Project Highlights

- Projects help students become better learners, better engineers and improve their innovative spirit. Industry-sponsored or collaborative projects provide an enormously valuable experience for students exploring varied career paths within any professions. This opportunity provides students to understand how to work in teams, to be self-starters and to see the business value of their work.
- Cummins College of Engineering, believes that this is a very good platform for innovators and team leaders where they can get a chance to set up a strategy for experimentation. The industry also gets a lot of new insights and ideas from the fresh minds of students.
- The final year projects provide students an opportunity to apply the technical knowledge learnt, their intellectual abilities and practical skills to solve complex, real, or close to real life engineering problems. While working on projects, students get good opportunities for the growth of their technical presentation, communication skills, team work, leadership, and organizational skills.
- There are two dimensions on which the projects are classified. One dimension is the origin of the problem statement and the second The second dimension is based on the various domains.

Types of projects based on origin of problem statement:

- **Industry related projects:**

  ❏ Some problem statements are based on industry related problems.

  ❏ These projects can be research problems, proof of concept projects, prototypes, and open ended problems.

  ❏ The open ended problems encourage students to define their own problems.

  ❏ After the project idea has been identified, the students spend a significant amount of time to elaborate and define the scope of the statement.

      ❏ Companies are approached by the coordinators. Students also approach companies on their own. Companies like IBM, PSL, Veritas, Intelliment ,Siemens, HCL, TATA ,DRDO and many more have sponsored projects.

Academic year	Percentage of Industry Sponsored Projects
2024-25	47%
2023-24	48%
2022-23	54%
2021-22	52%
2020-21	46%
2019-20	59%

● **Faculty initiated projects:**

❏ Every year, the department offers projects supported by the faculty members.

❏ These projects include faculty's research interest areas and projects in their domain of expertise.

❏ Some problem statements evolve after many initial discussions done by students and their guide from a common domain of interest.

❏ Faculty also defines a few problem statements based on the student's interest.

● **Self-defined problem statements:**

❏ Students themselves also come up with project statements that interest and inspire them, which are approved by the coordination committee.

❏ All project synopses are approved by the department level project coordinators.

❏ Problem statements are approved if they are complex, provide an opportunity to learn, are challenging and have sufficient scope for a year-long activity for the group.

Types of projects based on various domains/categories of domains:

- The projects are of different domains such as Data Mining, Artificial Intelligence, Image Processing, Embedded Systems, Cloud Computing, Security, Compilers, Machine Learning, IOT, Web applications and Mobile applications.

- Students also used latest framework, Tools and Technologies like angular JS, Django, Full stack, Keras, AWS, Ember, Flask, spring boot, Ruby on rails, Meteor, Vscode, Anaconda, Postman, Github, capybara, .Net, React Js, Hadoop, DevOps etc.

Opportunities Through Projects:

- Project provides an excellent opportunity for the students for various technical and non-technical skill developments during the project life cycle.
- Overall the project outcomes achieve higher cognitive levels. Project activity in general uniquely addresses almost all POs including higher level POs.
- The quality of projects can be determined as the projects are developed as per the company's quality standards and specifications.
- Some projects are live and are used by the company.
- Problem statements of some projects are given by IITB.
- While handling the research projects, students do exhaustive study of recently published work in journals and conferences.
- Through projects, students get opportunities to demonstrate their technical and soft skills to industry experts, academicians of renewed institutes, possibly leading to higher career studies, placements etc.Project competitions provide a platform for students to sharpen their technical knowledge, presentation skills and boost their confidence to reach higher goals.Students participate in various project competitions at intercollegiate, University and State levels. Student groups have also secured the first place and best project awards in various project competitions.The department encourages the students to participate in projects competitions and project based paper presentation competitions like national level competitions INNOVATION at CCEW and project competition by Computer Society of India (CSI), intercollegiate competitions like 'Concepts' by Pune Institute of Computer Technology Pune and Tech-Srujan , a state level competition , organized by the department since 2021-22.The selection of projects groups for these competitions and the awards won show the qualitative work done by the students. The students demonstrate their working projects / prototypes in these competitions.

- There are many advantages to presenting a paper. It brings students out of stage-fear and also improves their communication skills. Most important advantage of this is that it develops student's confidence and boosts their morale.Our students have published their work in

renowned journals and conferences.

- A patent is important because it can help safeguard student's inventions. Patents are given to any product, design or process that meets certain specifications according to its originality, practicality, suitability, and utility. Some of our students have filed patents for their work.
- The quality of the project deliverables is achieved by continuous monitoring mechanisms like fortnightly reporting, periodic discussions with guides and reviews.
- The in-house projects bring in the incremental development in the specific domain.
- The evolution of prototypes is the deliverables of the project.
- The deliverables of projects are in various forms like working prototypes or software modules, proof of concepts, reports on technology comparisons and performance comparisons.
- At the end of year, a working project is delivered.
- The feedback given by industry mentors after the completion of the industry related projects show that the mentors are happy with the project work done by the students.