

Standard Operating Procedure (SOP) for the selected Mini and Major Projects from the academic year 2024-25

1. Purpose

This SOP outlines the procedures, responsibilities, and deliverables for successfully executing undergraduate (UG) level engineering mini and major projects. It ensures a standardized approach to planning, executing, and delivering the projects while meeting academic and industry requirements.

2. Scope

This document applies to all UG engineering students undertaking mini and major projects as part of their curriculum. It includes project selection, execution, documentation, and final submission.

3. Project Charter

A project charter formally authorizes the existence of a project and gives the project guide the authority to start it. The tentative project charter is given here for the reference.

PROJECT CHARTER					
Project Title	Manufacturing and impact study of hybrid Fiber Metal Laminate			Project Guide	Prof. O A Jarali
Project start date	15 July 2024	Project end date	20 February 2025	Project sponsor	Nil
Domain of the project:					
Mechanical Engineering					
Project Scope			Project Objectives		
The lightweight materials will be developed for the appropriate applications, i.e., aerospace, shipbuilding, and bullet trains.			1. Fabrication of the FML materials 2. Specimens preparation using non-traditional machining 3. Impact test to evaluate the toughness property		
Project Methodologies					
Selection of materials, Selection of composite manufacturing methods, Selection of precision cutting method to prepare the specimens, Impact testing.					
Risk and Issues			Limitations		
During the manufacturing of FML materials, safety measures should be taken, i.e., inhaling of epoxy is hazardous			FML Material is comparatively costly. Moreover, they need more access to machines for non-traditional machining.		
Stakeholders			Beneficiaries		
Students, Faculties, Universities, and industries			Students		
Budget and finance			Performance indicators (Expected outcomes)		

12000/-	This project seeks to enhance the understanding and utilization of these materials, driving innovative advancements in engineering and material science.
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Milestone Schedule

Milestone	Target completion date	Actual date
Material selection and purchasing	10 August 2024	16 August 2024
Fabrication of FML using hand layup method	10 October 2024	
Preparation of specimens	25 December 2024	
Mechanical testing of specimens	31 January 2025	

Project team		Approval/Review committee	
Project guide name	Prof. O A Jarali	Name of the sponsor	Nil
Name of the students	1. Sachin Kadvekar 2. Talha Surve 3. Nikhil Jadhav 4. AsfanBhairwalkar	Project co-ordinator	Dr. Vikas Khalkar
Name of the HOD	Dr. R. R. Kalamkar	Name of the Principal	Dr.Pramod B. Patil

4. Responsibilities

Role	Responsibilities
Project group leader	Coordinate activities, communicate with the advisor, and ensure timely delivery.
Project group members	Contribute to the project as per assigned roles and responsibilities.
Project guide	Provide guidance, evaluate progress, and offer technical expertise.

5. Procedure

Step I: Project Selection

- Identify areas of interest aligned with academic requirements.
- Conduct preliminary research.
- Discuss potential topics with the advisor.
- Finalize the project title and scope.

Step II: Planning

- Define objectives and deliverables.
- Allocate roles and responsibilities among team members.
- Develop a detailed timeline.
- Prepare a resource and budget plan.

Step III: Execution

- Follow the project timeline for implementation.
- Conduct periodic reviews with the advisor.

- Document progress and challenges encountered.

Step IV: Testing and Validation

- Test the project outcomes against predefined success criteria.
- Address discrepancies and improve performance.

Step V: Documentation and Submission

- Compile all documentation, including the final report, presentation, and supplementary materials.
- Submit deliverables to the advisor and examination panel.

6. Assessment and Evaluation

The project assessment should follow the syllabus guidelines. Proper Rubrics should be prepared for the evaluation of the project work.

7. Conclusion

This SOP provides a structured approach to ensure that UG engineering projects are executed efficiently and effectively. Adherence to this document will facilitate timely completion, compliance with academic standards, and enhanced learning outcomes.



Dean (R and D)
Dr. Vikas R Khalkar



Principal
Dr. Pramod M Patil