

**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY TIRUCHIRAPPALLI**  
**Faculty of Engineering and Technology**

**Minimum Standard Operating Procedures (SoP) for Project Work**

**Preamble**

A Project is an opportunity for the students to demonstrate career knowledge and showcase career readiness skills. The project focuses on addressing and solving real-world problems aligned with SDG to transform students be future-ready. The project work must integrate knowledge and concepts from academy experiences and skills such as self-awareness, critical thinking, problem-solving, communication, collaboration, research, time management, organization, and presenting. This Minimum SoP are applicable for students of all disciplines of Engineering and Technology across various semester.

The overall project schedule will be a guide for students and faculty through various stages of project development to ensure timely completion and adherence to academic and professional standards. It provides the main milestones, deliverables, and deadlines that would foster effective planning, coordination, and execution of tasks. In this schedule, participants will maintain a structured workflow, proactively address challenges, and achieve the intended learning outcomes.

**Project Category & Relevance to SDG**

- Map the proposed societal problem to relevant Sustainable Development Goals.
- Proposal should meet Sustainable Development Goals <https://sdgs.un.org/goals>
- Map the proposed solution/design/technology model to defined SDG Target Indicators. Justify how the defined problem mapped into SDG.

**Curriculum and Assessment:**

The Eligibility criteria for the Under Graduate students are to be followed as per the regulations of SRM Institute of Science and Technology and Syllabus for the respective curriculum. The total assessment marks shall be 100 there shall be 80% weightage for the project report and reviews and 20% for the Final presentation during the semester by the department project evaluation committee. The detailed rubrics presented in this document to be followed strictly both by the students and faculty members of the review committee. Head of the Department shall constitute the committee. The student shall make presentation on the progress made before the committee.

## Primary Components

A project has Three primary components and the assessment of each component is separate.

| Components                           | Descriptions   |
|--------------------------------------|--|
| <b>Research Paper</b>                | Research your choice of real-world issues directly related to your career field and select topics based on your interests.   |
|                                      | Secure a Project Guide to assist you through the research and project design.  |
|                                      | Research paper must be published in Scopus Indexed Journal paper   |
|                                      | Work involving Fundamental concepts and Interdisciplinary areas are welcome  |
| <b>Reviews</b>                       | Three Internal Review and One End-Sem External Review will be scheduled  |
|                                      | Students are advised to attend all the reviews compulsorily  |
|                                      | Refer the 'Review Guidelines' for further requirements and expectations from students during each review   |
|                                      | Review must be presented in Physical mode with a PPT presentations (10-15 slides)  |
|                                      | Presentation template to be followed strictly  |
| <b>Project Report / Dissertation</b> | Report must be prepared in LATEX format as per the template available in <a href="https://www.srmist.edu.in/students/latex-template-for-b-tech-m-tech-project-preparation-dissertation-thesis-report/">https://www.srmist.edu.in/students/latex-template-for-b-tech-m-tech-project-preparation-dissertation-thesis-report/</a> |
|                                      | Three copies of the soft binding of the report must be submitted during the end semester review  |
|                                      | One soft copy of the draft report to be submitted during 3 <sup>rd</sup> Review  |
|                                      | IEEE reference format must be followed for References section with Mendeley tool   |
|                                      |  |
| <b>Digital Footprint</b>             | The executable code along with readme file must be submitted in the GitHub repository  |
|                                      | Source of Dataset must be made available in open source data platforms like Kaggle, IEEE Dataport, etc.  |

Note 1: Each component receives individual grades.

Note 2: Read the Project Evaluation Rubric to review performance level expectations.

## Requirement Checklist for Project Components

| Components                           | √ | Requirements for Project Components   |
|--------------------------------------|---|---|
| <b>Research Paper</b>                |   | Minimum of 5-7 typed, double-spaced pages   |
|                                      |   | Font: 12-point, Courier New or Times New Roman, and 1-inch margins                        |
|                                      |   | IEEE style referencing  |
|                                      |   | Minimum of 30 references from the year 2022,2023,2024,2025                                |
|                                      |   | Reference page  |
|                                      |   | Substantiate claims and facts with references and quotations                              |
|                                      |   | No Plagiarism: Paper assigned a zero if plagiarism detected                               |
|                                      |   | Submitted on or before the deadline   |
|                                      |   | Verification and recommendation letter from the Project Guide                             |
|                                      |   | Journal Submission Proof  |
| <b>Reviews</b>                       |   | As per PPT Template   |
|                                      |   | Length: 10-15 minutes   |
|                                      |   | No. of Decks: 12-15   |
|                                      |   | Project review evaluation form (Annexure 1)   |
|                                      |   | Minutes of the Meeting with Guide (Annexure 2)  |
|                                      |   | Delivery practice with an audience  |
|                                      |   | Formal Dress code   |
|                                      |   | Equal participation of all the team members   |
|                                      |   | Print copy of the poster in A3 (for 3 <sup>rd</sup> and 4 <sup>th</sup> Review)           |
| <b>Project Report / Dissertation</b> |   | Latex format as per the SRMIST template   |
|                                      |   | Guide approval letter for the content, formatting, alignment                              |
|                                      |   | Draft copy of the report (for 3 <sup>rd</sup> Review)                                     |
|                                      |   | Three copies of the report (for 4 <sup>th</sup> Review)                                   |
|                                      |   | Confirmation from the Librarian for submission of e-copy of the Report and Research paper |
|                                      |   | Turnitin plagiarism report with approval of the Guide                                     |

## Preparing Project Proposal

Project proposal is a 1-2-page, typed overview that describes your intentions to conduct research on a real-world topic related to your career field and your considerations for designing an associated product.

### Content of Proposal

Use the following questions and prompts to develop your proposal essay for the research topic and product. Guide

Students should submit this proposal along with Guide Approval (as per Annexure) to begin the project work. Students must receive a formal acceptance and approval before beginning your project work.

**Use the following prompts to complete the proposal:**

#### Overview

1. Describe your academy career theme.
2. Explain your future career interests in this field. If none, what are your career goals for the future?
3. Do you have plans to further your development in your future career field?

#### Purpose & Rationale

4. Write an expository thesis statement related to your research topic, including a real-world issue from your career field with a possible solution. Align the proposal statement to Sustainable Development Goals.
5. Explain why this issue challenges you and why it is crucial to research this topic.
6. Have you conducted any work in this proposed area of research?

#### Content

7. Describe the features of the project, performance, demonstration, or service that complements your research.
8. How is the project directly related to the topic of the research paper for submission to a journal?
9. What is the anticipated cost of the product?

#### Relevance & Creativity

10. What are the possible implications for using your research and product in your career field?
11. How do your product and solution benefit your designated industry or field?
12. How would you continue to extend the research and improve the design of the product?
13. Where or how do you find a guide? Identify the type of expertise needed to assist you in the design of your product?

#### Professionalism

14. Describe how you plan to conduct yourself throughout the project after reviewing the Project Professionalism & Ethics Guidelines (p. 11).
15. What types of assistance do you need to complete the project? Consider situations or issues with finances, time management for meeting deadlines, and difficulties with research, writing, and designing the product.



## Faculty member Scoring Rubric & Approval for Project Proposal

**Student Name:** \_\_\_\_\_ **Branch & Year:** \_\_\_\_\_

**Proposed Project Topic:** \_\_\_\_\_

| Domain  | Points | √ | Proposal Declarations   |
|---|--------|---|---|
| <b>Overview<br/>10 Points</b>                         |        |   | Academy career theme  |
|   |        |   | Future career interest in the field. If none, career goals for the future |
|   |        |   | Plans for further development in a future career field                    |
| <b>Thesis Statement &amp; Rationale<br/>10 Points</b> |        |   | Real-world issue related to SDG   |
|   |        |   | Possible solution related to the career field                             |
|   |        |   | Interest in issue   |
|   |        |   | Importance of researching the topic                                       |
|   |        |   | Previous experience or knowledge in the field of study                    |
| <b>Content<br/>30 Points</b>                          |        |   | Features of project   |
|   |        |   | Comprehension about the project   |
|   |        |   | Clear Idea about the Goals and Objectives                                 |
| <b>Relevance &amp; Creativity 20 Points</b>           |        |   | Idea of Design Thinking   |
|   |        |   | Product and solution benefits to the users                                |
|   |        |   | Guide Selection and type of expertise                                     |
|   |        |   | Possibility of the extension of the project                               |
| <b>Professional Behavior 10 Points</b>                |        |   | Discipline and Attitude   |
|   |        |   | Outreach assistance for the project                                       |
|   |        |   | Ability to handle situations  |
| <b>Writing Conventions<br/>20 Points</b>              |        |   | Project proposal drafted well with clear SoP                              |
|   |        |   | Elaboration of Literature study   |
|   |        |   | Use of Technical language and vocabulary                                  |

### Student Statement

I confirm that the information in the Project Proposal is true and accurate.

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Guide Approval

**Approved / Rejected**

**Comments (if rejected):**

## **Suggestions and Expectations**

The project is by far the most important single piece of work in the degree programme. It provides the opportunity for you to demonstrate independence and originality, to plan and organize a large project over a long period, and to put into practice some of the techniques you have been taught throughout the course.

The students are advised to choose a project that involves a combination of sound background research, a solid implementation, or piece of theoretical work, and a thorough evaluation of the project's output in both absolute and relative terms.

**Interdisciplinary project proposals and innovative projects are encouraged and more appreciable.** A good tip is to try to think of the project as deliverable at reviews, rather than an effort to deliver a fully-functioning "product".

The very best projects invariably cover some new ground, e.g. by developing a complex application which does not already exist, or by enhancing some existing application or method to improve its functionality, performance etc.

Pure survey reports, with no supporting implementation or theory, are not acceptable.

Students are advised to decide on their team members (Max. 3 members per team) for their final semester project with their proposed title & project guide and to suggest it to the project committee with a brief abstract before the commencement of Zeroth review.

Project report to be prepared as per the guidelines and format given by SRM IST and available at <https://www.srmist.edu.in/students/latex-template-for-b-tech-m-tech-project-preparation-dissertation-thesis-report/>

Re-reviews can be planned only on medical grounds and personal emergency, with prior approval from the competent authorities. If the work of the candidate is found to be insufficient or plagiarized, the student has to repeat the project work in the next semester. The HoDs can form the project review committee with the approval of the Dean of the concerned School.

## **Students–Guides Meeting**

Students must make sure to have regular meetings with their respective guides either in online or offline mode. Online meetings must be recorded and shared to the Google drive link maintained by the project co-ordinators. Students should take notes during the meeting with their Guide and the minutes of the meetings to be recorded in the notebook regularly, which is to be endorsed by the project guide and student member(s). The project progress notebook is semi-formal and must be submitted to the review committee during the presentation.

## **Guides**

The Guides are advised to give projects and suggest project titles focusing more on the current field of research and ensure the level of innovation. Also guides are advised to check for the

formatting of the presentation and project report. Staff member cannot guide more than two projects in the academic schedule.

### **The Project Presentation and Demonstration**

One of the most important skills which the review team aims to assess is the students' ability to communicate your ideas and work. As part of the assessment students will be required to give a presentation and demonstration of your project to your Project Committee. Each presentation will be for 10 minutes (to be decided by the project committee at the initial stages and 20 for the final stages including a demonstration. Guides will help the students to structure the talk and will be willing to go through it with you beforehand. The presentation is also a compulsory component of the project. The project committee will not allocate a mark for a project unless there had been a formal presentation. The objective of the presentation is to find out exactly what students team have done.

### **Schedule (to be calculated from the first working day of the semester)**

|  |                   |
|--|-------------------|
| Submission of Project Proposal Form to proposed Guide    | : Within a week   |
| Submission of Guide approval letter                      | : Within 2 Weeks  |
| 0 <sup>th</sup> Review                                   | : Within 3 Weeks  |
| 1 <sup>st</sup> Review                                   | : Within 5 Weeks  |
| 2 <sup>nd</sup> Review                                   | : Within 8 Weeks  |
| 3 <sup>rd</sup> Review & Draft Research Paper submission | : Within 12 Weeks |
| 4 <sup>th</sup> (or) Final Review & Report Submission    | : Within 15 Weeks |

### **Review Committee Members:**

The project committee is advised to conduct the project reviews for the students of various programmes within the stipulated period and the review marks to be sent to the head of the department at the month end. The project committee is also advised to make necessary arrangements required (Seminar Hall availability and Projector, etc...) for the smooth conduct of reviews.

### **Guidelines for the Review Meetings:**

- The objective of the presentation is to find out exactly what students have done and to ensure that students to get an accurate mark that is consistent with other projects.
- All the **FIVE** reviews are compulsory
- Prescribed PPT Slide decks must be followed strictly
- The presentation should have minimum 12 and maximum 15 slides
- If the work of the candidate is found to be insufficient or plagiarized, the review committee & HOD will decide the further process on case-case basis.

- Regular meetings and discussions with the guide are essential and review forms must be submitted to the committee.
- The idea for the project may be a proposal from a member of staff or own, or perhaps a combination of the two.
- As part of the assessment, students will be required to give a presentation and demonstration of your project to the Project Committee.
- Guides will help students to structure presentations skills and will be willing to go through it with students beforehand.
- Publication of research article in SCOPUS indeed journal / conference is mandatory. Submission proof from the Editorial Manager or Journal Submission site must be submitted to the review committee during the 3<sup>rd</sup> review.
- Presentation will be for 10 minutes
- Progress on research paper should be presented from 1<sup>st</sup> to 4<sup>th</sup> reviews.
- Students who are undergoing Industry Internship, as a part of Placement Opportunity created through Institute placement directorate are alone permitted. Internship opportunity secured through other means are not encouraged.
- Students who are permitted for Industry Internships must follow all the review requirements after finding an Internal faculty member as Academic Guide from the Institute.

#### **Guidelines on Plagiarism and Digital Footprints:**

- Plagiarism should be avoided in both the draft and final versions of the project report and research paper
- Plagiarism reports from Turnitin for both the draft versions of the project report and research paper during the respective reviews.
- AI generated content plagiarism should be avoided and will be viewed seriously
- The students project work to be uploaded in the Institute's Digital repository available in GitHub and to be made available for forking by the Internal Students and Faculty members
- Violation of the guidelines on plagiarism will be dealt seriously.



### Undertaking for the Research Publication and Preparation for the Project Report

I am the parent/guardian of \_\_\_\_\_, in the SRM Institute of Science and Technology Tiruchirappalli. I am aware that the Project work is a performance-based assessment that is one of the requirements for the award of B.Tech. Degree from SRM Institute of Science and Technology and it makes up \_\_\_\_\_% of the academic course credits.

The project grade breakdown includes the following:

|                |  |
|----------------|--|
| Research Paper | = 40 % (Indexed in Scopus Database)                  |
| Reviews        | = 30 % (Five Reviews, including End Semester Review) |
| Report         | = 10 % (in LATEX format as per SRMIST template)      |
| Viva-Voce      | = 20 % (End Sem)                                     |

I acknowledge that any academic dishonesty, such as falsification or plagiarism results in a failing final grade (F) on the research paper or other project components.

I also aware that there will be additional costs involved for the preparation and printing of the report and publication costs of the research paper in Indexed Journals or Conferences.

My ward anticipates that the approximate cost of completing this project is Rs. \_\_\_\_\_ and I approve of this expense.

I am aware that I take full responsibility for the project's costs and any consequences resulting from this project topic.

My ward and I have reviewed and fully acknowledge all the Project requirements.

**Student's Signature** \_\_\_\_\_

**Parent's Signature** \_\_\_\_\_

**Date:**

## Expectations from Project Review(s):

| Review 0   | Review 1  | Review 2   |
|--|---|--|
| <ol style="list-style-type: none"> <li>Title</li> <li>Objectives of the work</li> <li>Introduction</li> <li>Literature Survey</li> <li>Identification of Gap in existing system</li> <li>Alignment with SDG</li> <li>Proposed System Modules Split-up and Gantt Chart</li> </ol> | <ol style="list-style-type: none"> <li>Title</li> <li>Objectives of the work</li> <li>Introduction</li> <li>Literature Survey</li> <li>Alignment with SDG</li> <li>Comparative Analysis of the Existing Works</li> <li>Identification of Gap in existing system</li> <li>Proposed System Modules Split-up and Gantt Chart</li> <li>Abstract</li> <li>Architectural Design for Proposed System</li> <li>Algorithms / Techniques used with complexity</li> <li>Dataset Preparation</li> <li>Setting up Development platform</li> <li>Expected outcomes</li> <li>30% of implementation</li> <li>References (2025, 2024 and 2023)</li> <li>Progress after previous review (Mandatory)</li> <li>Research Paper (Write up of Introduction and Related Works, References)</li> </ol> | <ol style="list-style-type: none"> <li>Title</li> <li>Objectives of the work</li> <li>Introduction</li> <li>Literature Survey</li> <li>Alignment with SDG</li> <li>Comparative Analysis of the Existing</li> <li>Identification of Gap in existing system</li> <li>Proposed System Modules Split-up and Gantt Chart</li> <li>Abstract</li> <li>Contribution(s) for this work</li> <li>Architectural Design for Proposed System</li> <li>Algorithms / Techniques used with complexity analysis</li> <li>Dataset Preparation</li> <li>Setting up Development platform</li> <li>Expected outcomes</li> <li>80% of implementation</li> <li>References (2025, 2024 and 2023)</li> <li>Progress after previous review (Mandatory)</li> <li>Research Paper (Introduction, Literature Review, References)</li> </ol> |

| <b>Review 3</b>  | <b>End Semester Review</b>   |
|--|--|
| <ol style="list-style-type: none"> <li>1. Title</li> <li>2. Object(s) of the work</li> <li>3. Introduction</li> <li>4. Literature Survey</li> <li>5. Alignment with SDG</li> <li>6. Comparative Analysis of the Existing</li> <li>7. Identification of Gap in existing system</li> <li>8. Proposed System Modules Split-up and Gantt Chart</li> <li>9. Abstract</li> <li>10. Novel Contributions</li> <li>11. Architectural Design for Proposed System</li> <li>12. Algorithms / Techniques used with complexity analysis</li> <li>13. Dataset Preparation</li> <li>14. Setting up Development platform</li> <li>15. Results and Discussion</li> <li>16. Ablation Study</li> <li>17. 100% of implementation and must be submitted to GitHub repo for public display</li> <li>18. References (2025, 2024 and 2023)</li> <li>19. Progress after previous review (Mandatory)</li> <li>20. Research Paper (Abstract, Introduction, Literature Review, Proposed Method and architecture diagram, Dataset description, Methodology, Expt. Results, References) + Plagiarism report in Turnitin</li> <li>21. Report Draft 1 version + Plagiarism report in Turnitin</li> <li>22. Submission status of research paper to Journal / Conference</li> </ol> | <ol style="list-style-type: none"> <li>1. Title</li> <li>2. Object(s) of the work</li> <li>3. Introduction</li> <li>4. Literature Survey</li> <li>5. Alignment with SDG</li> <li>6. Comparative Analysis of the Existing</li> <li>7. Identification of Gap in existing system</li> <li>8. Proposed System Modules Split-up and Gantt Chart</li> <li>9. Abstract</li> <li>10. Contribution(s) for this work</li> <li>11. Architectural Design for Proposed System</li> <li>12. Algorithms / Techniques used with complexity analysis</li> <li>13. Dataset Preparation</li> <li>14. Setting up Development platform</li> <li>15. Results and Discussion</li> <li>16. Performance Evaluation</li> <li>17. Ablation Study</li> <li>18. References (2025, 2024 and 2023)</li> <li>19. Progress after previous review (Mandatory)</li> <li>20. Research Paper (Introduction, Literature Review, Proposed Method and architecture diagram, Dataset description, Performance Metrics, Results and Discussion, Ablation Study, Conclusion, References) + Plagiarism report from Turnitin.</li> <li>21. Final Report in LATEX format and Submission + Plagiarism reports from Turnitin.</li> </ol> |

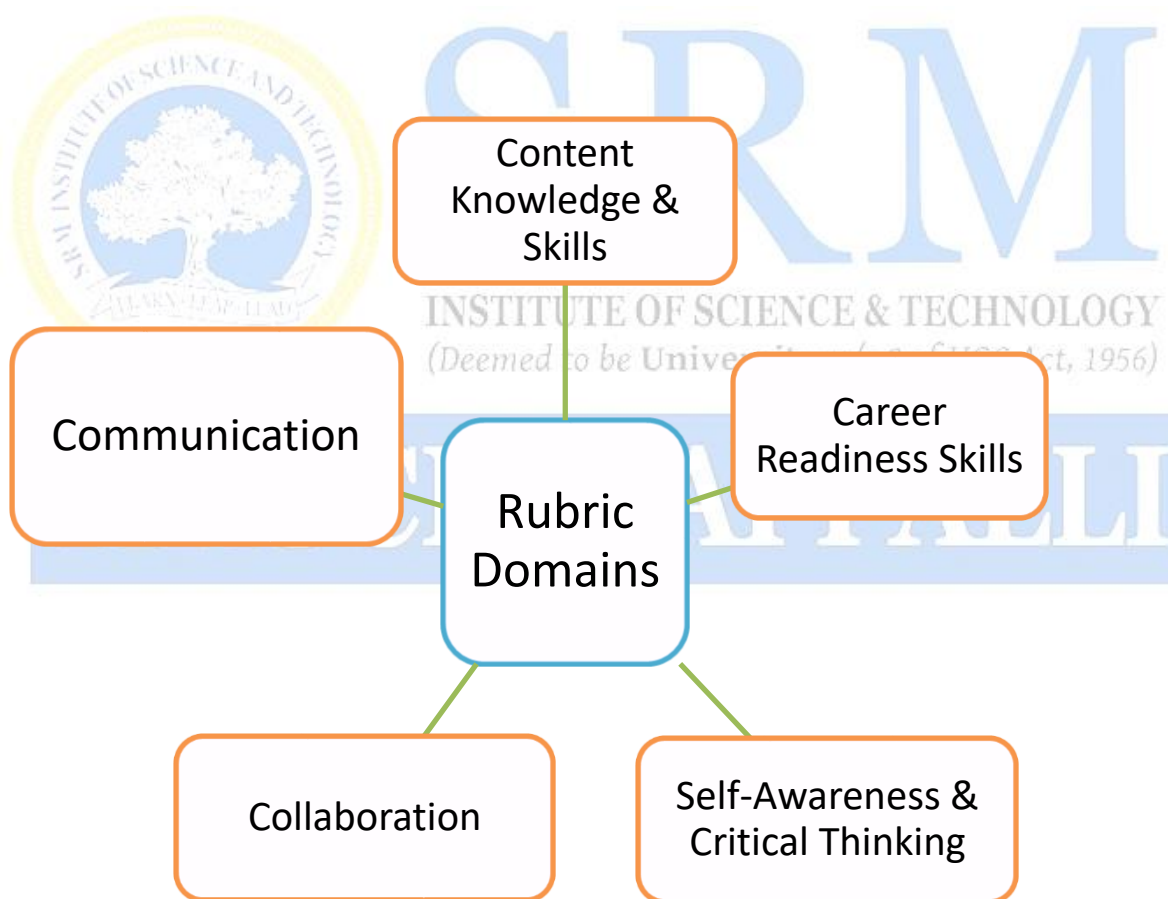
## PROJECT RUBRIC

The Project Rubric assesses the skills and content learned in the entire duration of the B.Tech. programme. The project is a performance-based assessment that serves to evaluate the students' achievement of the necessary college and career readiness skills required for a successful transition to professional education and future careers.

Faculty members use the Project Rubric to assess student' achievement of the following domains: Content Knowledge and Skills, Self-Awareness and Critical Thinking, Communication, Collaboration, and College and Career Readiness.

Rubric Domains:

Evidence of student's performance determines the extent to which the student participated in the development and completion of the project.





## Description of Rubric Domains

### Content Knowledge & Skills

Evidence of understanding the ideas, concepts, and skills covered in targeted learning objectives:

- Apply concepts in a logical and meaningful context to grasp the SDG-themed content knowledge and related skills.
- Demonstrate critical thinking skills by reimagining and creating original ideas to solve real-world issues related to the SDG.
- Locate, comprehend, and critically evaluate information and data from a variety of sources.
- Submit reflections to identify the project's primary concepts and substantiate the proper application of the Ideas through technical know-how.

### Critical Thinking

**Evidence of work samples or reflections that demonstrate how to:**

- Consider all possible solutions to a problem through online and field research.
- Make decisions after detailed examination and evaluation.
- Analyze how different parts of a project interact to influence the resulting product.
- Ask appropriate questions, and be willing to take new steps.
- Work independently and be resourceful, flexible, and adaptable.
- Be aware of abilities and performance and identify strengths and limitations of the project in the reflections.
- Provide recommendations to improve project quality.

### Communication

**Evidence of the ability to communicate with the workgroup and other members:**

- Use persuasive verbal, non-verbal, and written communication.
- Exhibit open-minded and active listening.
- Demonstrate the effective use of digital technologies for communication.

### Collaboration

**Evidence of capacity to collaborate:**

- Work successfully and respectfully with diverse individuals.
- Share accountability for group work and recognize the contributions of team members.
- Capable of compromise and demonstrate flexibility while working with team members.
- Use social networks and networking tools to support collaboration.

### Career Readiness

Evidence of career and industry readiness:

- Use Skills as a self-evaluation tool to complete a holistic determination of readiness.
- Reflect on the career readiness continuum to measure students' overall advancement throughout the academy and the project experiences

### Performance Levels: Descriptions

A five-point scale from 1-5 establishes student's performance level for each domain. Performance levels correlate with the following descriptions of expected student behaviors.

| Performance Levels                        | Description of Student Behaviors   |
|---|--|
| <b>5<br/>Exceptional<br/>Performance</b>  | Displays an advanced level of understanding of the ideas and concepts learned throughout the program of study aligned to the career cluster.   |
|   | Indicates an excellent ability to apply the concepts and ideas learned to solve a real-world problem related to the career cluster.  |
|   | Displays an exceptional capacity to reflect on the quality of the capstone project.  |
|   | Exhibits leadership skills and takes total responsibility for learning.  |
|   | Provides active and consistent contributions throughout all stages of the project.   |
|   | Shows minimal or no content, grammar, or presentation errors in the project work samples or reflections.   |
|   | Exceeds all expectations for the completion of the project.  |
| <b>4<br/>Satisfactory<br/>Performance</b> | Shows an overall understanding of the concepts and ideas learned throughout the program of study aligned to the career cluster.  |
|   | Indicates an acceptable ability to apply the concepts and ideas learned to solve a real-world problem related to the career cluster.   |
|   | Displays an overall capacity to reflect on the quality of the capstone project.  |
|   | <ul style="list-style-type: none"> <li>Assumes overall responsibility for own learning.</li> <li>Provides ongoing contributions throughout all stages of the project.</li> <li>Shows a few grammatical or presentation errors in project work or reflections.</li> <li>Meets most expectations for the completion of the project.</li> </ul> |
|   |  |
| <b>3<br/>Fair Performance</b>             | Shows a limited understanding of the concepts and ideas learned throughout the program of study aligned to the career cluster.   |
|   | Demonstrates a limited ability to apply the concepts and ideas learned to solve a real-world problem related to the career cluster.  |
|   | Displays difficulty in identifying the strengths and limitations of the capstone project.  |
|   | Takes limited responsibility for own learning and must be nudged to contribute during all stages of the project.   |
|   | Shows significant content, grammar, or presentation errors in project work or reflections.   |
| <b>2<br/>Marginal<br/>Performance</b>     | Does not meet the expectations for the completion of the project.  |
|   | Shows a minimal understanding of the concepts and ideas learned throughout the program of study aligned to the career cluster.   |
|   | Demonstrates minimal competency for applying the concepts and ideas learned to solve a real-world problem related to the career cluster.   |
|   | Shows no ability to identify the strengths and limitations of the capstone project.  |
|   | Shows a disregard for responsibility for own learning even after discussions of the issues.  |
|   | Demonstrates minimal or no contribution throughout all stages of the project.  |
|   | Displays significant content, grammatical, or presentation errors in project work or reflections.  |
| <b>1<br/>Inadequate<br/>Performance</b>   | Is significantly below the expectations for the completion of the project.   |
|   | Demonstrates the lack of submission of sufficient numbers of required work samples throughout the planning, implementation, production stages, and the final product.  |
|   | Does not provide enough documentation or reflections to evaluate contributions to the group throughout all the project stages.   |
|   | Offers insufficient evidence or documents for the scoring of a capstone project.   |

### Capstone Project Rubric Tool

| Capstone Project Rubric                   |   |   |  |  |   |
|---|---|---|--|--|---|
| Domains                                   | Performance Levels  |   |  |  |   |
|   | 5   | 4   | 3  | 2  | 1   |
| <b>D1. Content Knowledge &amp; Skills</b> | <p>Demonstrates an exceptional understanding of the main ideas, concepts, and skills covered in all targeted learning objectives with only minor errors in the breadth, depth, and interpretation accuracy.</p> <p>Demonstrates an excellent ability to apply the knowledge and skills covered in all targeted learning objectives with only minor errors in applying knowledge and skills.</p> | <p>Demonstrates an overall understanding of the main ideas, concepts, and skills covered in the targeted learning objectives with some gaps in the breadth, depth, and interpretation accuracy.</p> <p>Demonstrates an overall ability to apply the knowledge and skills covered in the targeted learning objectives, with some skills and knowledge lacking and used in incomplete ways.</p> | <p>Demonstrates a limited understanding of main ideas, concepts, and skills covered in the targeted learning objectives with substantial gaps in the breadth, depth, and interpretation accuracy.</p> <p>Demonstrates a limited ability to apply the knowledge and skills covered in the targeted learning objectives, with most of the skills and knowledge lacking and used in incomplete or inappropriate ways.</p> | <p>Demonstrates a minimal understanding of main ideas, concepts, and skills covered in the targeted learning objectives, displaying an invalid or incomplete representation of facts.</p> <p>Demonstrates minimal application of knowledge and skills covered in the targeted learning objectives, lacked competence regarding most or all skills and applied knowledge and used them in incomplete or inappropriate ways.</p> | <p>Submits an insufficient number of required documents to evaluate the understanding of main ideas, concepts, and skills covered in the targeted learning objectives.</p> <p>Submits an insufficient number of required documents to evaluate the ability to apply the knowledge and skills covered in the targeted learning objectives.</p> |
| <b>D2. Critical Thinking</b>              | Demonstrates an exceptional ability to reflect on self as a learner and the   | Demonstrates an overall ability to reflect on self as a learner and the   | Demonstrates a limited ability to reflect on self as a learner and the   | Demonstrates a slight or no ability to reflect on self as a learner and the project's quality  | Submits an insufficient number of required reflection sheets to evaluate the  |

|                          |   |   |  |  |  |
|--------------------------|---|---|--|--|--|
|                          | project's quality concerning targeted learning objectives by providing explicit and accurate statements of the strengths and limitations of work samples and the final project.   | project's quality concerning targeted learning objectives by providing a global summary of work samples' strengths and limitations and the final product.   | project's quality concerning targeted learning objectives by providing incomplete statements regarding the strengths and limitations of project assignments and the final product.   | concerning targeted learning objectives by providing inaccurate or no examples of the strengths and limitations of work samples and the final product.   | project's quality concerning targeted learning objectives  |
| <b>D3. Communication</b> | <p>Uses persuasive verbal, non-verbal, and written communication.</p> <p>Exhibits open-minded and active listening while interacting with a team of peers and support colleagues.</p> <p>Demonstrates the effective and regular use of digital technologies, and communication tools.</p> | <p>Articulates and presents ideas and information effectively both in verbal and written forms.</p> <p>Listens to overall concepts and observes non-verbal cues during team interactions.</p> <p>Demonstrates appropriate use of digital technologies, and communication tools.</p> | <p>Shows a limited grasp of the use of verbal and written communication.</p> <p>Listens to general instructions and may interact with the team.</p> <p>Demonstrates some use of digital technologies, and communication tools.</p> | <p>Demonstrates minimal or no ability to communicate verbally or in a written format.</p> <p>Displays a short attention span and limited listening skills while working with a team.</p> <p>Demonstrates a minimal use of digital technologies, and communication tools.</p> | <p>Demonstrates no ability to communicate in a written or verbal fashion.</p> <p>Does not listen or interact with the team.</p> <p>Demonstrates no use of digital technologies, and communication tools.</p> |
| <b>D4. Collaboration</b> | Works successfully and respectfully with diverse individuals while sharing  | Builds effective collaborative working relationships with the group while   | Demonstrates some collaboration with a team with limited contributions to the  | Demonstrates minimal or no contributions to the group work on the project.   | Demonstrates withdrawal from the group and refuses to  |



|                             |  |  |   |  |   |
|-----------------------------|--|--|---|--|---|
|                             | <p>accountability for group work and recognizes team members' contributions.</p> <p>Uses various social networks and networking tools to engage the group in activities and ensure meeting timelines throughout the project.</p> | <p>contributing to team efforts.</p> <p>Uses some social networks and networking tools to engage the group and support teamwork in various project components.</p> | <p>group work on the project.</p> <p>Uses social networks and networking tools to support collaboration in only some components of the project.</p> | <p>Uses social networks and networking tools only in responding to group outreach.</p> | <p>contribute to the team efforts.</p> <p>Does not use social networks and networking tools during the project.</p> |
| <b>D5. Career Readiness</b> | Demonstrates a high level of competency on Career Readiness Skills.  | Demonstrates competency on Career Readiness Skills.  | Demonstrates some competency on Career Readiness Skills.  | Shows a limited level of competency on Career Readiness Skills.                        | Reveals a lack of competency on Career Readiness Skills.  |

**TIRUCHIRAPPALLI**

**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY TIRUCHIRAPPALLI**  
**Faculty of Engineering & Technology**  
**School of \_\_\_\_\_**

**Project Title:**

| Project Team |              |               |           |
|--------------|--------------|---------------|-----------|
| Sl. No.      | Register No. | Students Name | Guided by |
| 1            |              |               |           |
| 2            |              |               |           |
| 3            |              |               |           |

| Rubric Domain | Evaluation Criteria                           | Team Members |   |   |
|---------------|---|--------------|---|---|
|               |   | 1            | 2 | 3 |
| D1            | Understanding background and topic            |              |   |   |
| D1            | Objectives of the work                        |              |   |   |
| D1            | Knowledge about the existing system           |              |   |   |
| D2            | Identification of Gap in existing system      |              |   |   |
| D2            | Alignment with SDG                            |              |   |   |
| D2            | Modules Identified with scope and limitations |              |   |   |
| D3            | Project Planning (Gantt Chart)                |              |   |   |
| D3            | References (2025, 2024 and 2023)              |              |   |   |
| D4            | Question and Answer                           |              |   |   |
| D5            | Presentation                                  |              |   |   |
|               | Total   |              |   |   |

**Expectations for Next Review / Comments:**

**Member 1**

**Member 2**

**Member 3**

**Guide**

**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY TIRUCHIRAPPALLI**  
**Faculty of Engineering & Technology**  
**School of \_\_\_\_\_**

**Project Title:**

| <b>Project Team</b> |                     |                      |                  |
|---------------------|---------------------|----------------------|------------------|
| <b>Sl. No.</b>      | <b>Register No.</b> | <b>Students Name</b> | <b>Guided by</b> |
| <b>1</b>            |                     |                      |                  |
| <b>2</b>            |                     |                      |                  |
| <b>3</b>            |                     |                      |                  |

| <b>Rubric Domain</b> | <b>Evaluation Criteria</b>  | <b>Team Members</b> |          |          |
|----------------------|---|---------------------|----------|----------|
|                      |   | <b>1</b>            | <b>2</b> | <b>3</b> |
| D2                   | Comparative Analysis of the Existing Works and Gap Identified           |                     |          |          |
| D1                   | Abstract  |                     |          |          |
| D1                   | Architectural Design for Proposed System                                |                     |          |          |
| D2                   | Algorithms / Techniques used with complexity                            |                     |          |          |
| D1                   | Dataset Preparation   |                     |          |          |
| D1                   | Expected outcomes   |                     |          |          |
| D1                   | 30% of implementation   |                     |          |          |
| D3                   | Research Paper (Write up of Introduction and Related Works, References) |                     |          |          |
| D4                   | Question and Answer   |                     |          |          |
| D5                   | Presentations   |                     |          |          |
|                      | Total   |                     |          |          |

**Expectations for Next Review / Comments:**

**Member 1**

**Member 2**

**Member 3**

**Guide**

**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY TIRUCHIRAPPALLI**  
**Faculty of Engineering & Technology**  
**School of \_\_\_\_\_**

**Project Title:**

| <b>Project Team</b> |                     |                      |                  |
|---------------------|---------------------|----------------------|------------------|
| <b>Sl. No.</b>      | <b>Register No.</b> | <b>Students Name</b> | <b>Guided by</b> |
| <b>1</b>            |                     |                      |                  |
| <b>2</b>            |                     |                      |                  |
| <b>3</b>            |                     |                      |                  |

| <b>Rubric Domain</b> | <b>Evaluation Criteria</b>   | <b>Team Members</b> |          |          |
|----------------------|--|---------------------|----------|----------|
|                      |  | <b>1</b>            | <b>2</b> | <b>3</b> |
| D2                   | Novel Contributions from the Identified Gap  |                     |          |          |
| D1                   | Abstract   |                     |          |          |
| D1                   | Refined Architectural Design for Proposed System   |                     |          |          |
| D2                   | Algorithms/Techniques used with complexity   |                     |          |          |
| D1                   | Dataset Preparation  |                     |          |          |
| D1                   | Setting up development platform  |                     |          |          |
| D1                   | 80% of implementation  |                     |          |          |
| D3                   | Research Paper (Write up of Introduction and Related Works, Methodology, Experimental Results, References) |                     |          |          |
| D4                   | Question and Answer  |                     |          |          |
| D5                   | Presentation   |                     |          |          |
|                      | Total  |                     |          |          |

**Expectations for Next Review / Comments:**

**Member 1**

**Member 2**

**Member 3**

**Guide**



**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY TIRUCHIRAPPALLI**  
**Faculty of Engineering and Technology**

School of \_\_\_\_\_

**Project Title:**

| Project Team  |   |               |              |   |   |
|---------------|---|---------------|--------------|---|---|
| Sl. No.       | Register No.  | Students Name | Guided by    |   |   |
| 1             |   |               |              |   |   |
| 2             |   |               |              |   |   |
| 3             |   |               |              |   |   |
| Rubric Domain | Evaluation Criteria   |               | Team Members |   |   |
|               |   |               | 1            | 2 | 3 |
| D1            | Mapping of Novel Contributions with Goal targets of the SDG mapped during 0 <sup>th</sup> Review                                      |               |              |   |   |
| D1            | Final Architectural Design (Refined)  |               |              |   |   |
| D2            | Algorithms / Techniques used with complexity Analysis (With PoC)  |               |              |   |   |
| D1            | 100% of implementation  |               |              |   |   |
| D1            | Experimental Results and Discussions  |               |              |   |   |
| D2            | Ablation Study  |               |              |   |   |
| D3            | Research Paper (Abstract, Introduction, Literature Review, Proposed Method and architecture diagram, Dataset description, References) |               |              |   |   |
| D3            | Report Draft 1 version  |               |              |   |   |
| D5            | Question and Answer   |               |              |   |   |
| D5            | Presentation  |               |              |   |   |
|               | Total   |               |              |   |   |

**Expectations for Next Review / Comments:**

**Member 1**

**Member 2**

**Member 3**

**Guide**

**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY TIRUCHIRAPPALLI**  
**Faculty of Engineering & Technology**  
**School of \_\_\_\_\_**

**Project Title:**

**Project Title:**

| Project Team  |  |               |           |   |
|---------------|--|---------------|-----------|---|
| Sl. No.       | Register No.   | Students Name | Guided by |   |
| 1             |  |               |           |   |
| 2             |  |               |           |   |
| 3             |  |               |           |   |
| Rubric Domain | Evaluation Criteria  | Team Members  |           |   |
|               |  | 1             | 2         | 3 |
| D1            | Definition of Objectives, Identification of Research Gaps                                      |               |           |   |
| D1            | Explanation to the Methodology   |               |           |   |
| D4            | Presentation of Experimental Results & Analysis – Submission to GitHub Repo is mandatory       |               |           |   |
| D5            | Acceptance Notification from Intl. Scopus Indexed Conference (or) Intl. Scopus Indexed Journal |               |           |   |
| D5            | Project Report submission (LATEX File and Print copy)  |               |           |   |
| D3            | PPT Presentation, Viva-voce  |               |           |   |
|               | Total  |               |           |   |

**Comments:**

**Guide**

**Examiner1**

**Examiner2**

## Student-Guide Contract

**Student Name:** \_\_\_\_\_ **Year & Branch:** \_\_\_\_\_

**Name & Designation of the Guide:** \_\_\_\_\_

A project requires the support of a guide who is a professional in the career field with the expertise to guide student through the project. Contact with guide regularly provides opportunities for new perspectives regarding industry standards and practices, current innovations, and knowledge about real-world issues in the career field.

| <b>Student-Guide Expectations &amp; Behaviors</b> |   |
|---|---|
| <b>Competencies</b>                               | <b>Expectations &amp; Behaviors</b>   |
| <b>Collaboration &amp; Teamwork</b>               | Work successfully and respectfully with diverse individuals.  |
|   | Share accountability for group work and recognize the contributions of team members   |
|   | Be capable of compromise and demonstrate flexibility while working with supervisors, clients, and team members                                |
|   | Be attentive during mentoring sessions and display professionalism and respectful behavior when receiving your guide's feedback and comments. |
|   | Use social networks and networking tools to support collaboration with the guide.   |
| <b>Communication &amp; Participation</b>          | Participate in group discussions by making eye contact in live sessions and keeping the camera on for virtual sessions.                       |
|   | Exhibit open-minded and active listening.   |
|   | Use persuasive verbal, non-verbal, and written communication.   |
|   | Demonstrate the effective use of communication tools, and digital technologies for communication with guides, and classmates.                 |
| <b>Initiative &amp; Self-Direction</b>            | Prepare for guide sessions by reviewing and becoming familiar with session discussion topics and completing all related assignments.          |
|   | Ask appropriate questions and willing to adjust and change direction.   |
|   | Work independently, be resourceful, flexible, and adapt to a variable guide schedule.   |
|   | Be aware of one's abilities and performance.  |
| <b>Professionalism &amp; Ethics</b>               | Be accountable for time management, appropriate communication, meeting schedules, and project deadlines.                                      |
|   | Show integrity by being honest, fair, equitable, and dignified.   |
|   | Seek a guide's guidance regarding professional values in the career field.  |

**Student Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Parent Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Guide Agreement Contract

### Guide Expectations:

- Assist students under guide-ship with professional and educational development.
- Provide advice and guidance throughout the various phases of the project experience.
- Stay engaged with the mentee from \_\_\_\_\_ to \_\_\_\_\_ (Month & year) with a minimum of 10-contact hours/week.

### Complete:

- Guide Agreement Contract
- Project Validation
- Report Verification
- Guide Students for submission of research article

### Sign:

- Guide/Student Contact Log

### Guide Service Agreement:

I agree to serve as a Project Guide to the student (Name, Year, Branch)

I will provide guidance and assist with his/her project research, product design, report verification, research paper submission and review presentation from \_\_\_\_\_ to \_\_\_\_\_ (\_\_\_\_year).

**Guide Signature**

**Date:**

### Parent Approval of Guide

#### Parent Acknowledgement:

I acknowledge that Dr./Prof. \_\_\_\_\_ is serving as a Project Guide for my daughter/son: \_\_\_\_\_.

I grant my permission for him/her to meet virtually or in person for a minimum of 10 hours/week. I am aware that these meetings will be scheduled at mutually agreeable times and take place virtually or at SRM IST, Tiruchirappalli.

**Parent/Guardian Signature**

**Date:**





## Research Paper Guidelines

A research paper requires an objective, an outline, research notes, methodology, experimental results, a rough draft, and a final draft. Review the recommendations of the guide, committee and resources for writing a persuasive research paper.

**Both Major/Minor project and Specialization Project works are advisable to be published in a Scopus indexed journal and the evidence of publication is mandatory for appearing in the final viva voce.**

| Focus             | Recommendations  |
|-------------------|--|
| Real-world Issues | Research your choice of real-world issues related to the career field or cluster.  |
| Interests         | Select the research topic/concept based on your interests.<br>Choose a subject in which you have little or no expertise so that the research is beyond your current knowledge level. |
| Approval          | Receive approval from the Guide for the research topic/concept.  |
| Guide             | Secure a guide who is preferably an expert or a professional in your career field.   |
| Collaboration     | Collaborate with your guide throughout the research and development of the paper.  |
| Feedback          | Solicit ongoing critique and evaluations from guide.   |
| Deadlines         | Meet all deadlines for the research paper.   |

### Research Topic Selection

Selecting a research topic is a process. Select a topic that is a challenging, real-world issue that can add value to field of study, build professional profile.

| Focus                 | Recommendations   |
|-----------------------|---|
| Topic                 | Select a research topic of high interest in a field that you are not an expert.   |
|                       | Pick topics/concepts that are both creative and intellectually challenging with potentially real-world applications and further development opportunities.                              |
|                       | Choose a topic that has available references and sources of research information.   |
| Active Research       | Generates many other new ideas for investigation and consideration.   |
| Narrow Research Field | Begin to refine and focus on the topic after reviewing several references to manage your research scope.  |
| Surveys/Interviews    | Conduct primary research to show originality and intellectual maturity.   |
| Data Collection       | Reflect on topics that allow the collection of qualitative data through personal interviews and surveys. Record quantitative data through scientific experiments or collection of data. |
| Product               | Consider a field of study that promotes creating a product, developing a skill, producing a performance, or offering a service.   |
| Support               | Involve project guide in your choice of research topics.  |