UNIVERSITY OF CALICUT

B.TECH ELECTRONICS AND COMMUNICATION ENGINEERING CURRICULUM - 2019 SCHEME

1st to 8th SEMESTERS

Every course of B. Tech. Program shall be placed in one of the nine categories as listed in table below.

Sl. No	Category	Credits
1	Social Sciences including Management courses	3
2	Basic Science courses	24
3	Engineering Science Courses	16
4	Program Core Courses	77
5	Program Elective Courses	15
6	Open Elective Courses	3
7	Internship, Project work, Seminar and Viva Voce	15
8	Practical Session	16
9	Mandatory Non-credit Courses (P/F) with grade	-----
10	Mandatory Student Activities (P/F)	1
	Total Mandatory Credits	**170**
11	Value Added Course (Optional)	20

No semester shall have more than six lecture-based courses and two laboratory and/or drawing/seminar/project courses in the curriculum. Semester-wise credit distribution shall be as below:

Sem	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Credits	19	19	21	20	21	22	23	24	169
Activity Points	50				50				---
Credits for Activity	1								1
G.Total									**170**

BASIC SCIENCE COURSES: Maths, Physics, Chemistry, Biology for Engineers, Life Science etc

ENGINEERING SCIENCE COURSES: Basic Electrical, Engineering Graphics, Programming, Basic Electronics, Basic Civil, Engineering, Engineering Mechanics, Mechanical Engineering, etc.

SOCIAL SCIENCES INCLUDING MANAGEMENT COURSES: Management, Finance & Accounting, Economics etc.

MANDATORY NON-CREDIT COURSES: Induction Programme, Environmental Science, Constitution of India, Life Skills & Ethics for Engineers, Communicative English, and Concept based Engineering.

VALUE ADDED COURSE: Students can attend various value added MOOC (Massive Open Online Courses) like NPTEL courses conducted by nationally or internationally reputed institutions with in like IIT,IIST etc, and abroad (from foreign universities) and earn a maximum of 20 additional credits for getting 'Honours' degree in the discipline with a condition that he/she should have secured an aggregate of 8.0 CGPA up till final semester without any history of backlogs. Thus, the candidate can earn a max of 190 credits during his/her period of studies up to 8^{th} semester. The selected course can be on same discipline or in any other relevant discipline pertaining to engineering/management/social science. 4 credits will be awarded to a student on successful completion of each MOOC. Thus, a student will be eligible to get an undergraduate degree with 'Honours' when he/she successfully earns an additional requirement of 20 credits through the successful completion of 5 MOOCs.

Successful completion of a MOOC is considered only when a student scores a minimum score of 60 (or equivalent to 60%) and above in the respective course. The additional value-added MOOC courses can be of 8 – 12-week duration. Each student who wish to do a MOOC should take prior permission from the respective Head of the Department, registering for the same with the institution which is hosting the course. The Head of the Department should verify the details of the course and ensure that the course content is relevant to his/her discipline before giving the approval. The details of MOOC courses undertaken by a student (if any) and the credits earned must be consolidated by the Tutor, forwarded by HOD and approved by Principal. The same has to be entered in the University portal by the college officials before the commencement of every end semester university examination.

HONOURS: -

Calicut University is providing this option for academically extra brilliant students to acquire Honours. Honours is an additional credential; a student may earn if she/he opts for the extra 20 credits needed for this in her/his own discipline with a condition that he/she should not have failed in any of the subjects till final semester and have secured an aggregate of 8.0 CGPA up till final semester. Honours is not indicative of class. Honours is intended for a student to gain expertise/specialise in an area inside his/her major B-Tech discipline to enrich knowledge in emerging/advanced areas in the branch of engineering concerned and interdisciplinary areas including management. However, the additional credits thus far earned by the student shall be included in the grade card but shall not be considered in calculating the CGPA. Upon completion of Honours, a student will be better equipped to perform research in her/his branch of engineering and allied sectors. On successful achievement of 20 credits from the honours and 170 credits from their respective B-tech syllabus, the student will earn a total credit of 190 at the end of the programme which he/she will be eligible to get the Degree Certificate as "Bachelor of Technology in Electronics and Communication Engineering, with Honours."

The details of the students eligible for conferring the Honours Degree must be sent to the university by the principal, with the details of his/her marks up to seventh semester and the number of value-added courses and credits earned before the commencement of the 8^{th} semester university examination.

COURSE CODE AND COURSE NUMBER

Each course is denoted by a unique code consisting of three alphabets followed by three numerals like EC19 807 (P)**.** The first two letter code refers to the department offering the course. EC stands for Electronics and Communication. The second two digits represent the year in which the syllabus is set, the digit 19 represents the year 2019. Out of the next three digits, the first digit represents the semester in which the subject belongs, Eg. in 807, 8 means 8^{th} semester and 07 is the 7^{th} subject in that semester. The last alphabet represents whether the subject belongs to the Practical or laboratory category. Eg. (P) Means the subject belongs to the Practical category.

L-T-P STRUCTURE

Notations	Description
L	Lecture hours- For theory based courses hours are represented in this form Eg 3-0-0 , means 3 hour lecture per week is dedicated for this subject
T	Tutorial hours- These hours may be assigned for solving numerical problems and allied activities. Eg. 3-1-0, means 1 hour per week is dedicated for this purpose.

P	Practical/Drawing/Interactive session/Visits etc- These hours may be dedicated for conducting laboratory sessions, practical classes, Engg/machine drawing classes, interactive sessions, group discussions and even industrial visits pertaining to a specific subject for better learning. Eg. 0-0-1 means one hour is dedicated for the above-mentioned purpose.

Description
Theory based courses (other the lecture hours, these courses can have tutorial and practical hours, e.g., L-T-P structures 3-0-0, 3-1-2, 3-0-2 etc.)
Laboratory based courses (where performance is evaluated primarily on the basis of practical or laboratory work with LTP structures like 0-0-3, 1-0-3, 0-1-3 etc.)

DEPARTMENTS: -

Each course is offered by a Department and their two-letter course prefix is given in Table

Departments and their codes

Sl.No	**Department**	**Course Prefix**
01	Electrical & Electronics Engineering	EE
02	Electronics & Communication Engineering	EC
03	Information Technology	IT
04	Mechanical Engineering	ME
05	Printing Technology	PT

INDUCTION PROGRAM

A mandatory induction program for first semester students is designed for three weeks. This unique three-week immersion foundation programme designed especially for the fresher's, includes a wide range of activities right from workshops, lectures and seminars by eminent people, visits to local areas, familiarization to branch, department and innovations, physical activity, yoga, literacy, sports tournaments, social work and much more. The programme is designed to mould students into well-rounded individuals, aware and sensitized to local and global conditions and foster their creativity, improve their level of confidence, to involve with the existing environment, inculcate values and ethics,

and help students to discover their passion. Foundation Programme also serves as a platform for the fresher's to interact with their batch mates, faculty and seniors and start working as a team with them. The program is structured around the following four themes:

The programme is designed to attain the following objectives:

- **Values and Ethics**: Focus on fostering a strong sense of ethical judgment and moral fortitude.
- **Creativity**: Provide channels to exhibit and develop individual creativity by expressing themselves through art, craft, music, singing, media, dramatics, and other creative designs/activities.
- **Leadership, Communication and Teamwork**: Develop a culture of teamwork and group communication.
- **Social Awareness**: Nurture a deeper understanding of the existing local and global environment and our role in that place as a responsible citizen of the world.

SUBJECTS AND GROUPS IN 1st and 2nd SEMESTER			
GROUP	**SUBJECT CODE**	**SUBJECT NAME**	**COMP/OPT**
A	MA19 100	Calculus and Linear Algebra	COMP FOR SEM1
	MA19 200	Differential Equations and Vector Calculus	COMP FOR SEM 2
B	CH19 100	Engineering Chemistry	OPT (1/2) IN BOTH SEMESTERS
	PH19 100	Engineering Physics	
C	GS19 100	Engineering. Graphics	OPT (1/2) IN BOTH SEMESTERS
	EM19 100	Engineering Mechanics	
D	EC19 100	Concepts of Electronics Engineering	COMP FOR EC IN SEM 1
	EE19 100	Concepts of Electrical Engineering	COMP FOR EE IN SEM 1
	ME19 100	Concepts of Mechanical Engineering	COMP FOR ME IN SEM 1
	IT19 100	Introduction to Computing and Problem Solving	COMP FOR IT IN SEM 1
	PT19 100	Concepts of Printing Technology	COMP FOR PT IN SEM 1

E*	EC19 101	Basics of Electronics Engineering	OPT (1/4) FOR SEM1 & OPT (2/4) FOR SEM 2- RELEVANT SUBJECTS
	EE19 101	Basics of Electrical Engineering	
	CE19 101	Basics of Civil Engineering	
	ME19 101	Basics of Mechanical Engineering	
F	ES19 100	Environmental Science	COMP FOR SEM 1
	DE19 200	Concept Based Engineering	COMP FOR SEM 2
G	CH19 100(P)	Engineering Chemistry Lab	OPT (1/2) IN BOTH SEMESTERS
	PH19 100(P)	Engineering Physics Lab	
H**	EE19 100(P)	Electrical Engineering Workshop	OPT (2/4) IN BOTH SEMESTERS
	EC19 100(P)	Electronics Engineering Workshop	
	CE19 100(P)	Civil Engineering Workshop	
	ME19 100(P)	Mechanical Engineering Workshop	
	IT19 100(P)	Introduction to Computing and Problem Solving Lab	
	PT19 100 (P)	Printing Technology Workshop	
I	CM19 100	Communicative English	COMP FOR SEM 1
	LL19 200	Language Lab	COMP FOR SEM2

COMP- COMPULSORY SUBJECT

OPT – OPTIONAL SUBJECT

* Concerned branches have to avoid choosing Basic of Engineering (E) ie., Mechanical Engineering students are not permitted to choose Basics of Mechanical Engineering and same is applicable for other branches also.

** EE19 100(P), EC19 100(P), ME19 100(P), IT19 100 (P), PT19 100 (P) are COMPULSORY for respective branches in SEMESTER 1.

SCHEME OF I SEMESTER B.Tech COURSE								
Subject Code	**Subject Name**	**Hours/Week**			**Marks**		**Duration of Semester End Examination**	**Credits**
		L	**T**	**P/D**	**Internal**	**End Semester**		
MA19 100	Calculus and Linear Algebra	3	1	0	50	100	3	4
PH19/ CH19 100	Engineering Physics/ **Engineering Chemistry**	3	1	0	50	100	3	4
GS19/ EM19 100	**Engineering Mechanics**	3	2	0	50	100	3	4
	Engineering Graphics	3	0	2				
EC19 100	Concepts of Electronics Engineering	3	0	0	50	100	3	2
EE19 101	Basics of Electrical Engineering	2	1	0	50	100	3	2
ES19 100	Environmental Science	2	0	1	100	-	-	0
CM19 100	Communicative English	2	0	0	100	-	-	0
CH19 100 (P)	Engineering Chemistry Lab	0	0	2	100	-	3	1
EE19 100 (P)	Electrical Engineering Workshop	0	0	2	100	-	3	1
EC19 100 (P)	Electronics Engineering Workshop	0	0	2	100	-	3	1
	TOTAL	**30**			**750**	**500**		**19**

NOTE:

COMMUNICATIVE ENGLISH

Objective is to develop in the under-graduate students of engineering a level of competence in English required for independent and effective communication for their professional needs. Coverage: Listening, Barriers to listening, Steps to overcome them, Purposive listening practice, Use of technology in the professional world. Speaking, Fluency & accuracy in speech, Positive thinking, Improving self-expression, Tonal variations, Group discussion practice, Reading, Speed reading practice, Use of extensive readers, Analytical and critical reading practice, Writing Professional Correspondence, Formal and informal letters, Tone in formal writing, Introduction to reports. Study Skills, Use of dictionary, thesaurus etc., Importance of contents page, cover & back pages, Bibliography, Language Lab.

SCHEME OF II SEMESTER B.Tech COURSE								
Subject Code	**Subject Name**	**Hours/Week**			**Marks**		**Duration of Semester End Examination**	**Credits**
		L	**T**	**P/D**	**Internal**	**End Semester**		
MA19 200	Differential Equations and Vector Calculus	3	1	0	50	100	3	4
PH19/ CH19 100	Engineering Physics/ Engineering Chemistry	3	1	0	50	100	3	4
GS19/ EM19 100	Engineering Mechanics	3	2	0	50	100	3	4
	Engineering Graphics	3	0	2				
CE19 101	Basics of Civil Engineering	2	1	0	50	100	3	2
ME19 101	Basics of Mechanical Engineering	2	1	0	50	100	3	2
DE19 200	Concept Based Engineering	2	0	1	100	-	-	0
PH19 100 (P)	Engineering Physics Lab	0	0	2	100	-	3	1
CE19 100 (P)	Civil Engineering Workshop	0	0	2	100	-	3	1
ME19 100 (P)	Mechanical Engineering Workshop	0	0	2	100	-	3	1
LL19 200	Language Lab	0	0	2	100	-	-	0
	TOTAL	**30**			**750**	**500**		**19**

SCHEME OF III SEMESTER B.Tech COURSE

Subject Code	Subject Name	Hours/Week			Marks		Duration of Semester End examination	Credits
		L	T	P/D	Internal	End Semester		
EN19 301	Engineering Mathematics III	3	1	0	50	100	3	4
EC19 302	Electronic Circuits	3	1	0	50	100	3	4
EC19 303	Network Theory	3	1	0	50	100	3	4
EC19 304	Digital Electronics	3	1	0	50	100	3	4
EC19 305	Electronic Devices	3	1	0	50	100	3	3
EN19 306	Life Skills and Ethics for Engineers	2	0	2	100	-	3	0
EC19 307(P)	Digital Electronics Lab	0	0	3	50	100	3	1
EC19 308(P)	Electronic Circuits Lab	0	0	3	50	100	3	1
	TOTAL	**17**	**5**	**8**	**450**	**700**		**21**
		30						

NOTE:

LIFE SKILLS& ETHICS FOR ENGINEERS

Life skills are those competencies that provide the means for an individual to be resourceful and positive while taking on life's vicissitudes. Development of one's personality by being aware of the self, connecting with others, reflecting on the abstract and the concrete, leading and generating change, and staying rooted in time-tested values and principles is being aimed at. This course is designed to enhance the employability and maximize the potential of the students by introducing them to the principles that underlie personal and professional success, and help them acquire the skills needed to apply these principles in their lives and careers. Professional ethics is highly needed for an engineer. This course will focus on to improvise the ethical quality of an engineer to meet the changing demands and requirements of the society.

SCHEME OF IV SEMESTER B.Tech COURSE								
Subject Code	**Subject Name**	**Hours/Week**			**Marks**		**Duration of Semester End examination**	**Credits**
		L	**T**	**P/D**	**Internal**	**End Semester**		
EN19 401	Engineering Mathematics IV	3	1	0	50	100	3	4
EC19 402	Signals and Systems	3	1	0	50	100	3	4
EC19 403	Microprocessor & Microcontroller	3	1	0	50	100	3	4
EC19 404	Analog Communication	3	1	0	50	100	3	3
EC19 405	Analog Circuits	3	1	0	50	100	3	3
EN19 406	Constitution of India	3	1	0	100	-	3	0
EC19 407(P)	Analog Circuits Lab	0	0	3	50	100	3	1
EC19 408(P)	Analog Communication Lab	0	0	3	50	100	3	1
	TOTAL	**18**	**6**	**6**	**450**	**700**		**20**
		30						

SCHEME OF V SEMESTER B.Tech COURSE								
Subject Code	**Subject Name**	**Hours/Week**			**Marks**		**Duration of Semester End examination**	**Credits**
		L	**T**	**P/D**	**Internal**	**End Semester**		
EN19 501	Engineering Economics and Principles of Management	3	1	0	50	100	3	3
EC19 502	Digital Signal Processing	3	1	0	50	100	3	4
EC19 503	Digital Communication	3	1	0	50	100	3	3
EC19 504	Electromagnetic Waves	3	1	0	50	100	3	3
EC19 505	Computer Architecture	3	1	0	50	100	3	3
EC19 506	Program Elective 1	3	1	0	50	100	3	3
EC19 507(P)	Digital Signal Processing Lab	0	0	3	50	100	3	1
EC19 508(P)	Microcontrollers Lab	0	0	3	50	100	3	1
	TOTAL	**18**	**6**	**6**	**400**	**800**		**21**
		30						

Program Elective I	
EC19 506(A)	Computing and Problem Solving
EC19 506(B)	Scientific Computing
EC19 506(C)	Embedded Systems
EC19 506(D)	Power Electronics
EC19 506(E)	Electronic Instrumentation
EC19 506(F)	Data Analysis

SCHEME OF VI SEMESTER B.Tech COURSE								
Subject Code	**Subject Name**	**Hours/Week**			**Marks**		**Duration of Semester End examination**	**Credits**
		L	**T**	**P/D**	**Internal**	**End Semester**		
EC19 601	Control System	3	1	0	50	100	3	4
EC19 602	VLSI Design	3	1	0	50	100	3	4
EC19 603	Data Communication & Networking	3	1	0	50	100	3	3
EC19 604	Antennas and Propagation	3	1	0	50	100	3	3
EC19 605	Program Elective II	3	1	0	50	100	3	3
EC19 606	Open Elective I	3	1	0	50	100	3	3
EC19 607(P)	Digital Communication Lab	0	0	3	50	100	3	1
EC19 608(P)	Mini Project	0	0	3	100	-	-	1
	TOTAL	**18**	**6**	**6**	**450**	**700**		**22**
		30						

*** Submission of report for internship done during the break of semester 6 can be done during the start of semester 7.**

Program Elective II		**Open Elective I**	
EC19 605(A)	Multirate Signal Processing	EC19 606(A)	Industrial Safety Engineering
EC19 605(B)	Renewable Energy Systems	EC19 606(B)	Soft Skill & Communication
EC19 605(C)	Basic Thermodynamics	EC19 606(C)	Entertainment Electronics
EC19 605(D)	Satellite Communication	EC19 606(D)	IoT and Applications
EC19 605(E)	Robotics	EC19 606(E)	Project Management
EC19 605(F)	Entrepreneurship	EC19 606(F)	Disaster Management

NOTE:

OPEN ELECTIVE:

These elective subjects are open to all students of various engineering disciplines. Any student can opt an elective subject based on his/her interest. These elective topics are of general in nature and focused on thrust areas. The number of students that can be accommodated in an elective is limited to 50, the allotment can be on first come first serve basis.

SCHEME OF VII SEMESTER B.Tech COURSE								
Subject Code	**Subject Name**	**Hours/Week**			**Marks**		**Duration of Semester End examination**	**Credits**
		L	**T**	**P/D**	**Internal**	**End Semester**		
EN19 701	Information Theory and Coding	3	1	0	50	100	3	4
EC19 702	Digital System Design	3	1	0	50	100	3	4
EC19 703	Microwave Theory and Techniques	3	1	0	50	100	3	3
EC19 704	Optical Communication	3	1	0	50	100	3	3
EC19 705	Program Elective III	3	1	0	50	100	3	3
EC19 706(P)	VLSI Design Lab	0	0	3	50	100	3	1
EC19 707(P)	Advanced Communication Lab	0	0	3	50	100	3	1
EC19 708(P)	Project Phase 1	0	0	4	100	-	-	3
IP19 709(P)	Internship *	0	0	0	100	-	-	1
	TOTAL	**15**	**5**	**10**	**550**	**700**		**23**
		30/30						

***Report submission of Internship should be done during the break of semester- 6**

Program Elective III	
EC19 705(A)	Adaptive Signal Processing
EC19 705(B)	Speech and Audio Processing
EC19 705(C)	Bio-Medical Electronics
EC19 705(D)	Opto-Electronic Devices
EC19 705(E)	Introduction To MEMS
EC19 705(F)	Error Control Codes

NOTE:

1. PROJECT PHASE I:

A Project topic must be selected either from research literature or the students themselves may propose suitable topics in consultation with their guides. The guides may encourage socially relevant project which can be interdisciplinary in nature.

Faculty members and students can interact with members of the local body, practicing engineers, industry and research institutions, to identify the issues which are predominant in that area/state and needs immediate attention. Such issues may be categorized and converted into a research problem so that they can study the feasibility of doing a research project in that area. This method of addressing the problems of society will enhance the culture and social concern of the students. This initiative can produce engineers with social commitment.

The objective of project work is to enable the student to take up investigative study in the broad field which can be of interdisciplinary in nature, either fully theoretical/simulation/practical or involving both theoretical and practical work. The department can assign a group of four students, under the guidance of a faculty to do the project work. Thus the assigned faculty can constantly interact with these students and mentor them properly to gain confidence in taking up a research work and supporting them for making it a reality. This initiative is expected to provide a good base for the student(s) in taking up a research & development project.

Faculty themselves or along with students in the Institutions/departments can apply for project grants with research organizations like Kerala State Council for Science Technology and Environment (KSCSTE), Department of Science & Technology (DST) for doing projects. Faculty/students can also approach Agricultural, Veterinary, Fisheries, and Health Sciences Universities for doing projects in a variety of fields where they require technical support from the engineering sector. These types of funded research projects will improve the creativity and outlook of the students which will be beneficial to the society.

The assignment to normally include:

- Survey and study of published literature on the assigned topic;
- Preparing an Action Plan for conducting the investigation, including team work;
- Working out a preliminary Approach to the Problem relating to the assigned topic;
- Block level design documentation
- Conducting preliminary Analysis/ Modeling/ Simulation/ Experiment/ Design/ Feasibility.
- Preparing a Written Report on the Study conducted for presentation to the department.
- Final seminar, as oral presentation before the evaluation committee.

Total marks: 100, minimum marks required to get a pass is 50, Mark distribution is as follows

Project Guide	: 30
Interim evaluation by the evaluation committee	: 20
Final presentation	: 30
Report evaluation by the evaluation committee	: 20

2. INTERNSHIP

Students need to undergo a minimum of 10-15 days internship in an Industry/Firm associated with rural technology and agriculture/Rural village to observe, identify and give suggestions to the problems related to electronics and communication or allied engineering sector in the society. The Internship should give exposure to the practical aspects of the electronics and allied engineering discipline. In addition, the student may also work on a specified task or project which may be assigned to him/her. The students will have an opportunity to develop observational skills, develop confidence to identify and understand the issues related with electronic and communication devices/systems and come up with solutions to rectify the same. This motive of the programme is ultimately focused on the mutual benefit to the students, industry and society. The outcome of the internship should be presented in the form of a report.

Total marks: 100, minimum marks required to pass the internship is 50, split-up of the marks are as follows

Attendance	: 10
Project Guide	: 20
Technical Content of the Report	: 30
Presentation	: 40

SCHEME OF VIII SEMESTER B.Tech COURSE								
Subject Code	**Subject Name**	**Hours/Week**			**Marks**		**Duration of Semester End examination**	**Credits**
		L	**T**	**P/D**	**Internal**	**End Semester**		
EN19 801	Image and Video Processing	3	1	0	50	100	3	4
EC19 802	Wireless Mobile Communication	3	1	0	50	100	3	3
EC19 803	Program Elective IV	3	1	0	50	100	3	3
EC19 804	Program Elective V	3	1	0	50	100	3	3
EC19 805(P)	Seminar	0	0	6	100	-	-	2
EC19 806(P)	Project Phase II	0	0	8	100	-	-	6
EC19 807(P)	Viva Voce	0	0	0	-	100	-	3
	TOTAL	**12**	**4**	**14**	**400**	**500**		**24**
		30/30						

Program Elective IV		**Program Elective V**	
EC19 803(A)	Computer Vision	EC19 804(A)	Wireless Sensor Networks
EC19 803(B)	Nano Electronics	EC19 804(B)	CMOS Design
EC19 803(C)	High Speed Electronics	EC19 804(C)	Wavelets
EC19 803(D)	Biomedical Signal Processing	EC19 804(D)	Cryptography and Network Security
EC19 803(E)	Pattern Recognition	EC19 804(E)	Artificial Intelligence & Machine Learning
EC19 803(F)	Quantum Computing	EC19 804(F)	Organic Electronics

NOTE:

1. SEMINAR

To encourage and motivate the students to read and collect recent and reliable information from their area of interest confined to the relevant discipline from technical publications including peer reviewed journals, conference, books, project reports etc., prepare a report based on a central theme and present it before a peer audience. A faculty member can guide maximum of five students of his/her area of interest to have better interaction and creative support in guiding the seminar. Each student shall present the seminar for about 20 minutes duration on the selected topic. The report and the presentation shall be evaluated by a team of internal members comprising three senior faculty members based on style of presentation, technical content, adequacy of references, depth of knowledge and overall quality of the report.

Total marks: 100, minimum marks required to pass the seminar is 50, split-up of the marks are as follows

Attendance	: 10
Project Guide	: 20
Technical Content of the Report	: 30
Presentation	: 40

2. PROJECT PHASE II:

The objective of project work II & dissertation is to enable the students to extend further the investigative study taken up in Project Phase I. This work can be either fully theoretical/practical or involving both theoretical and practical work, socially relevant initiatives (work from local body/village) funded project from a research organization. The project is under the guidance of a faculty (project Guide) from the Department alone or jointly with a Supervisor drawn from R&D laboratory/Industry. This project work is expected to provide a good overall training for the students in research and development, execution of a theory into practical by facing the challenges with confidence by developing technical leadership. The assigned project work is normally evaluated based on the following points:

- Depth of knowledge in the topic assigned/work executed based on the report prepared under PhaseI;
- Review and finalization of the approach to the identified problem relating to the assigned topic/work.
- Detailed Analysis/ Modeling/ Simulation/ Design/ Problem Solving/ Experiment as needed.
- Final development of product/process, testing, results, conclusions and future directions.
- Preparation of a paper for Conference presentation/Publication in Journals, if available.
- Preparation of a Dissertation in the standard format for evaluation by the Department.
- Final Presentation before a Committee.

Total marks: 100, minimum marks required to pass 50

Project Guide	: 30
Interim evaluation, by the evaluation committee	: 20
Quality of the report evaluated by the above committee	: 20
Final evaluation by a three-member faculty committee	: 30

Activities that a student can engage in and the maximum quantum of points that can be earned from them are listed below.

i) National Level Activities			
Code	**Name of activity**	**Max. Activity Points**	**Minimum Duration**
NA1	N S O	70	Two Semesters
NA2	N C C	70	Two Semesters
NA3	N S S	70	Two Semesters
ii) College Level Activities			
CA1	Active Member/Office bearer of Professional Societies (Student Chapters)	30/40	Four Semesters
CA2	Elected Office bearer of Student forums	30	Two semesters
CA3	Member/Captain- College Athletic/ Games teams	20/30	Two Semesters
CA3	Executive Member of Student Clubs	20	Two Semesters
CA4	Volunteer for important College functions	20	Two Semesters
CA5	Committee member/ Organizer of Tech Fest/ Cultural Fest/ Conference	20/30	Two Semesters
CA6	Placed within top three in Paper presentation/debate/ cultural competitions etc	30	
CA7	Placed within top three in State level Sports/Games	30	
Additional 20 points to be given for CA3/CA7 if the achievement is at the national level.			
iii) Entrepreneurship			
EA1	Any Creative Project execution	40	
EA2	Awards for Projects	60	
EA3	Initiation of Start-ups	60	
EA4	Attracted Venture Capital	80	

EA5	Filed a Patent	80	
EA6	Completed Prototype Development	80	
iv) Self Initiatives			
SA1	Attend a National Conference	20	
SA2	Attend an Int. National Conference	30	
SA3	Published/got an Award for a technical paper.	30/40	
SA4	Organizer of student technical Conf/Competition	30	
SA5	Foreign language skills	50	
SA6	Webinar related to the Engineering/Management/Social science (Max of Ten)	2	
SA7	Online courses taken & completed	Maximum 50	10 weeks

ACTIVITY POINTS: -

The Tutor, HOD and Principal must ensure that the students' have acquired the required mandatory activity points (50 points) by the end of 4th and 8th semesters respectively. The accumulated activity points of all students must be consolidated and entered in to the university portal by the college officials upon completion of the 4th semester (50 points) and the 8th semester (50 points) before the commencement of the respective University examinations.