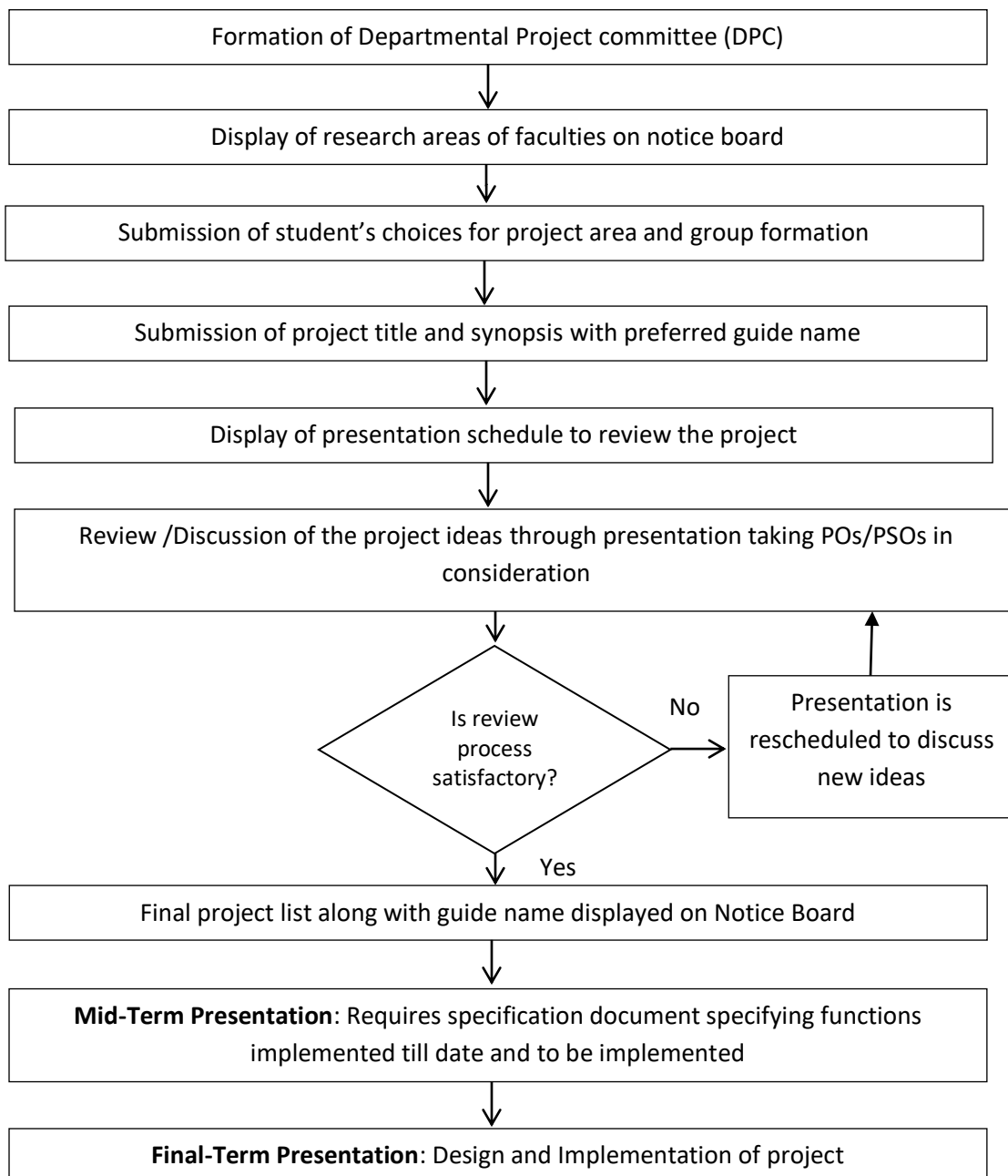


# ELECTRONICS AND COMMUNICATION ENGINEERING

## Quality of Student Projects

### A. Identification of Projects and Allocation methodology to Faculty Members

The Entire process related to allotment of projects, continues monitoring and evaluation followed is described as:



- A Departmental project committee (DPC) headed by Project Coordinator is appointed by the Head of the department who is responsible for planning, scheduling and execution of all the activities related to the student's project work.
- DPC advises the faculty members & students (individually or group) to give their area of interest for project work keeping in mind few of the attributes such as:-
  - a) Environment
  - b) Application (usefulness to society)
  - c) Safety
  - d) Ethics
  - e) Cost
  - f) Innovation
- Specific research area of all faculty members is taken keeping in mind the key domain area of the department and displayed on notice board.
- Students are advised to form their groups (2 to 4 students) through mutual consent and get registered with the DPC before a particular date.
- DPC will decide the group size in some special cases and recommended to HOD for approval.
- Students in group are informed to submit project title along with preferred project guide name before a particular date.
- Presentation schedule is displayed on notice board.
- The submitted project titles along with project guide name are reviewed by DPC. If found suitable, final project list along with guide name displayed on notice board otherwise students are instructed to change the project idea.
- Mid-term and final term presentation specifying the progress and final design is arranged to evaluate the projects.

#### **A. Types and Relevance of the Projects and their contribution towards attainment of POs/PSOs.**

- Projects developed by students are based on new technological advancements and industrial application based, which helps in POs/PSOs attainment.
- Much attention is paid to ensure that the projects are innovative and can be further enhanced to suit a number of more applications.
- Major Projects undertaken by students are based on following Research Areas:
  - Wireless Technologies

- VLSI and Image/Speech Processing
- Robotics and Embedded System
- Application Specific

**Project Types with Relevance**

S. No.	Project Types	Relevance
P1	Wireless Technologies	To understand and implement different wireless technologies for different applications.
P2	VLSI and Image/Speech Processing	To design the algorithms used in VLSI field, video, image and speech processing for application development.
P3	Robotics and Embedded System	To get knowledge about the use of various types of microprocessors and microcontroller for different applications.
P4	Application Specific	To widen the knowledge in developing systems having specific application for society and industry based on various technologies.

- Projects are categorized in three levels: Excellent, good and average on the basis of project evaluation and patentability.
  - Excellent >90% marks
  - Good >75% -90%marks
  - Average 60% - 75% marks
  - Below Average <60% Marks

### Details of Major Projects Completed in academic year 2020-21

Sr. No.	Title of the Project	Research Area	Relevance to POs	Relevance to PSOs	Skill Development	Category
1.	Falcon 9 Space Rocket	Robotics & Embedded System	1,3,4,5,6,7,9 , 11,12	2	Knowledge of developing an android app	Excellent
2.	Wheel Chair Electric add on	Robotics and Embedded system	1,3,4,5,6,7,9 ,10,11,12	1,2	Knowledge of Microcontroller and its applications	Excellent
3.	IOT Based Water Monitoring	Wireless Technologies	1,3,5,6,9,11, 12	1,2	Knowledge of IOT and Wireless Technology	Excellent
4.	Smart Jacket for civilians	Application Specific	1,2,3,5,6,9,1 0,11,12	1,2	Knowledge of developing Automated systems	Excellent
5.	Cipher	Robotics and Embedded system	1,3,4,5,6,7,9 ,10,11,12	1,2	Knowledge of Microcontroller and its applications	Excellent
6.	Gas Leakage detector	Robotics and Embedded system	1,3,4,5,6,7,9 ,10,11,12	1,2	Knowledge of Microcontroller and its applications	Good
7.	Anti corona lost wrist Band	Robotics and Embedded system	1,3,4,5,6,7,9 ,10,11,12	1,2	Knowledge of Microcontroller and its applications	Good
8.	Digitally Controlled Home automation	Wireless Technologies	1,3,5,6,9,1 1,12	1,2	Knowledge of IOT and Wireless Technology	Good
9.	Smart Defense System for Forest Protection	Wireless Technologies and Embedded system	1,3,4,5,6,7,9 ,10,11,12	1,2	Knowledge of GSM & Wireless technology	Good

10.	Autonomous Mending System	Robotics and Embedded system	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Good
11.	Speech Enhancement Techniques	VLSI and Image/Speech Processing	1,3,4,5,6,7,9,11,12	2	Knowledge of Speech Processing	Average
12.	Automatic Railway Crossing	Robotics and Embedded system	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Average
13.	Water Conservation & Diversion System	Wireless Technologies	1,3,5,6,9,11,12	1,2	Knowledge of IOT and Wireless Technology	Average
14.	Pick & Place Robot	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Average
15.	Gas & Motion Detector	Robotics and Embedded system	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Average

### Details of Major Projects Completed in academic year 2019-20

Sr. No.	Title of the Project	Research Area	Relevance to POs	Relevance to PSOs	Skill Development	Category
1	Speech recognition based door opening of refrigerator	Speech Processing / Embedded system	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and Speech Processing	Excellent
2	Pollution monitoring system	Robotics and Embedded system	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Excellent
3	Coronary glove	Robotics and Embedded system	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Excellent

4	Automatic Seat Locator	Robotics and Embedded system	1,2,3,5,6,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Excellent
5	Soundless horn	Wireless & Embedded	1,2,3,5,6,11	1,2	Knowledge of Wireless Technology	Excellent
6	Android control fighter tank	Robotics and Embedded system	1,3,5,6,9,11,12	1,2	Knowledge of Microcontroller and its applications	Good
7	Automated toll payment system	Wireless Technology	1,3,5,6,9,11,12	1,2	Knowledge of IOT and Wireless Technology	Good
8	Mine detector for army surveillance	Robotics and Embedded system	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Good
9	Voice Controlled LED Notice Board	Wireless Technology /Robotics & Embedded System	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of IOT and Wireless Technology	Good
10	Rank display system	Robotics and Embedded system	1,2,3,5,6,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Good
11	GSM Based Home automation system & Electricity Theft system	Robotics and Embedded system	1,2,3,5,6,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Average
12	Immune Biomedical Android applications	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Average

13	Password & Finger print sensor Based Digital Code lock system using Arduino	Robotics and Embedded system	1,2,3,5,6,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Average
14	Blind Stick	Robotics and Embedded system	1,2,3,5,6,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Average
15	IOT Based Sewage Monitoring system	Robotics and Embedded system	1,2,3,5,6,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Average

#### Details of Major Projects Completed in academic year 2018-19 (Batch 2015-16)

Sr. No.	Title of the Project	Research Area	Relevance to POs	Relevance to PSOs	Skill Development	Category
1	Head Motion Controlled Wheel Chair	Robotics and Embedded System	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Excellent
2	Smart Mushroom Cultivation System	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Excellent
3	Farmer Relief System	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Excellent
4	RC Aircraft	Application Specific	1,3,5,6,9,10,11,12	1,2	Knowledge of developing smart systems	Excellent
5	Sahyog	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Excellent
6	Home Automation Over Cloud	Wireless Technology	1,3,5,6,9,11,12	1,2	Knowledge of IOT and Wireless Technology	Good

7	Air Pollution Drone	Application Specific	1,3,5,6,9,10,11,12	1,2	Knowledge of developing smart systems	Good
8	Automatic Patient Heart Rate Monitoring System	Wireless Technology	1,3,5,6,9,11,12	1,2	Knowledge of developing systems	Good
9	Soil moisture & ph sensor	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Good
10	Automatic Sun Tracking using Arduino	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Good
11	Home automation using Bluetooth and Arduino	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Average
12	GSM Based Temperature And Humidity Measurement Using Arduino	Wireless Technology	1,3,5,6,9,11,12	1,2	Develop the skills of GSM technology based project	Average
13	Wi-Fi automation	Wireless Technology	1,3,5,6,9,11,12	1,2	Knowledge of developing systems	Average
14	Smart Building System using IOT	Wireless Technology	1,3,5,6,9,11,12	1,2	Knowledge of developing systems	Average
15	GSM Based Home Security System	Wireless Technologies	1,3,5,6,9,11,12	2	Develop the skills of GSM and GPS based human tracking project and by programming the	Average



					microcontrollers	
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### Details of Major Projects Completed in academic year 2017-18 (Batch 2014-15)

Sr. No.	Title of the Project	Research Area	Relevance to POs	Relevance to PSOs	Skill Development	Category
1	Advanced Weather & Air Quality Management System	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Excellent
2	Quad-Copter	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Excellent
3	Electro -Tiles	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Excellent
4	Smart Crutches	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Excellent
5	Range Detection based on Ultrasonic Principle	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Excellent
6	ATM Crime Prevention System Using GSM	Wireless Technology	1,3,5,6,9,11,12	1,2	Knowledge of developing GSM systems	Excellent
7	IoT Based Health care Monitoring System	Wireless Technology	1,3,5,6,9,11,12	1,2	Knowledge of developing IOT systems	Good
8	IoT Based Universal Trap for Animals	Wireless Technology	1,3,5,6,9,11,12	1,2	Knowledge of developing IOT systems	Good

9	SOMPRO Controller	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Good
10	Solar Energy based Grass Cutter	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Good
11	LIFI Based Audio Transmission System	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Good
12	Automatic Room Light Controller with Visitor Counter and password Security	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Good
13	Advance Ticketing machine (ATM)	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Good
14	GSM Based Electricity Theft Alerting System	Wireless Technology	1,3,5,6,9,11,12	1,2	Knowledge of developing GSM systems	Average
15	Robotic Arm	Robotics and Embedded System	2,3,5,6,8,9,10,11,12	1	Develop the skills of integration of sensors, electronics components and microcontroller	Average
16	Home Automation System Using IR Sensors	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Average

17	Home Automation using IoT	Wireless Technology	1,3,5,6,9,11,12	1,2	Knowledge of developing IOT systems	Average
18	Remote Control Circuit for Home Appliances	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Average
19	A Security Device	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Average
20	Remote Control Circuit for Home Appliances	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Average

### Details of Major Projects Completed in academic year 2016-17

Sr. No.	Title of the Project	Research Area	Relevance to POs	Relevance to PSOs	Skill Development	Category
1	Head Movement controlled Robot	Robotics and Embedded System	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Excellent
2	Bank Locker Security System using Biometric and GSM system	Wireless Technologies	1,3,5,6,9,11,12	1,2	Knowledge of GSM based technology	Excellent
3	Medicine Reminder using real time clock based on embedded and GSM	Robotics and Embedded System	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Excellent

4	Hand Gesture Glove for Dumb people	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Excellent
5	Smart Garbage Collection system	Application Specific	1,3,5,6,9,10,11,12	1,2	Knowledge of developing smart systems	Excellent
6	Intelligent Eye Wrist Gear	Application Specific	1,3,5,6,9,10,11,12	1,2	Knowledge of developing smart systems	Excellent
7	Intelligent Cloth Stand with rain and Dryness Sensor	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Good
8	Accelerometer based hand Gesture controlled robot using arduino	Robotics and Embedded System	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Good
9	Solar Based Railway Gate control system using Microcontroller	Robotics and Embedded System	1,3,4,5,6,7,9,10,11,12	1,2	Knowledge of Microcontroller and its applications	Good
10	The Smart cart	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Good
11	Smart Cap	Application Specific	1,3,5,6,9,10,11,12	1,2	Knowledge of developing smart systems	Good

12	GSM based Notice Board Using Arduino Microcontroller	Wireless Technologies	1,3,5,6,9,11,12	1,2	Knowledge of GSM based technology	Good
13	Smart Home system	Application Specific	1,2,3,5,6,9,10,11,12	1,2	Knowledge of developing Automated systems	Average
14	Bluetooth Controlled Robot	Robotics and Embedded System	1,3,4,5,6,7,9,11,12	1,2	Knowledge about circuit designing using microcontroller / Embedded Systems	Average
15	GSM Based HOME Security System	Wireless Technologies	1,3,5,6,9,11,12	1,2	Knowledge of GSM based technology	Average
16	Bluetooth based Notice Board	Wireless Technologies	1,3,5,6,9,11,12	1,2	Designing using Wireless technologies	Average