# SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

# SCHOOL OF COMPUTING

# PROJECT 2023 – 2024

## 1. About the Final Year Project

The primary objective of including final-year projects in the course curriculum is to motivate students to apply their acquired knowledge and skills to practical use. These projects provide students with an opportunity to merge their intellectual abilities with practical skills to solve real-world engineering and business problems. By working on final-year projects, students can gain valuable experience in tackling real-world challenges, making it easier to transition into the professional world after graduation.

Final-year projects are designed to help students enhance their creative abilities by constructing a novel system from scratch. These projects also encourage students to improve their oral and written communication skills. At the same time, verbal skills develop throughout the project development process through one-on-one interactions and discussion sessions with their supervisors, written skills improve through detailed report writing. These reports play a critical role in the final evaluation of each student.

## 2. The objectives of final year projects

- To create a platform for students to demonstrate their practical competence.
- To encourage students to apply their subject knowledge gained in the degree course.
- To help students sharpen intellectual qualities like creative thinking, analytical abilities, teamwork, and communication skills.
- To Learn the responsible and professional ways of working
- To Practice a development-oriented approach to work
- To Create awareness of the social, cultural, global, and environmental responsibility as an engineer
- To grow more empathetic become systems thinkers, become explorers, and problem-solvers.
- To learn the professional way of project management.

## 3. The outcome of final-year projects

On successful completion of the course, students will be able to

- Develop the capability to acquire and apply fundamental principles of engineering
- Identify, formulate and model problems and find engineering solutions based on a systems approach
- Become updated with all the latest changes in the technological world
- Make deep connections between ideas
- Learn to take creative risks
- Be ready for the creative economy also engage in iterative thinking and divergent thinking

## 4. Curriculum -2018

1. Changes in both 2018 and 2021 Regulations of B.Tech, B.Tech - M.Tech Integrated curriculum in respect of Internship and Major Project Work

Resolved that in order to accommodate the interests of the students as well as meet the requirements of accreditation bodies, after much deliberations, it has been decided to effect the following changes in both 2018 and 2021 Regulations of B.Tech, B.Tech - M.Tech Integrated curriculum.

| Existing under Regulations 2018 | | | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 18xxP109L | Project | 0 | 0 | 20 | 10 |
| 18xxP110L | Semester Internship | | | | |

| Modified under Regulations 2018 | | | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 18xxP109L | Project | 0 | 0 | 20 | 10 |
| | (OR) | | | | |
| 18xxP111L | Project | 0 | 0 | 14 | 7 |
| 18xxP112L | Internship | 0 | 0 | 6 | 3 |

| Existing under Regulations 2021 | | | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 18xxP401L | Major Project | 0 | 0 | 20 | 10 |
| 18xxP402L | Internship | | | | |

| Modified under Regulations 2021 | | | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 21xxP401L | Major Project | 0 | 0 | 30 | 15 |
| | (OR) | | | | |
| 21xxP403L | Major Project | 0 | 0 | 20 | 10 |
| 21xxP404L | Internship | 0 | 0 | 10 | 5 |

Guidelines on the operational aspects for Project work and Internship will be modified suitably and shared to the stakeholders in due course.

The above shall come into effect from EVEN semester of 2022-2023 for both 2018 and 2021 regulations.

## 5. General Instructions

- Students must earn 10 credits in their 8th semester.
- Students can choose **18CSP109L – PROJECT (10 CREDITS)** course or **18CSP111L – Project (7 CREDITS) with 18CSP112L – Internship (3 Credits)** courses in their 8th semester.
- Students placed through SRM Placements with Internship offers can choose **18CSP111L – Project (7 CREDITS) with 18CSP112L – Internship** courses in their 8th semester.
- Student teams can choose their project supervisor.
- Minor projects may be extended to major projects according to the request of the project supervisor. Complex Projects that are fruitful to sustainable society can be extended to Major projects.
- Students can do their projects in teamwork.
- The project team should consist of a minimum of two students. In the case of complex projects, team size may be increased according to the supervisor's request.
- Projects should be aligned with one of the **sustainable development goals (SDGs**) which transform our world. The SDGs are described in the following figure 1.


**Figure 1. Sustainable Development Goals (SDGs)**

- Projects are periodically reviewed by the project panel and the progress should be recorded.
- During the reviews, Students should present and demonstrate their project and submit the required documents in a well-structured format**.**
- Projects must be visualized to the public audience through project expos. Project expos are organized from March – April 2024 by the project coordinators.
- Publication and patenting of the project work is mandatory.

## 6. Course Execution of 18CSP109L – PROJECT (10 CREDITS) / 18CSP111L – Project (7 CREDITS) Courses

**Students can do their projects in one of the following modes.**

1. Research Project
2. Product Development
3. Multidisciplinary Project

The project type and outcome of the project is described in the following figure 2

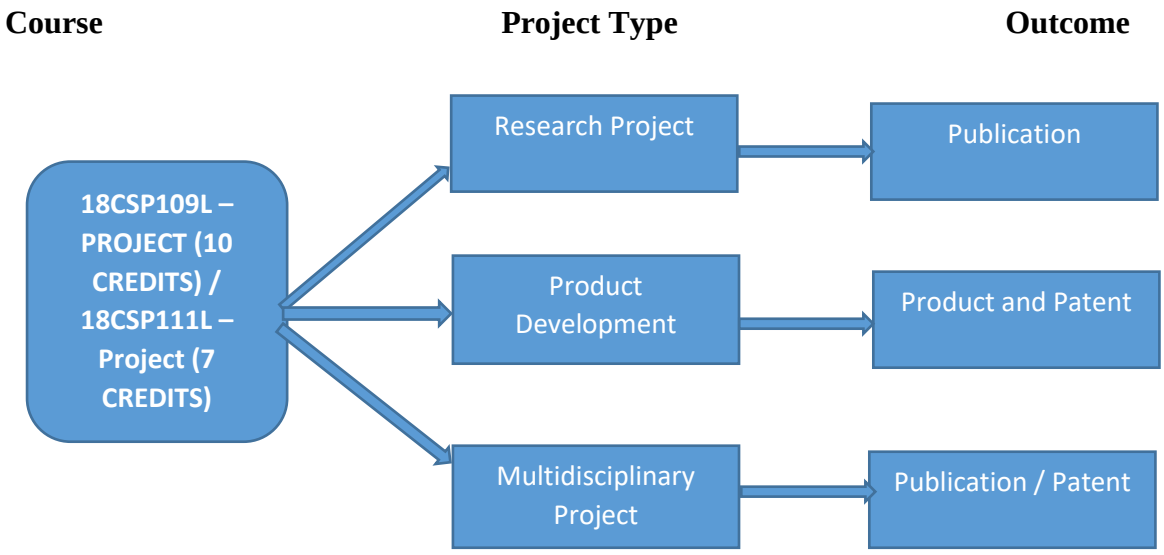



Figure 2. Project type and outcome

## *6.1 Research Project:*

**Research Project** means a discrete scientific endeavour to answer a research question or a set of research questions. A Research Project must describe a defined protocol, clearly articulated goal(s), methods and outputs, and a defined start and end date.

Students are expected to find out the research gaps through a robust literature survey and frame research objectives to provide robust technical solutions with proper result analysis. This research must be drafted as a technical paper and it should be published in referred journals. Publication is the responsibility of the research supervisor and student team.

***Evaluation of Research Projects***

Student's performance in the Project course is assessed by conducting reviews. The constituted expert panel will conduct reviews. Student's team will present their work completion status through Presentation with demos. The review panel will assess the project work based on the assessment rubrics and give guidance for the successful completion of the project. Four reviews will be conducted during the tenure of the project course such as Review 0, review1, review 2 and Review 3. Review 0 (Zeroth review) will be conducted at the end of 7$^{th}$ semester, It is only for project approval. During the review student team can present the following

- **Abstract**
- **Introduction to the project**
- **Objectives**
- **Proposed Architecture**
- **Proposed Modules.**
- **Plan of action (Timeline)**

## *6.2 Product Development*

Software Product development is creating a new product with added value and features. It can be anything from developing an entirely new product, upgrading an existing product, or improving the system's process, technique, or methodology. Software products can change the current market and give users a better customer experience. Development and innovation pave the path for new product innovations and benefit customers.

Students and supervisors together come up with their innovative ideas and frame strong problem statements, Product will be developed by following Agile (Scrum) Method and tools.

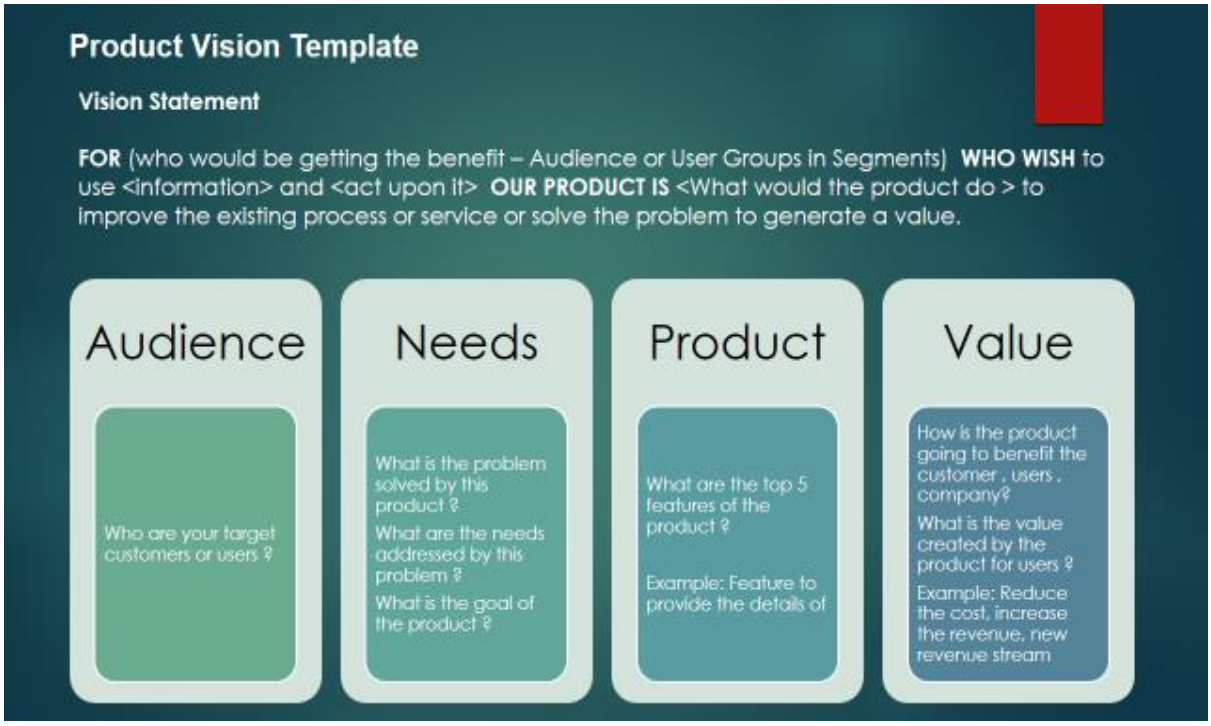
All the practices should be recorded using appropriate tools and visualized during the reviews. *Innovation* is the practical implementation of ideas that result in the introduction of new products or services or improvement in offering products or services. At the end of the project, Innovations should be patented. Patents should be commercialized by applying step by step process.

## *Evaluation of Product Development projects*

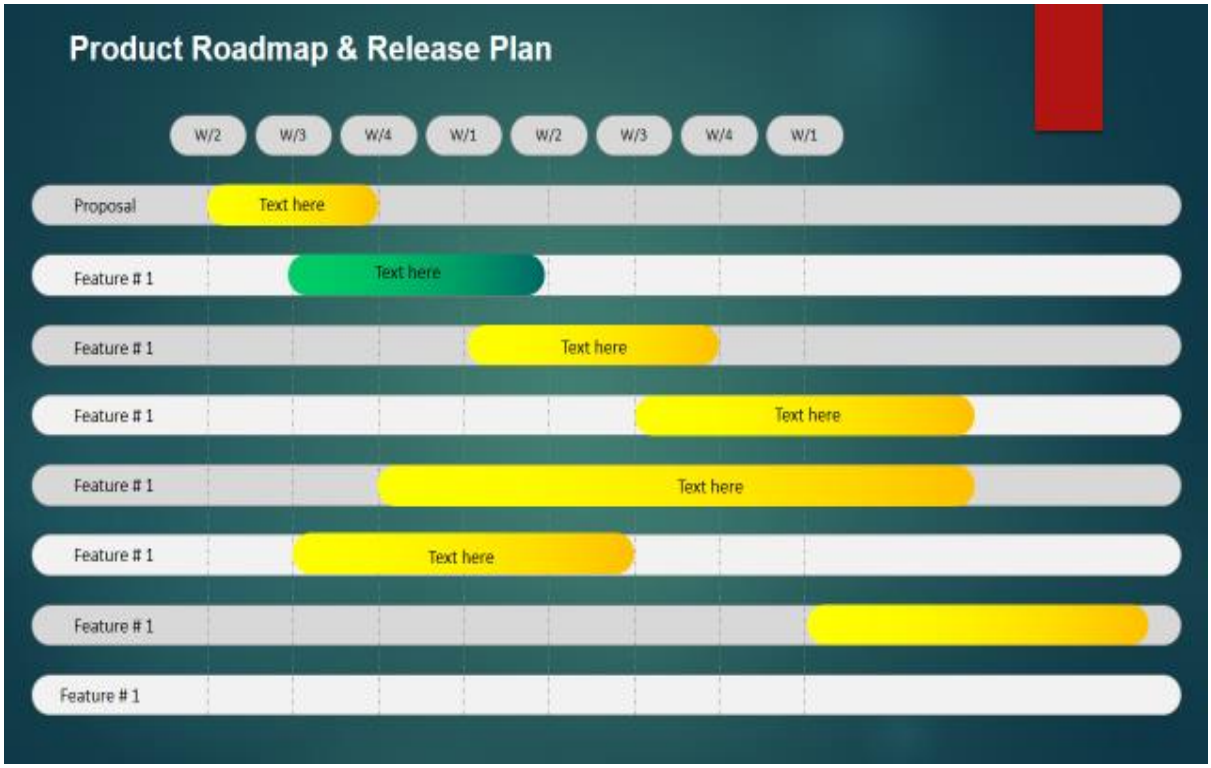
Student's performance is assessed by conducting Sprint reviews. Student's team will present their work Products (Artifacts) completion status through Presentation with demos. The review panel will assess the project work based on the assessment rubrics and give guidance for the successful completion of the project. Review 0 (Zeroth review) will be conducted at the end of 7$^{th}$ semester, It is only for project approval. During the review student team can present the following

- **Abstract**
- **Introduction to project**
- **Artifacts/ Work products**
  - **Product Vision**
  - **Product Roadmap**
  - **Create EPIC for All Sprints in Product Backlog**

**Template for Product Vision**




Template for Product Roadmap



Create EPIC for All Sprints in Product Backlog

| Category | ID | Description | Acceptance Criteria | Priority | Status | Assignee | Due Date | Original Estimate |
|---|---|---|---|---|---|---|---|---|
| **MMF / EPIC** | | | | | | | | |
| **User Story** | | | | | | | | |
| **Technical Task** | | | | | | | | |

## 6.3 *Multidisciplinary Project*

**Multidisciplinary Project** combines or involves more than one discipline or field of study. A Project that covers different disciplines are comes under a multidisciplinary Project. Students of different departments are expected to form a team and provide solutions to the problems raised in the real world. Information and Execution of multidisciplinary projects will be given from the DEAN CET office every year.

7. **Tentative Review Schedule for 18CSP109L-Project (10 Credits) / 18CSP111L- Project (7 Credits)**

| REVIEW NUMBER | DATES | WORK TO BE COMPLETED (Research Projects) | WORK TO BE COMPLETED (Agile Projects) |
|---|---|---|---|
| Project Review – 0 | 15 to 17 November 2023 | Abstract<br>Introduction to project<br>Objectives<br>Proposed Architecture<br>Proposed Modules.<br>Plan of action (Timeline) | Abstract<br>Introduction to project<br>Product Vision,<br>Product Road Map,<br>Create EPIC for All Sprints in Product Backlog |
| Project Review I | Jan 2024<br>Immediately after the enrolment | Implementation 30%,<br>Initial Report ( minimum 30 Pages) | Sprint I<br>Artefacts/Work products |
| Project Review II | Feb 2024 | Implementation 70%,<br>Rough Draft of Final Report,<br>Research Paper -Status | Sprint II<br>Artefacts/Work products |
| Project Review III | March 2024 | Implementation 100%,<br>Final Report, Publication process of Research Paper in Scopus Indexed Journal | Sprint III<br>Artefacts/Work products |
| Project Expo / Conference presentations and Publication work/ Project Report Submission | April 2024 | Project presentation in conferences, Publication and Report submission | Product Expo, Patenting |
| Project Viva Voce Examination | May 2024 | Final Presentation<br>Final Report submission<br>Paper Publication Proof<br>(External Evaluation) | Final Presentation<br>Final Report submission<br>Patent Proof<br>(External Evaluation) |

## 8. Course Execution of Internship (3 Credits) Course

An internship is a professional learning experience that offers meaningful, practical work related to a student's field of study or career interest. An internship gives a student the opportunity for career exploration and development and to learn new skills. The project supervisor will monitor the internship progress. Student's performance in the Internship course is assessed by conducting the review, and the constituted expert panel will conduct the review at the end of the 8th semester.

- The project supervisor will be the mentor of Internship students.
- An expert committee assesses the performance of internship students at the end of the 8th semester.