial classes on the blackboard or present the solutions to tutorial problems in the class.
- (iv). **Submitting Special Assignments (CPs, CRPs) (Max: 20 marks):** Write a report (2-page summary) on any two of the special assignments i.e., CP, CRP, and submit the same to the teacher before the completion of the course.
- (v). **Presentations on Special Assignments (SAs) and Special topics (STs) (Max: 20 marks):** With the approval of the course faculty, present special assignment (CRPs, CPs) or a technical topic related to the course topics in the class in front of the classmates with a well-designed & documented ppt.

- (vi). **Coding Assignments (Max: 20 marks):** Submission of Coding Assignments
- (vii). **Course Projects (Max: 50 marks):** Complete any of the Course Projects and present/demonstrate them to the course faculty.

The division of marks under GCBAA is shown below in Table 2.

Table 2. Division of marks under Generic Competency Building Activity Assessment (GCBAA)

S.No.	Component	Generic competency to be assessed	Max. marks	Targeted POs
1.	Single Source Notebook & Attendance	Punctuality, Time Management & Responsibility	20	PO8, PO12
2.	Maintaining a record of solutions of tutorials in SSN	Problem Solving & Organizational skills	20	PO12
3.	Solving tutorial problems on board	Public speaking skills, Analytical Thinking & Collaboration	20	PO9, PO10
4.	Submitting Special Assignments (CPs, CRPs)	Reading comprehension, Paraphrasing & Writing skills	20	PO10
5.	Presentations on Special topics (STs) and Special Assignments (SAs)	Public speaking skills, Creativity & Organizational skills	20	PO9, PO10
6.	Coding Assignments	Programming skills, Logical Thinking & Problem solving	20	PO8, PO9, PO12
7.	Course Projects	Project management, Critical thinking, Creativity & Innovation	50	PO1 - PO12
	<b>Total marks</b>		<b>50 max.</b>	

**i. Single Source Notebook (SSN) & Attendance**

*Focused skills: Punctuality, Time Management & Responsibility*

Student must attend all the classes including tutorials and maintain Single Source Notebook (SSN). His/her attendance % shall be given weightage in Teacher's Assessment provided he/she maintains SSN. For example, if a teacher takes 42 classes (irrespective of the maximum number of classes for that course) and a particular student attends 32 classes out of 42 (irrespective of the reason behind absenteeism) besides maintaining SSN, he will be awarded 16 marks ( $20 \times 32 / 42 = 15.23$  which will be rounded to next higher integer  $\approx 16$ ). If the student fails to maintain SSN, the student shall be awarded only half of the marks which he obtains for maintaining attendance. **Maintaining 75% attendance is mandatory for promotion to next higher semester.** A sample evaluation of maintaining attendance has been shown in Table 3.

Table 3. Sample A&E of SSN & Attendance

Student Roll number	Number of classes held	Number of classes attended	% of classes attended	Marks based on attendance (Max. 20)	SSN maintained (Y/N)	Marks adjusted after SSN checking (Max. 20)	Final marks to be awarded (Max. 20)
B24XX001	42	30	71.4%	71.4 % of 20=14.28	Y	14.28	15
B24XX002	42	30	71.4%	71.4 % of 20=14.28	N	50% of 14.28 = 7.14	8
B24XX003	36	27	75%	75% of 20 = 15	N	50% of 15 = 7.5	8
B24XX004	36	35	97.2%	97.2% of 20=19.44	Y	19.44	20

**ii. Maintaining record of solutions of tutorial sheets in SSN:**

*Focused skills: Problem solving & Organizational skills*

Tutorials are intended to provide Higher Order Cognitive Abilities (HOCAs) to the students. The course faculty shall prepare weekly tutorial sheets covering the previous

week content of course as per the course worksheet. A minimum of 12 tutorial sheets (corresponding to 12 weeks of instruction) shall be uploaded by the course faculty on the CourseWeb. Every student has to solve the problems in tutorial sheets, either in class or at home (homework problems). Besides, the student has to maintain a record of all the tutorials in the Single Source Notebook (SSN). This will help him/her to go through the problems and solutions for examination preparation thereby helping students with quick recap. For maintaining this record of tutorial solutions, student shall be awarded a maximum of twenty marks. For eg: If a student maintains a record of solutions of 8 tutorial sheets out of 12, he/she can be awarded 14 marks out of 20 ( $20 \times 8 / 12 = 13.33$  rounded off to 14). It is to be noted that, unless the solutions of entire problems of a particular tutorial sheet is maintained, it shall not be considered for evaluation, i.e. if a student maintains a record of solutions of all problems of 6 tutorial sheets and solutions of few problems of 2 tutorial sheets, considering only fully solved tutorial sheets, he/she shall be awarded 10 out of 20 marks ( $20 \times 6 / 12 = 10$  marks). If a student maintains a record of complete solutions of 12 tutorial sheets in SSN, he/she shall be awarded 20 out of 20 marks.

**iii. Solving tutorial problems on board:**

*Focused skills: Public speaking skills, Analytical Thinking & Collaboration*

Based on the tutorial matrix, every student gets an opportunity to solve problems in the class and on the board with proper explanation or submit the solution to the teacher. Based on the students' performance in the tutorial classes, marks shall be awarded to them. If a student solves the problems on board, he/she will be awarded a maximum of 20 marks for each such activity. For e.g. If a student is not confident enough while solving problems on board, he/she can be awarded 12-15. Overall, a maximum of 20 marks are to be awarded to the student. A sample evaluation of the skills of the students based on solving tutorials on board has been provided in Table 4. The course faculty should ensure that all the students get a chance to solve tutorial problems on board.

Table 4. Sample A&E for solving tutorials on board

Student Roll number	Tutorial	Problem solving process (Max. 5)	Accuracy of solution (Max. 5)	Clarity of Explanation (Max. 5)	Use of board space & Confidence (Max. 5)	Total marks (Max. 20)
B24XX001	T5	5	5	4	3	17
B24XX002	T12	4	4	3	3	14
B24XX003	T4	4	5	5	4	18
B24XX004	T4	3	3	3	2	11

**iv. Submitting Special Assignments (CPs, CRPs):**

*Focused skills: Reading comprehension, Paraphrasing & Writing skills*

The core idea is to expose students to research literature corresponding to the course and nurture the culture of Innovation, Incubation, Research and Entrepreneurship. Course Teacher shall upload a minimum of 2 each of CPs and CRPs in the CourseWeb. Student shall submit a detailed report on his observations and inferences on any one of the CPs and any one of the CRPs. The report will be subjected to plagiarism check and a maximum of 10 marks will be awarded to each of the reports. Student can submit any number of CP or CRP reports, each of which can be evaluated for a maximum of 10 marks. It is to be noted that a maximum of 20 marks can be awarded to the student on submission of multiple CP and CRP reports.

**v. Presentation on Special Assignments (SAs) and Special Topics (STs):**

*Focused skills: Public speaking skills, Creativity & Organizational skills*

Students who wish to demonstrate their speaking skills and presentation skills, shall present a ppt (*not more than 15 min.*), with the approval of course faculty, on any of the CP/CRPs which are uploaded in the CourseWeb. With the consent of the course teacher, student can also choose a technical topic on the latest trends, related to the course content

and present the same in the classroom. For each of the presentations given by the students, they shall be evaluated for a maximum of 20 marks. A maximum of 20 marks shall be awarded for the student based on his presentations. For eg: If a student presents a CP & a special topic and obtains 16 marks and 15 marks respectively, he/she can be awarded 20 marks for demonstrating his speaking and presentation skills. A sample evaluation of presentation of special topics/special assignments has been shown in Table 5.

*Table 5. Sample A&E for presentations on SAs & STs*

Topic	Content Relevance (Max. 5)	Organization & Design of slides (Max. 5)	Communication skills (Max. 5)	Technical depth in presentation & Q-A handling (Max. 5)	Total marks (Max. 20)
SA-CRP	4	4	5	3	16
ST -Radar communication	4	4	3	4	15
Total marks (Maximum 20)					20

***vi. Coding Assignments:***

*Focused skills: Programming skills, Logical Thinking & Problem solving*

Coding assignments help in improving problem solving, creativity and coding abilities. The course teacher, at the start of the course, uploads a minimum of 2 coding assignments, each with a minimum of 2 questions with clear mentioning of deliverables. If the student solves those assignments, he/she can be awarded a maximum of 20 marks (Maximum of 10 marks for each of the coding assignments).

***vii. Course Projects:***

*Focused skills: Project management, Critical thinking, Creativity & Innovation*

The course Project is an independent project carried out by the student during the course period, under the supervision of the course teacher. It helps to reinforce the students' theoretical knowledge and develop their ability to apply this knowledge to the solution of practical problems. Course Projects also prepare them for their MINI and MAJOR



PROJECTs and for independent work in their chosen field that promotes creative abilities. Besides they provide Higher Order Cognitive Abilities (HOCAs). Faculty shall identify a minimum of four course projects which can be completed by the students based on the level of knowledge and skills acquired by the student acquired by the end of the course. Interested students can work on any one of the titles each by obtaining prior permission to submit Course Project Request Form to the course faculty. Students can also work on their own title for course project, but with due approval from course faculty. Upon successful completion, demonstration and submission of a brief report in prescribed format, the student will be awarded a Course Project Certificate along with a maximum of 50 marks based on the student's performance. An example of division of marks/ rubrics for evaluation of course projects is shown in Table 6. The course faculty can follow his/her own rubrics, with due approval from the Course Committee.

*Table 6. Rubrics for Course Project Evaluation*

Literature survey & Identification of research gaps	10 marks
Developing prototype: physical model/ simulation model	20 marks
Report writing (subjected to max of 30% plagiarism)	10 marks
Presentation in the department/ conference	10 marks

**Key points:**

1. It is to be noted that the course teacher shall award a maximum of 50 marks under Generic Competency Building Activity, based on the competency components the student chooses to demonstrate.
2. The course teacher shall maintain a record of generic competencies demonstrated by student under GCBA, in the student attendance register, throughout the course.
3. The record provided in Table 7 shall be printed in the student attendance register to maintain the A & E record of the students under GCBA.

*Table 7. Record of Generic Competency Building Activities Assessment  
(Students Attendance Register)*

AY:									Section:	
S.No.	Roll Number	(i) SSN & Attendance (Max. 20 marks)	(ii) Maintaining record of tutorial solutions in SSN (Max. 20 marks)	(iii) Solving tutorial problems on board (Max. 20 marks)	(iv) Special Assignments (Max. 20 marks)	(v) Presentation on STs & SAs (Max. 20 marks)	(vi) Coding Assignments (Max. 20 marks)	(vii) Course Project (Max. 50 marks)	Total marks	Marks awarded (Max. 50 marks)
1.	B24XX001									
2.	B24XX002									
3.	B24XX003									
4.	B24XX004									
5.	B24XX005									
6.	B24XX006									
7.	B24XX007									

Sample evaluation patterns for A&E are presented below.

**Example -1:** Student bearing Roll number B24XX001 has exhibited the generic competencies (i), (ii) & (iv) as below:

(i) Maintained SSN & an attendance of 78% in the course. Awarded 16 marks (15.6 rounded to 16) out of 20.

(ii) Maintained a neat record of solutions of all problems of only 8 tutorial sheets out of 12 in SSN. Awarded 14 marks ( $20 \times 8 / 12 = 13.33 = \text{rounded to } 14$ ) out of 20

(iv) Submitted a report on special assignments – one report on CP and one report on CRP. Scored 8 out of 10 in CP and scored 7 out of 10 in CRP

**Example -2:** Student bearing Roll number B24XX002 has exhibited the generic competencies (i), (ii), (iv) & (vi) as below:

(i) Maintained SSN & an attendance of 92%. Awarded 19 (18.4 marks rounded to 19) out of 20 marks.

(ii) Maintained a neat record of solutions of all problems of 12 tutorial sheets in SSN and awarded 20 out of 20 marks

(iv) Submitted a report on special assignments – one on CP and one on CRP. Scored 10 out of 10 marks in each of them

(vi) Solved problems in both coding assignments. Awarded 16 out of 20 marks.

**Example -3:** Student bearing Roll number B24XX003 has exhibited the generic competencies (i) & (vii) as below:

(i) Maintained SSN & 60% attendance in the course. Awarded 12 out of 20 marks.

(vii) Completed Course Project. Awarded 40 marks out of 50.

**Example -4:** Student bearing Roll number B24XX004 has exhibited the generic competencies (i), (ii) & (v) as below:

(i) Maintained SSN & an attendance of 84% in the course. Awarded 17 marks (16.8 rounded to 17) out of 20.

(ii) Maintained a record of solutions of all problems of 12 tutorial sheets out of 12 in SSN. Awarded 20 out of 20 marks

(v) Presented special Topic “Biomedical Signals” in the class. Awarded 16 out of 20 marks

**Example -5:** Student bearing Roll number B24XX005 has exhibited the generic competencies

(i) & (ii) as below:

(i) Maintained SSN & an attendance of 75% in the course. Awarded 15 marks out of 20.

(ii) Maintained a record of solutions of all problems of 9 tutorial sheets out of 12 in SSN. Awarded 15 out of 20 marks

**Example -6:** Student bearing Roll number B24XX006 has exhibited the generic competencies

(i), (ii), (iii), (iv), (v) & (vi) as below:

(i) Maintained SSN & an attendance of 98% in the course. Awarded 20 marks (19.6 rounded to 20) out of 20.

(ii) Maintained a record of solutions of all problems of 12 tutorial sheets out of 12 in SSN. Awarded 20 out of 20 marks

(iii) Solved problems of tutorial sheet T3 on board. Awarded 20 out of 20 marks.

(iv) Submitted a report on special assignments – one on CP and one on CRP. Scored 10 out of 10 marks in each of them

(v) Presented Special Assignment on CP “Smart and scalable off-grid mini-inverters” in the class. Awarded 20 out of 20 marks

(vi) Submitted two coding assignments. Scored 10 out of 10 marks in each of them

The assessment of the above mentioned four students has been shown below.

S.No.	Roll Number	(i) SSN & Attendance (Max. 20 marks)	(ii) Maintaining record of tutorial solutions in SSN (Max. 20 marks)	(iii) Solving tutorial problems on board (Max. 20 marks)	(iv) Special Assignments (Max. 20 marks)	(v) Presentation on STs & SAs (Max. 20 marks)	(vi) Coding Assignments (Max. 20 marks)	(vii) Course Project (Max. 50 marks)	Total marks	Marks awarded (Max. 50 marks)
1.	B25XX001	16	14	-	8+7=15	-	-	-	45	45
2.	B25XX002	20	20	-	10+10=20	-	16	-	76	50
3.	B25XX003	12	-	-	-	-	-	40	52	50
4.	B25XX004	17	20	-	-	16	-	-	53	50
5.	B25XX005	15	15	-	-	-	-	-	30	30
6.	B25XX006	20	20	20	20	20	20	-	120	50

#### 4. MINOR EXAMINATION

1. The Minor Exam-I examination shall be conducted in 4<sup>th</sup> or 5<sup>th</sup> week of instruction and Minor Exam-II examination shall be conducted in 11<sup>th</sup> or 12<sup>th</sup> week of instruction.
2. Minor Exam-I shall be assessed on Unit-I content for a maximum of 25 marks and Minor Exam-II shall be assessed on Unit-III content for a maximum of 25 marks.
3. Mode of conduction of examination (online/offline) will be decided by the Course Committee and the same shall be informed to the examination section, whenever applicable.
4. If the exam is conducted online mode:
  - (i) A maximum of 25 questions, each carrying one mark, are to be provided in a google form or any other online means of conduction of examination (SWAYAM-NPTEL examination format).
  - (ii) A minimum of 15 questions are to be aimed at HOCAs.
  - (iii) Marks are to be released at the end of examination along with the solutions on CourseWeb.
5. If exam is conducted in offline mode:
  - a. Three 1-mark questions and one 2-mark question aimed at LOCAs
  - b. One twenty-mark question, with internal choice, aimed at HOCAs.
    - i. Questions shall be set at HOCAs (minimum at APPLY level) targeting the intended COs.
    - ii. Each question shall have two sub-questions.
    - iii. Questions on HOCAs shall have interconnected questions testing the LOCAs (*Sample questions have been attached at the end of this book*).
6. Marks are to be released within three days of the examination along with the solutions posted on CourseWeb.
7. After the completion of assessments, the course teacher shall prepare the COAL and CDAL and list his observations and prepare ATTRs and ATRs.
8. A sample template of Minor examination has been shown below in Table 8a.

Table 8a. Template of Minor Examination

		Marks	CDLL	CO
1.	Short answer questions covering entire syllabus of Unit-I.			
	(i)	[1]	R	CO1
	(ii)	[1]	R	CO1
	(iii)	[1]	R	CO1
	(iv)	[2]	U	CO1
2.	Questions covering contents of Unit-I of the syllabus.			
	(i)	[10]	Ap	CO1
	(ii)	[10]	An	CO1
<b>(OR)</b>				
	(iii)	[10]	Ap	CO1
	(iv)	[10]	An	CO1

\*Question Paper Ends\*

9. If an open-book exam is conducted:

a. The open-book exam shall consist of a single open-ended question for 25 marks.

- i. Questions shall be set at HOCAs (minimum at APPLY level) targeting the intended COs.
- ii. The question shall have multiple sub-questions based on the discretion of the course committee.
- iii. Questions on HOCAs shall have interconnected questions testing the LOCAs.

10. Marks are to be released within three days of the examination along with the solutions posted on CourseWeb.

11. After the completion of assessments, the course teacher shall prepare the COAL and CDAL and list his observations and prepare ATTRs and ATRs.
12. A sample template of Minor examination has been shown below in Table 8b.

*Table 8b. Template of Minor Examination*

		Marks	CDLL	CO
1.	<i>One design / evaluate / analyze long questions (25 marks) covering contents of Unit-I.</i>			
		[25]	E	CO1

\*Question Paper Ends\*

## 5. MID SEMESTER EXAMINATION (MSE)

1. The MSE examination is to be conducted after 6-7 weeks of instructions.
2. The mode of conduction of examination will be offline (pen and paper) for a maximum of 50 marks.
3. Pattern of exam:
  - (i) Three 1-mark questions at CDLL-R & one 2-mark question at CDLL-U, from each unit of the stipulated syllabus (Unit-1 & Unit-2).
  - (ii) Two twenty-mark questions, one from each unit, with internal choice, aiming at HOCAs.
    - (a) Each 20 marks question shall have two sub-questions each of 10 marks
    - (b) Questions shall be set at HOCAs (min at APPLY level) targeting the intended COs
    - (c) Questions on HOCAs shall have interconnected questions testing the LOCAs (*Sample questions have been attached at the end of this book*).
4. Marks are to be released within three days of the examination along with the solutions posted on CourseWeb.
5. After the completion of assessments, the course teacher shall prepare the COAL and CDAL and list his observations and prepare ATTRs and ATRs.
6. A sample template of MSE examination has been shown below in Table 9.



Table 9. Template of MSE Examination

		Marks	CDLL	CO
1.	<i>Short answer questions covering entire syllabus of Unit-I &amp; Unit-II.</i>			
	i.	[1]	R	CO1
	ii.	[1]	R	CO1
	iii.	[1]	R	CO1
	iv.	[2]	U	CO1
	v.	[1]	R	CO2
	vi.	[1]	R	CO2
	vii.	[1]	R	CO2
	viii.	[2]	U	CO2
2.	<i>Questions covering contents of Unit-I of the syllabus.</i>			
	i.	[10]	Ap	CO1
	ii.	[10]	An	CO1
	<b>(OR)</b>			
	iii.	[10]	Ap	CO1
	iv.	[10]	An	CO1
3.	<i>Questions covering contents of Unit-II of the syllabus.</i>			
	i.	[10]	Ap	CO2
	ii.	[10]	An	CO2
	<b>(OR)</b>			
	iii.	[10]	Ap	CO2
	iv.	[10]	An	CO2

\*Question Paper Ends\*

## 6. END SEMESTER EXAMINATION (ESE)

1. ESE examination is to be conducted after 12-14 weeks of instructions.
2. Mode of conduction of examination will be offline (pen and paper) for a maximum of 100 marks.
3. Pattern of exam:
  - (i) Three 1-mark questions at CDLL-R & one 2-mark question at CDLL-U, from each unit of the stipulated syllabus (Units-1 to 4).
  - (ii) Four twenty-mark questions, one from each unit, with internal choice, aimed at HOCAs.
    - (a) Each 20 marks question shall have two sub-questions each of 10 marks
    - (b) Questions shall be set at HOCAs (min at APPLY level) targeting the intended COs
    - (c) Questions on HOCAs shall have interconnected questions testing the LOCAs (*Sample questions have been attached at the end of this book*).
4. After the completion of assessments, the course teacher shall prepare the COAL and CDAL and list his observations and prepare ATTRs and ATRs.
5. A sample template of ESE examination has been shown below in Table 10.

*Table 10. Template for ESE Examination*

		Marks	CDLL	CO
1.	<i>Short answer type questions covering contents of Unit-I, Unit-II, Unit-III &amp; Unit-IV.</i>			
	i.	[1]	R	CO1
	ii.	[1]	R	CO1
	iii.	[1]	R	CO1
	iv.	[2]	U	CO1
	v.	[1]	R	CO2
	vi.	[1]	R	CO2
	vii.	[1]	U	CO2
	viii.	[2]	U	CO2
	ix.	[1]	R	CO3
	x.	[1]	R	CO3
	xi.	[1]	R	CO3
	xii.	[2]	U	CO3
	xiii.	[1]	R	CO4
	xiv.	[1]	R	CO4
	xv.	[1]	R	CO4
	xvi.	[2]	U	CO4

2.	<i>Questions covering contents of Unit-I of the syllabus.</i>				
	i.		[10]	Ap	CO1
	ii.		[10]	Ap	CO1
<b>(OR)</b>					
	iii.		[10]	Ap	CO1
	iv.		[10]	Ap	CO1
3.	<i>Questions covering the contents of Unit-II of the syllabus.</i>				
	i.		[10]	An	CO2
	ii.		[10]	An	CO2
<b>(OR)</b>					
	iii.		[10]	An	CO2
	iv.		[10]	An	CO2
4.	<i>Questions covering contents of Unit-III of the syllabus.</i>				
	i.		[10]	Ap	CO3
	ii.		[10]	An	CO3
<b>(OR)</b>					
	iii.		[10]	Ap	CO3
	iv.		[10]	An	CO3
5.	<i>Questions covering contents of Unit-IV of the syllabus.</i>				
	i.		[10]	Ap	CO4
	ii.		[10]	An	CO4
<b>(OR)</b>					
	iii.		[10]	Ap	CO4
	iv.		[10]	An	CO4

\*Question Paper Ends\*

## 7. CIE & ESE FOR LABORATORY COMPONENT IN LAB INTEGRATED COURSES

For laboratory part in lab integrated courses

### (I) Continuous Internal Evaluation (CIE):

1. Every student shall complete a minimum of 10 laboratory experiments to be allowed to take ESE laboratory exam.
2. If the student misses any regular sessions of laboratory, he/she should complete the experiment in make-up laboratory sessions.
3. CIE of laboratory has two components

#### *i. Performance based assessment:*

- (a) The performance of student in each laboratory session (including Remedial laboratory sessions/ Makeup laboratory sessions) will be evaluated for a maximum of 40 marks.
- (b) The average of performances of the students in a minimum of 10 laboratory sessions shall be awarded against a maximum of 40 marks.
- (c) E.g. The performance of a student in ten sessions has been shown in Table 11 with the final assessment marks.

$$\text{Average marks} = \frac{E_1 + E_2 + E_3 + E_4 + E_5 + E_6 + E_7 + E_8 + E_9 + E_{10}}{10}$$

#### *ii. Attendance:*

- (a) Student shall attend all regular laboratory sessions as per schedule. His/her attendance % shall be considered for awarding a maximum of 20 marks in CIE.
- (b) The attendance for regular classes shall only be counted. Attendance of Make-up laboratories will not be counted for awarding marks for attendance.

$$\text{Marks for attendance} = 20 * \frac{\text{Number of regular laboratory sessions attended}}{\text{Number of regular laboratory sessions conducted}}$$

### (II) End Semester Examination (ESE):

- (i) Course Teacher shall conduct an exam on any of the 10 experiments performed by the student in the laboratory course.

(ii) His/her performance can be evaluated for a maximum of 40 marks.

(iii) As a case study, the evaluated performance of a student in ESE is presented as shown in table 12. The course teachers are free to follow their own rubrics for assessing the student in ESE.

Table 11. Sample evaluation of CIE in laboratory-based course

Sl. No.	Roll number	Performance based assessment											Marks for attendance			Final marks (60)
		E1 (40)	E2 (40)	E3 (40)	E4 (40)	E5 (40)	E6 (40)	E7 (40)	E8 (40)	E9 (40)	E10 (40)	Average (40)	Regular sessions attended	Regular sessions held	Marks awarded (20)	
1.	B24XX001	34	35	20	36	34	32	28	31	35	36	33	9	12	15	33+15=48
2.	B24XX002	26	28	31	32	29	27	20	18	26	34	28	12	12	20	28+20=48

Table 12. Sample evaluation of ESE in laboratory-based course

Sl. No.	Roll number	Writeup (10)	Performing the experiment (10)	Results (10)	Comprehensive Viva-voce (10)	Total (40)
1.	B24XX001	9	9	9	6	33
2.	B24XX002	5	5	5	2	17

## 8. MINIMUM REQUIREMENT FOR PASSING A COURSE

### **A. Theory Course:**

A student is deemed to have passed in a theory course (without laboratory), if he / she secures

- a) 40% of marks assigned to End Semester Examination (ESE) of theory course (Minimum of 40 marks out of 100 marks in ESE)
- and
- b) 40% of marks assigned to ESE and CIE taken together (Minimum of 100 marks out of 250 marks of the course)

### **B. Lab Integrated Course:**

A student is deemed to have passed in lab integrated course, if he / she secures

- a) 40% of marks assigned to End Semester Examination (ESE) of theory course (Minimum of 40 marks out of 100 marks in ESE)
- and
- b) 40% of marks assigned to ESE and CIE of theory and laboratory taken together (Minimum of 140 marks out of 350 marks of the course)

The samples of components of final A&E for awarding Pass/Fail are shown in Table 13.

Table 13a. Sample final scores of students in theory course (without laboratory)

S.No.	Roll Number	CIE (150)				ESE (100)	Total marks (250)	% of marks	Pass/Fail	Remarks, if fail
		GCBAAs (50)	MINOR EXAM-I (25)	MSE (50)	MINOR EXAM-II (25)					
1.	B24XX001	40	15	20	10	<b>60</b>	<b>145</b>	58%	Pass	Attained min 40% i.e. 40 marks out of 100 in ESE & Attained min. 40% i.e., 100 marks out of 250 in CIE+ESE
2.	B24XX002	50	20	40	22	<b>85</b>	<b>217</b>	86.8%	Pass	Attained min 40% i.e. 40 marks out of 100 in ESE & Attained min. 40% i.e., 100 marks out of 250 in CIE+ESE
3.	B24XX003	50	10	10	10	<u>30</u>	<b>110</b>	44%	Fail	Not attained minimum 40% i.e., 40 marks out of 100 in ESE
4.	B24XX004	40	5	0	0	<b>50</b>	<u>95</u>	38%	Fail	Not attained minimum 40% i.e., 100 marks out of 250 marks in CIE+ESE

Table 13b. Sample final scores of students in lab integrated course

S.No.	Roll Number	CIE (150)				CIE LAB (60)	ESE LAB (40)	ESE theory (100)	Total marks (350)	% of marks	Pass/Fail	Remarks, if fail
		GCBAAs (50)	MINOR EXAM-I (25)	MSE (50)	MINOR EXAM-II (25)							
1.	B24XX001	40	20	40	15	50	30	<b>75</b>	<b>270</b>	77.1%	Pass	Attained min 40% i.e. 40 marks out of 100 in ESE & Attained min. 40% i.e., 140 marks out of 350 in CIE+ESE
2.	B24XX002	45	10	10	10	26	10	<b>52</b>	<b>163</b>	46.5%	Pass	Attained min 40% i.e. 40 marks out of 100 in ESE & Attained min. 40% i.e., 140 marks out of 350 in CIE+ESE
3.	B24XX003	40	10	15	5	35	20	<u>21</u>	<b>146</b>	41.7%	Fail	Not attained minimum 40% i.e., 40 marks out of 100 in ESE theory
4.	B24XX004	40	AB	AB	AB	20	10	<b>60</b>	<u>130</u>	37.1%	Fail	Not attained minimum 40% i.e., 140 marks out of 350 marks in CIE+ESE

## 9. GRADING SYSTEM

1. At the end of the semester a student, if passed in a course, shall be awarded a letter grade in that course considering the total marks secured in that course.
2. For arriving at a grade obtained by a student in a particular course, the total marks obtained by the student in CIE+ESE for theory or lab integrated course shall be converted to a letter grade following the guidelines in Table 14.
3. X represents the % of max marks secured, and is calculated using the formula:

$$X = \frac{\text{Total marks secured in the course (if passed)}}{\text{Maximum marks of the course}} * 100$$

*Table 14. Grades to be allotted*

Grade	Total % of max marks secured
S	$X \geq 90\%$
A	$80\% \leq X < 90\%$
B	$70\% \leq X < 80\%$
C	$60\% \leq X < 70\%$
D	$50\% \leq X < 60\%$
P	$40\% \leq X < 50\%$
F	$X < 40\%$

*Table 15. Example of grades allotted for courses for a student*

Name of the course	Course Type	Max. marks for the course	Marks secured	Total % of max marks secured	Grade
Communication Engineering	Theory	250	150	60%	C
Analog Electronics	Lab Integrated	350	264	75.4%	B
Signals & Systems	Lab integrated	350	302	86.2%	A
PSD Lab	Lab	100	94	94%	S
SEA-1	VAC	100	81	81%	A





## 11. Assessment & Evaluation of PRACTICUM

*Focused skills: Project management, Critical thinking, Creativity & Innovation*

Practicum is an independent project carried out by the student during the course period, under the supervision of allotted course faculty. It helps to reinforce the students' theoretical knowledge and develop their ability to apply this knowledge to the solution of practical problems. Practicums also prepare them for their MINI and MAJOR PROJECTs and for independent work in their chosen field that promotes creative abilities. Besides they provide Higher Order Cognitive Abilities (HOCAs).

- (i). Practicum is a mandatory semester project work.
- (ii). Practicum is offered as a one credit course. Student must earn 4 credits (one in each semester from I to IV semesters)
- (iii). Allotment of Practicum topics for students:
  - **Practicum matrix:** In week (-1), the class teacher, in consultation with HoD, shall prepare the practicum matrix of the section. The practicum matrix is the allotment of group of students to the different course faculty of the section, as shown below.

*Table 16: Allotment of students to a course teacher in PRACTICUM*

Course	U24MH101	U24PS102	U24EC103	U24CS104	U24EE105	U24CH106
Students allotted to different courses	B24XX001	B24XX011	B24XX021	B24XX031	B24XX041	B24XX051
	B24XX002	B24XX012	B24XX022	B24XX032	B24XX042	B24XX052
	B24XX003	B24XX013	B24XX023	B24XX033	B24XX043	B24XX053
	B24XX004	B24XX014	B24XX024	B24XX034	B24XX044	B24XX054
	B24XX005	B24XX015	B24XX025	B24XX035	B24XX045	B24XX055
	B24XX006	B24XX016	B24XX026	B24XX036	B24XX046	B24XX056
	B24XX007	B24XX017	B24XX027	B24XX037	B24XX047	B24XX057
	B24XX008	B24XX018	B24XX028	B24XX038	B24XX048	B24XX058
	B24XX009	B24XX019	B24XX029	B24XX039	B24XX049	B24XX059
	B24XX010	B24XX020	B24XX030	B24XX040	B24XX050	B24XX060

- In week (-1), the class teacher of a section shall collect 10-12 topics for PRACTICUM from each of the course teachers of that section.
- The class teacher, in consultation with HoD shall allot the practicum topics to the students of that section in the following format.

\*\*\*\*

## CIRCULAR

*Allotment of Practicum topics to students*

Section: .....

S.No.	Roll number of the student	Practicum topic allotted	Practicum under the course teacher	Course faculty

Note:

1. The students should meet immediately the allotted course faculty for practicum and start working on the practicum with the guidance of course faculty.
2. To complete the Practicum, the student shall work in laboratories under supervision of allotted course faculty, in the allotted hours in the classwork timetable and outside the class work hours during weekdays.
3. The course faculty are advised to guide the allotted students for practicum during the semester course work.

*(Signature of class teacher)*

\*\*\*\*

- (iv). *To complete the practicum, the student shall work in laboratories under supervision of allotted course faculty, in the allotted hours in the classwork timetable and outside the class work hours during weekdays.*
- (v). There shall be only continuous Internal Evaluation (CIE) for practicum for a maximum of 100 marks.
- (vi). The practicum course faculty shall evaluate & submit the final marks of the allotted students in week (N+1) to the respective class teacher.
- (vii). The class teacher shall collect the final marks of the practicum of the students allotted to each course teacher and submit them to the CoE.
- (viii). Course faculty shall follow his/her own rubrics for practicum evaluation. Focus shall be on knowledge, skills & qualities acquired by the student during the practicum course

(ix). A sample rubrics for assessment and evaluation of practicum is as follows:

Table 17: Rubrics for PRACTICUM

Literature survey & Identification of research gaps	10 marks
Working model / process / software package / system developed	30 marks
Report writing (subjected to max of 30% plagiarism)	20 marks
Oral presentation with PPT and viva-voce	20 marks
Video pitch	20 marks
<b>Total</b>	<b>100 marks</b>

**Note:** It is mandatory for the student to appear for oral presentation and viva-voce to

qualify for course evaluation of Practicum.

- (a) **Practicum Topic:** Each student shall be allotted a topic for practicum by the course faculty member attached to him/her. Interested students can work on their own title for practicum, but with due approval from course faculty.
- (b) **Working Model:** Each student is required to develop a prototype / process / system/simulation model on the given practicum topic and demonstrate/present, during the allotted time, before the course teacher.
- (c) **Report:** Each student is required to submit a well-documented report on the allotted practicum topic as per the format specified by the course faculty. The student shall include answers to the following questions in the report and ppt presentation.
  - What was the objective of the practicum assigned?
  - What are the main responsibilities and tasks for practicum?
  - What knowledge and skills from the coursework are applied in the practicum?
  - What new knowledge and skills are acquired during the practicum?
  - In what ways, can the practicum be helpful for the professional career?
  - What gaps are identified in your practicum work?
  - What improvements or changes you suggest for addressing the identified gaps for future work?
- (d) **Anti-Plagiarism Check:** The practicum report should clear plagiarism check as per the Anti-Plagiarism policy of the institute

- (e) **Presentation:** Each student should prepare PPT with informative slides and make an effective oral presentation before the course teacher as per the schedule notified by the department
- (f) **Video Pitch:** Each student should create a pitch video, which is a video presentation on his / her Practicum. Video pitch should be no longer than 5 minutes by keeping the pitch concise and to the point, which shall also include evidence like videos & pics at the time of implementing the practicum and also key points about his / her business idea / plan (*if any*) and social impact
- (g) The student has to register for the Practicum as a supplementary examination in the following cases:
  - i) he/she is absent for oral presentation and viva-voce
  - ii) he/she fails to submit the report in prescribed formathe/she fails to fulfill the requirements of Practicum evaluation as per specified guidelines

## 12. Assessment & Evaluation of SEA/SAA

Activity Based Liberal Learning about Life, Literature and Culture (ABL@LLC) is introduced for building **generic competencies** in students. ABL is aimed at all dimensional holistic growth of the learner. The holistic development includes the **physical, emotional, cognitive, spiritual and social aspects**. This is an area which opens the decision-making process, helps the student to develop creativity, an analytical mind, and builds resilience, confidence, hope, well-being and success. This will help student face the world with a greater degree of maturity, stoic and become a wholesome person in society.

It is more than just learning from books to lead a successful life. These activity-based liberal learning courses, which help students to expand their social roles later in life, are offered under two sequels namely **SEA** (Social Empowerment Activities) and **SAA** (Self Accomplishment Activities)

These SEA/SAA courses also focus on building positive mindset: adopting optimism, acceptance, resilience, gratitude, mindfulness, and integrity in your life will help student develop and maintain a positive mindset.

- (a) Each SEA/SAA activity is treated as one credit course
- (b) Student must select one activity per semester, through the first 04 semesters, from the courses listed under SEA/ SAA, before commencement of the semester.
- (c) Students are required to earn a minimum of 04 credits under SEA/SAA, by completing minimum 02 credits through SEA and minimum 02 credits through SAA
- (d) To complete these activities, student shall work outside the class work hours, during weekends, holidays, semester breaks, etc.,
- (e) If a student is not able to attend/ fulfil performance requirements, he/she shall be dropped from the course and shall have to enroll in the forthcoming semesters.

### Monitoring SEA/SAA:

- (a) **Nodal units:** The Student Activity Centre (SAC) and Centre for Innovation Incubation Research and Entrepreneurship (C-i<sup>2</sup>RE) shall act as nodal units for activities listed under SEA/SAA.
- (b) During the semester period, the student has to **acquire requisite knowledge, conduct fieldwork**, acquire skills and propose unique solutions to real-life problems
- (c) **Knowledge Acquisition & Skilling:**
- i. Students have to identify goals, acquire and accumulate knowledge on the chosen SEA/SAA activity
  - ii. For the activities related to social awareness/issues/challenges that affect society, use the knowledge base, apply relevant skills to analyze the issue and propose unique possible solutions to the social issues/challenges. Practice to acquire necessary skills to seek new opportunities in their personal and professional life.
  - iii. For the activities related to physical fitness, music, dance, fine arts, etc., guided practice sessions under supervision of expert/guru are to be planned and executed to acquire benchmark skills to be demonstrated.
- (d) **Fieldwork:** Fieldwork is an essential component of learning for gaining real-life experiences. In addition to knowledge acquisition & skilling, student has to take up fieldwork on the chosen activity, as part of SEA/SAA course.
- i. This student-driven Fieldwork allow students to interact with the 'real world'. It is an autonomous learning (self-learning) situation that students are more actively involved during the activity and develop a deeper understanding and develop a more positive attitude.
  - ii. Fieldwork consists of three phases: preparation, the actual activity and feedback
  - iii. **As part of fieldwork, student has to interact with at least two eminent personalities/achievers/renowned persons/inspiring and great personalities related to the chosen activity.**
  - iv. Fieldwork will benefit students for any careers where they need to work with communities of people or which involves analysis of complex processes, especially social and cultural.
  - v. Certain skills are required for effective fieldwork, which include

observation, communication, interviewing, problem solving, documentation, and more

- vi. Other skills important for fieldwork practice include the ability to act in a crisis, to plan, set priorities, mobilize resources, and implement the plan effectively. These skills used in an integrated manner help students solve their problems and develop one's own leadership style based on the need and culture of the place.
- vii. **Eminent personalities/achievers/renowned persons/inspiring and great personalities**  
*Eminent personalities/ Achievers / Renowned personalities:*
  - (a). **In case of socially relevant problems/ activities of SEA/SAA:**  
Eminent personalities/ achievers include district administrative officers, Eminent Social workers / NGOs, other inspiring and great personalities
  - (b). **In case of Sports / Games and Cultural activities of SEA/SAA:**  
Eminent coaches/ trainers/gurus, achievers who represented/won state level/national level /international level competitions, other inspiring and great personalities.
- viii. **For appointment to interact eminent personalities:** Student is expected to follow email etiquette rules and other appropriate polite communication etiquettes for getting appointment and time for interaction
- ix. On fieldwork, student is expected to demonstrate solid time management, organizational and note taking skills during fieldwork
- x. **Ethics of fieldwork:** Fieldwork is an educational process with commitment to positive values. All fieldwork should be planned and conducted in a way that is ethical, responsible and safe, for people, students, communities, if any, and all other stakeholders. Student is expected to maintain integrity and honesty. Avoid bias and deception. Protect the rights and well-being of people involved in fieldwork. Privacy, confidentiality and respect for the eminent people interacting should be maintained and their time, input & guidance are to be acknowledged
- xi. Student is expected to take care of health and Safety practices for fieldwork and travel
- xii. Student should remember that contrary to a *field trip or company visit*, **the**



**emphasis in fieldwork is on acquiring skills**, and not on casually presenting theory and assessing.

- xiii. For the fieldwork, student shall go with a scientifically designed questionnaire and record the responses during interaction. These response sheets, along with geo-tagged pic of fieldwork (at the time of interaction & practice sessions, if any) shall be appended as annexures in the report to be submitted for course evaluation.
- xiv. **Feedback:** The learnings the student made out of interaction with eminent achievers shall be presented in the report as one of the chapters.
- During feedback, the central focus is on the elaboration of the students' experience during fieldwork. Therefore, the student should create an end product, such as a demonstration/presentation and report in which they demonstrate a link between their experiences during fieldwork and the underlying theoretical concepts and ideas.
- (e) **Demonstration / Presentation and Report:** Student after presentation/demonstration of his/her achievements/work, shall get a certificate from the concerned nodal unit and submit a report, in the prescribed format, to the faculty counsellor for award of grade.
- (f) **Flow process for completion of SEA/SAA course:**
- i. **Faculty counsellor approval:** In week (-1), in consultation with faculty counsellor, every student shall, identifies minimum of 4 activities listed under SEA/SAA activities, lists their priority and fills the same in ONLINE REGISTRATION FORM FOR SEA/SAA (received in their domain mail id) to Dean, Student Affairs. Dean, Student Affairs shall release the section wise allotment of SEA/SAA courses to students along with the details of supervising faculty of nodal centre. The allotment details shall be shared to the SEA/SAA coordinator and the student through domain mail id of the student
  - ii. **Identification of goals and preparation of action plan:** In week (1), the respective faculty coordinator(s) of nodal centres shall address the students allotted to them to educate them on fixing goals, plan of action for completion and evaluation. In consultation with nodal centre, based on the workflow of the allotted activity, every student shall identify the goals (of activity) & eminent personalities (to be visited during the field

trip) and prepare action plan (oriented workflow) for attaining the identified goals.

- iii. **Field work:** Under the guidance of the nodal centre, student shall complete the field work based on the action plan, with the progress continuously monitored by the faculty counsellor and the nodal centre.
- iv. **Demonstration/ Presentation:** After completion of field work, student shall demonstrate/present his achievements (knowledge/skills gained during the activity) at the nodal centre in the presence of external experts/senior practitioners of the activity. After successful demonstration/presentation, the nodal centre shall provide a certificate of completion indicating that the student has completed the activity in the stipulated time.
- v. **Report writing:** After successful demonstration/presentation, student shall write a 2-3-page report and submit the same to the faculty counsellor. The report shall emphasize knowledge, skills and qualities acquired through the SEA/SAA activities. It shall also include the influence of these activities on enhancing confidence, positive change in life, decision making, transforming choices into desired actions/outcomes.

(g) **Assessment & Evaluation:** There shall be *only Continuous Internal Evaluation (CIE) for SEA/SAA*. The SEA/SAA activities shall be evaluated at the end of the semester through respective evaluation processes, which shall include field work, presentation/ demonstration, submission of reports on the gathered data/information/ surveys, the details of which have been shown in below table. The department level SEA/SAA coordinator shall collect marks from the nodal centres and faculty counsellors, consolidate them, and submit the final grades to the examination branch, within one week of the last day of instruction. Evaluation of SEA/SAA activities shall be completed as and when students are ready, but not later than week (N+1).

The CIE for SEA/SAA is as follows:

*Table 18: Nodal Centres for Assessment of SEA/SAA*

Assessment	Maximum marks	Marks to be awarded by
Goal setting, Planning & Knowledge Acquisition	20	Nodal centre
Field work	40	Nodal centre

Demonstration/Presentation	20	Nodal centre
Report submission	20	Faculty counsellor
<b>Total</b>	<b>100</b>	-

**Note:**

- (a) **Presentation/ Demonstration:** It is mandatory for the student to appear for a demonstration and (or) oral presentation to qualify for course evaluation. In case of presentation, student should prepare PPT with informative slides including the geo tagged photos of his/her field trips/interactions as per the schedule notified by the nodal centre. In case of demonstration, student has to take timeslot from the nodal centre and demonstrate the skills learnt/improved during the allotted timeslot.
- The necessary arrangements for the demonstration shall be looked after by the student in consultation with the coordinator with the due permission from the Head of the department.
- (b) **Report:** Each student is required to submit a well-documented report on the chosen SEA/SAA topic as per the format specified by *department level SEA/SAA coordinator*.
- (c) **Anti-Plagiarism Check:** The SEA/SAA report should clear plagiarism check as per the Anti-Plagiarism policy of the institute.
- (d) **Requirements for passing the course:** A student is deemed to have passed SEA/SAA if he/she
- a. successfully demonstrates/presents the skills attained at the end of course as per the schedule notified by the nodal centre, **and**
  - b. scores a minimum of 40 marks in the CIE of the course
- (i) **Supplementary examination:** If a student fails in SEA/SAA activity of a particular semester, he must complete the same by enrolling in the next higher semesters.

### 13. Assessment & Evaluation of Expert Talk Series (ETS)

**In the 21<sup>st</sup> century, for successful career, degree alone won't suffice. Competencies are much more important.**

- (a) You need to be aware of the real-world problems, industry working style, need to be confident and smart and you also need to know the tricks of the trade.
- (b) Learning from industry experts with real-world examples, is important to enhance your educational experience.
- (c) Enhanced graduate employability benefits all stakeholders. To effectively enhance employability and the immediacy of adding value to company/project, it is important that you are aware of what you are learning and its use in the workplace. The cognitive abilities viz., remember, understand, recall, and application of knowledge and other skills acquired in higher education can be maximised if you are clear on the purpose of your developed competencies and how to apply them in a range of complex situations.
- (d) Graduate employability could be enhanced through fostering lifelong learning, the development of a range of employability-related competencies and increased confidence and capacity in "reflecting on and articulating these capabilities and attributes in a range of recruitment situations".

**But how would you know all this without venturing into the industry?**

- (e) The answer is Industry **Expert Talk Series (ETS)**. Through ETS, we invite industry experts in different fields to deliver talks and interact with students.
- (f) Through Industry expert talks students get to know so much more that textbooks don't explain.
- (g) Students can learn from professionals who have achieved success in their respective fields. These speakers often share their personal experiences, case studies, and anecdotes, providing students with real-world examples and perspectives that go beyond theoretical concepts.

- (h) Our competency-focussed curriculum URR24 is designed to contribute greatly to the nurturing and development of each of these facets among students through ETS courses
- (i) ETS helps students gain improved industry engagement for an easier transition into the workplace, broader career progression opportunities and personal development.
- (j) In URR24 curriculum, Expert talk series (ETS) is offered as a course under **ability enhancement category of courses**.
- (k) Through ETS sessions, students get the chance to interact with industry regularly which helps them focus on the needs and requirements of current industry. This will not only enthuse the students with new ideas but also motivate them to understand what kind of 21<sup>st</sup> century skills are needed in industry and how they need to groom themselves.
- (l) Other benefit of ETS sessions is that students learn the importance of soft skills like communication, presentation, email etiquettes, corporate grooming and dressing styles. Conversing with successful people is the biggest motivation and students gain in more ways than one through ETS sessions.
- (m) ETS enhances your learning in many ways for global opportunities for your career.
- (n) All in all, learning from industry experts, is a wonderful opportunity for student to getting acquainted with professional etiquette, acquiring professional knowledge, and getting to know the internal workings of an organization.
- (o) Salient features of ETS are hereunder:
  - (i) ETS is offered from I semester to VI semester.
  - (ii) ETS, in any given semester, is treated as one credit course
  - (iii) Students are required to earn six credits (from I to VI semester)
  - (iv) **Head, Centre for i<sup>2</sup>RE** shall be the **institute level ETS coordinator**
  - (v) Under this course, a minimum of 10 expert talks shall be organized in **online/offline mode** by the parent department / Centre for i<sup>2</sup>RE.

- (vi) Each expert talk shall be for a minimum duration of 45 minutes (*but not exceeding 90 minutes*) followed by **online quiz/test** for 10 marks (10 MCQs/FiBs; *duration: 10-15 mins*), on the contents covered in the expert talk.
  - (vii) **The Head C-i<sup>2</sup>RE** shall share the marks obtained by the students in each of the quizzes / tests to the respective **department ETS coordinators**.
  - (viii) Each student shall attend a minimum of 6 expert talks and attempt the corresponding quizzes/ tests conducted at the end of the talks.
  - (ix) **Report on ETS:** At the end of semester, the student shall submit a well-documented report on the acquired knowledge and skills, in the prescribed format, to the department ETS coordinator.
  - (x) **Evaluation:** There shall be only continuous Internal Evaluation (CIE) for ETS for a maximum of 100 marks
  - (xi) The department ETS coordinator shall, in coordination with the institute level ETS coordinator, submit the final scores to the CoE in week (N+1).
- (p) The CIE for ETS is as follows:

*Table 19. Rubrics for evaluation of ETS*

Quiz score <i>(Sum of best 6 quiz scores out of 10 quizzes. Each quiz evaluated for 10 marks)</i>	60 marks
Attendance <i>(out of 10 quizzes)</i>	20 marks
Report in prescribed format <i>(max 30% plagiarism)</i>	20 marks
<b>Total</b>	100 marks

- i. **Attendance:** Maximum of 20 marks shall be awarded based on the attendance maintained by the student over a maximum of 10 lectures.

$$\text{Marks for attendance} = \frac{\text{Number of expert talks attended fully}}{10} * 20$$

## ii. Supplementary Exam:

- (a) Student has to register for ETS supplementary examination if he/she scores less than 40 marks in CIE
- (b) The ETS supplementary examination shall be conducted by the parent department, in physical mode, for 100 marks (MCQs/FiBs ; *duration: 2Hrs*) on the content covered in ETS lectures.
- (c) Department ETS coordinator shall, in coordination with the institute level ETS coordinator, conduct the supplementary exam, and submit scores to the CoE

Exam material/resources for supplementary: Recorded videos of ETS arranged for that semester, which shall be made available on ETS webpage of institute website.

## 14. Assessment & Evaluation of Exit courses

1. A&E of exit course shall have three components together shall have maximum of 100 marks
  - a. Attendance carries a maximum of 20 marks
  - b. ESE of theory shall have maximum 40 marks
  - c. ESE of lab shall have maximum of 40 marks
2. The ESE examination is to be conducted after 8 weeks of instructions.
3. Pattern of exam for theory:
  - a. Four ten-mark questions, one from each unit, with internal choice, aimed at HOCAs
  - b. Questions on HOCAs shall have interconnected questions testing the LOCAs (*Sample questions have been attached at the end of this book*).
4. A sample template of ESE examination has been shown below in Table 20.

*Table 20. Template of ESE Examination*

		Marks	CDLL	CO
1.	<i>Questions covering contents of Unit-I of the syllabus.</i>			
	i.	[5]	Ap	CO1
	ii.	[5]	Ap	CO1
<b>(OR)</b>				
	iii.	[5]	Ap	CO1
	iv.	[5]	Ap	CO1
2.	<i>Questions covering contents of Unit-II of the syllabus.</i>			
	i.	[5]	An	CO2
	ii.	[5]	An	CO2
<b>(OR)</b>				
	iii.	[5]	An	CO2
	iv.	[5]	An	CO2



3.	<i>Questions covering contents of Unit-III of the syllabus.</i>				
	i.		[5]	Ap	CO3
	ii.		[5]	An	CO3
		<b>(OR)</b>			
	iii.		[5]	Ap	CO3
	iv.		[5]	An	CO3
4.	<i>Questions covering contents of Unit-IV of the syllabus.</i>				
	i.		[5]	Ap	CO4
	ii.		[5]	An	CO4
		<b>(OR)</b>			
	iii.		[5]	Ap	CO4
	iv.		[5]	An	CO4

## 15. Assessment & Evaluation of Seminar

1. The HoD shall constitute a *Department Seminar Evaluation Committee (DSEC)*
2. *DSEC* shall allot a faculty supervisor to each student for guiding on (i) selection of topic (ii) literature survey and work to be carried out (iii) preparing a report in proper format and (iv) effective seminar presentation
3. There shall be only continuous Internal Evaluation (CIE) for seminar
4. The CIE for seminar is as follows:

Assessment	Weightage (Max. Marks)
Seminar Supervisor Assessment	20
Seminar Report	30
Seminar Paper	20
<i>DSEC Assessment: Oral presentation with PPT and viva-voce</i>	30
<b>Total:</b>	<b>100</b>

**Note:** It is mandatory for the candidate to appear for an oral presentation and Viva- voce to qualify for course evaluation.

5. **Seminar Topic:** The topic should be interesting and conducive to discussion. Topics may be found by looking through recent issues of peer reviewed Journals / Technical Magazines on the topics of potential interest
6. **Report:** Each student is required to submit a well-documented report on the chosen seminar topic as per the format specified by *DSEC*.
7. **Anti-Plagiarism Check:** The seminar report should clear plagiarism check as per the Anti-Plagiarism policy of the institute.
8. **Presentation:** Each student should prepare PPT with informative slides and make an effective oral presentation before the *DSEC* as per the schedule notified by the department
9. The candidate shall register the Seminar as supplementary examination in the following cases:
  - a. student is absent for oral presentation and viva-voce
  - b. student fails to submit the report in prescribed format
  - c. student fails to fulfil the requirements of seminar evaluation as per specified guidelines
10. Supplementary examination for seminar

- a. The CoE shall send a list of candidates registered for supplementary to the HoD concerned
11. The *DSEC*, duly constituted by the HoD, shall conduct seminar evaluation and send the award list to the CoE within the stipulated time

## 16. Assessment & Evaluation of Mini-Project

1. The HoD shall constitute a *Departmental Mini Project Evaluation Committee (DMPEC)*
2. Every student shall take up an independent Mini project on innovative ideas. However, wherever it is not feasible a group of 2 to 4 students shall be allowed to take up a mini project. The *DMPEC* shall take a decision on the number of students in a group.
3. *DMPEC* shall allot a faculty supervisor to each student for guiding on (i) selection of topic (ii) literature survey and work to be carried out (iii) preparing a report in proper format and (iv) effective mini project oral presentation
4. There shall be only continuous Internal Evaluation (CIE) for mini project
5. The CIE for mini project is as follows:

Assessment	Weightage (Max. Marks)
Mini Project Supervisor Assessment	20
Working model / process / software package / system developed	20
Mini Project report	20
Mini Project paper	10
Video pitch	10
<i>DMPEC Assessment: Oral presentation with PPT and viva-voce</i>	20
<b>Total:</b>	<b>100</b>

Note: It is mandatory for the candidate to appear for oral presentation and Viva-voce to qualify for course evaluation.

6. **Mini Project Topic:** The topic should be interesting and conducive to discussion. Topics may be found by looking through recent issues of peer reviewed Journals/ Technical Magazines on the topics of potential interest
7. **Working Model:** Each student is required to develop a working model/ process/ system on the chosen work and demonstrate before the *DMPEC* as per the dates specified by *DMPEC*
8. **Report:** Each student is required to submit a well-documented report on the chosen seminar topic as per the format specified by *DMPEC*
9. **Anti-Plagiarism Check:** The seminar report should clear plagiarism check as per

the Anti-Plagiarism policy of the institute

10. **Presentation:** Each student should prepare PPT with informative slides and make an effective oral presentation before the *DMPEC* as per the schedule notified by the department
11. **Video Pitch:** Each student should create a pitch video, which is a video presentation on his/ her mini project. Video pitch should be no longer than 5 minutes by keeping the pitch concise and to the point, which shall also include key points about his/ her business idea / plan (*if any*) and social impact
12. The candidate shall register the Mini project as a supplementary examination in the following cases:
  - a. Student is absent for oral presentation and viva-voce
  - b. Student fails to submit the report in prescribed format
  - c. Student fails to fulfil the requirements of Mini project evaluation as per specified guidelines.
13. Supplementary examination for mini project
  - a. The CoE shall send a list of candidates registered for supplementary to the HoD concerned
14. The *DMPEC*, duly constituted by the HoD, shall conduct Mini project evaluation and send the award list to the CoE within the stipulated time

## 16. Assessment & Evaluation of Major Project

1. Final year major project work is teamwork and represents the culmination of study towards the B. Tech degree. Major project offers an opportunity to integrate the knowledge acquired from various courses and apply it to solve real-world complex engineering problems. The student learning assessment process (SLAP) shall include a good number of presentations, demonstration of work undertaken, submission of a project report, writing project paper in scientific journal style & format, preparing project poster and creating video pitch on the complete project work.
2. Activities of the major project SLAP shall be planned in such a way to ensure that the students acquire the essential knowledge, skills and qualities (KSQ) of a professional engineer.
3. Major project work shall be normally conducted in two stages: Major project work.
  - a. Phase-I in seventh semester and Major project work Phase-II in eighth semester.
  - b. Nearly 50 - 75% of the proposed work to be completed in 7th semester as Phase-I and the remaining work to be continued and completed in 8th semester as Phase-II

### (I) Major Project *Phase-I*:

- (a) Every student is expected to put approximately **72 hours of work** into the major project *phase-I* course over the 12 weeks of 7<sup>th</sup> semester
- (b) The HoD shall constitute a *Departmental Project Evaluation Committee (DPEC)*
- (c) The convener DPEC shall allot faculty supervisors to all project teams for guiding on (i) project objectives and expected deliverables (ii) plan their project work and timeline (iii) enough resources for successful project completion (iv) knowledge, skills and qualities (KSQ) to be acquired to propose solutions to the identified real-world problem for the project work (v) preparing a well-documented report in proper format and (iv) effective major project oral presentation
- (d) The project supervisors shall ensure students focus on the project objectives, expected deliverables and students have sufficient resources for successful project completion

- (e) The project supervisors are also expected to continuously emphasize and guide the students on following project timeline, meeting cadence, activity journaling in project logbook
- (f) There shall be only continuous Internal Evaluation (CIE) for Major Project *Phase-I*
- (g) CIE for the Major Project *Phase-I* in seventh semester is as follows:

Major project work Phase-I Assessment ( <i>7<sup>th</sup> semester</i> )	Weightage (Max. Marks)
<b>A. Supervisor Assessment</b>	<b>20</b>
<b>B. DPEC Assessment</b> (i) Registration Presentation (10) (ii) Progress Presentation-I (20) (iii) Project progress*: Part of working model/ process/software package/system developed (30) (iii) Well-documented Progress Report on Phase-I work (10) (iv) Video pitch on Phase-I (10)	<b>80</b>
<b>Total:</b>	<b>100</b>

\* Students are advised to complete major part of the project in phase-I only

- (h) **Working Model:** Every project team shall be required to develop a working model/process/software package/system, on the chosen work. The progress made in this shall be demonstrated during progress presentation-I at the end of *phase-I* and the completed working model/ process/software package/system before DPEC as per the dates specified by DPEC at the end of *phase-II*.
- (i) **Progress Report on *phase-I*:** Every project team shall be required to submit a well-documented progress report on dissertation phase-I as per format specified by DPEC.
- (j) **Video pitch on *phase-I*:** Every project team shall be required to create a pitch video, which is a video presentation on their major project work *phase-I*. It should be a 3 to 5-minute-long video (no longer than 5 minutes), highlight the progress made at various stages during *phase-I* project implementation
- (k) A student shall register for supplementary examination for the Major project work *phase-I* in the following cases:
- (l) Student is absent for oral presentation and viva-voce as part of progress presentation-I
- (m) Project team fails to submit the progress report on *phase-I* in prescribed format

- (n) Project team fails to submit the video pitch on the progress made during the *phase-I* period.
- (o) Student fails to fulfill the requirements of major project work *phase-I* evaluation as per specified guidelines
- (p) Supplementary examination for major project work *phase-I*
- (q) The CoE shall send the list of students registered for supplementary examination, to the HoDs concerned
- (r) DPEC shall conduct major project *phase-I* supplementary exam and send the award list to the CoE within the stipulated time

**(II) Major Project Phase-II:**

- a) All the major project teams shall take the *phase -I* work forward and complete the remaining work as *Phase-II* in the 8<sup>th</sup> semester.
- b) Every student is expected to put approximately 168 hours of work into the major project *phase-II* course over the 12 weeks of 8<sup>th</sup> semester
- c) The project supervisors are expected to guide the students to systematically continue the *phase-I* work, useful work during inter-semester break, meeting the deadlines as proposed in project timeline
- d) The project supervisors shall ensure students focus on the project objectives and expected deliverables and ensure students have sufficient resources for successful project completion
- e) The project supervisors are also expected to continuously emphasize and guide the students on following project timeline, meeting cadence, activity journaling in project logbook.
- f) The evaluation for Major Project work *Phase-II*: There shall be continuous internal evaluation (CIE) and end semester examination (ESE). The evaluation for *phase-II* shall be as given below:



Assessment	Weightage (Max. Marks)
<b>A. CIE</b> <b>(i) Supervisor Assessment (10)</b> <b>(ii) DPEC Assessment (50)</b> (a) Progress presentation-II (10) (b) Final presentation (10) (c) Working model / process / software package / system developed (20) (d) Project video pitch (5) (e) Project paper (5)	<b>60</b>
<b>B. ESE</b> (i) Well-documented project report (15) (ii) Oral presentation with PPTs and viva-voce (15) (iii) Project poster (5)	<b>40</b>
<b>Total</b>	<b>100</b>

- g) **Working Model:** Every project team shall be required to develop a working model/process/software package/system, on the chosen work. The completed working model/ process/software package/system shall be demonstrated during final presentation at the end of *phase-II*.
- h) **Video pitch:** Every project team shall be required to create a pitch video, which is a video presentation on their major project work *phase-I & phase-II*. The project team shall present the produced video pitch during Final presentation
- i) **Project poster:** At the end, the project teams shall present their project in the form of posters (A2 size). Teams shall have to present their work during the poster presentation session scheduled at the end of the 8<sup>th</sup> semester, at the time of demonstration of complete porotype / working model / software package / system developed.
- j) **Well-documented plagiarism-cleared project report:** Every project team shall be required to submit a well-documented project report on the work carried out, as per the format specified by the DPEC. The report should clear plagiarism check as per the anti-plagiarism policy-2020 of the institute.
- k) A student shall register for supplementary examination for the Major project work *phase-II* in the following cases:
- (i) Student is absent for oral presentation and viva-voce as part of ESE presentation

- (ii) Student fails to fulfill the requirements of major project work *phase-II* evaluation as per specified guidelines
- l) Supplementary examination for major project work *phase-II*
  - (i) The CoE shall send the list of students registered for supplementary examination, to the HoDs concerned
  - (ii) The DPEC, duly constituted by the HoD, shall conduct major project *phase-II* supplementary exam and send the award list to the CoE within the stipulated time

## 17. Assessment & Evaluation of Internship

1. The students shall undergo 6-8 weeks internship during summer/winter vacation at industry/R&D organization / Academic Institutes like IITs, IIITs & NITs.
2. The students preferably undergo an internship at one organization only. In case of any difficulty, the stipulated period of internship shall be completed at different organizations with a minimum of one week internship at every stage.
3. The internship evaluation shall be done in the VII semester of study and hence the students shall complete the prescribed period of internship before start of VII semester (from end of II semester to commencement of VII semester).
4. The internship evaluation shall be done by *department internship evaluation committee (DIEC)* based on the submitted report by student and oral presentation.
5. There shall be only Continuous Internal Evaluation (CIE) for internship evaluation.
6. The CIE for the Internship evaluation VII semester shall be as below:

Internship evaluation	Weightage (Max. Marks)
<b>A. Internship Supervisor's Assessment</b> (i) Feedback from the internship supervisor - on completion of internship assignment / work (20) (ii) Feedback from the internship supervisor - on quality of work in internship assignment / work (10) (iii) Feedback from the internship supervisor - internship logbook (10) (iv) Feedback from the internship supervisor - on attendance, punctuality and work hours (10)	<b>50</b>
<b>B. DIEC Assessment</b> (i) Internship duration (8 /6 weeks) (15/ 10) (ii) Internship Report (20) (iii) Oral Presentation (with PPT) and viva voce (15)	<b>50</b>
<b>Total:</b>	<b>100</b>

**Note:** It is mandatory for the student to appear for oral presentation (with PPT) and viva voce to qualify for course evaluation

7. **Internship Report:** Each student is required to submit a well-documented internship report (both *soft copy and soft bound hard copy*) as per format specified by DIEC
8. A student shall register for supplementary examination for the internship evaluation in the following cases:
  9. absent for oral presentation and viva-voce
  10. fails to submit the internship report in prescribed format
  11. fails to fulfil the requirements of internship evaluation as per specified guidelines
12. Supplementary examination for internship evaluation
13. The CoE shall send the list of students registered for supplementary examination, to the HoDs concerned
14. The DIEC, duly constituted by the HoD, shall conduct internship evaluation supplementary exam and send the award list to the CoE within the stipulated time

## 18. Assessment & Evaluation of MOOCs

### 1. SWAYAM - MOOCs

- (a) **SWAYAM-MOOCs:** Massive Open Online Courses (MOOCs) are such online courses which are developed as per the pedagogy and made available on the SWAYAM (Study Web of Active-learning by Young and Aspiring Minds) platform of *Government of India*
- (b) **SWAYAM** shall notify all Institutions, on 1<sup>st</sup> June 1<sup>st</sup> November every year, the list of online learning courses going to be offered in the upcoming semester.

### 2. Registration for SWAYAM - MOOCs and Credits

- (a) The student shall be allowed to register for MOOCs courses for the designated Professional electives and Open electives mentioned in the curriculum.
- (b) The student shall select a relevant MOOCs course carrying 3 credits.
- (c) The Institutional MOOCs coordinator, with the help of departmental MOOCs coordinator, shall guide the students throughout the course.

### 3. Evaluation and Certification of MOOCs:

- (a) The Principal Investigator (PI) shall be a subject matter expert (SME) belonging to a reputed educational institution, called Host Institution
- (b) The host Institution and PI shall be responsible for evaluating the registered students for MOOCs course
- (c) After conduct of examination and completion of the evaluation, the PI through host institution shall award Marks/Grade as per the evaluation scheme announced.

### 4. Credit Mobility of MOOCs:

- (a) Institution shall allow the credit mobility for the courses earned through MOOCs.
- (b) A certificate regarding successful completion of the MOOCs courses shall be issued through the host Institution and sent to the parent institution.

(c) The parent institution shall give equivalent credit weightage to the students for the credits earned through online learning courses through SWAYAM platform in the credit plan of the programme.

5. In case the student is unable to complete the MOOCs course, he/she shall be allowed to select one of courses listed under respective PE/OE offered at institute/department concerned and appear for supplementary examination. In such a case, the student is deemed to have passed the course, if he/she scores a minimum 40% of maximum marks allotted to the course in the registered supplementary ESE only.