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JAYAWANT SHIKSHAN PRASARAK MANDAL's

RAJARSHI SHAHU COLLEGE OF ENGINEERING

RSCOE

An Empowered Autonomous Institute Affiliated to Savitribai Phule Pune University,
Approved by AICTE, Accredited by NBA (UG Programs),
Accredited by NAAC With "A" Grade. MHRD-NIRF Rank:151-200

GUIDELINES FOR PROJECT

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PREFACE:

Aim of the final year project to develop student's knowledge for solving technical problems through structure project research study in order to produce competent and sound engineers. The project is very important component for students by the following ways. It provides the students with the opportunity to design undertake or conduct an independent research or study related to their degree course. Upon completion of Final year project, student should be able to Identify and describe the problem and scope of project clearly, collect, analyze and present data into meaningful information using relevant tools, select, plan and execute a proper methodology in problem solving, work independently and ethically, present the results in written and oral format effectively and identify basic entrepreneurship skills in project management.

1. OBJECTIVES:

- Quality of the student's projects is consolidated outcomes of their four years of academic.
- The quality of student projects can often be seen as a direct reflection of both theory; practical and hands-on skills being developed by the students.
- Project work enhances problem-solving skills and develops the lifelong learning ability with core competency.
- As a part of the curriculum, the final year students have to carry out project work for one year.
- In project work, the students group undertakes specific problem in diversified domain and provide the model solution by applying the knowledge gained during the four years of graduation.
- Project work is carried out by a group of three-four students under the guidance of a faculty member.
- Various project work implementation phases are depicted in following Figure.

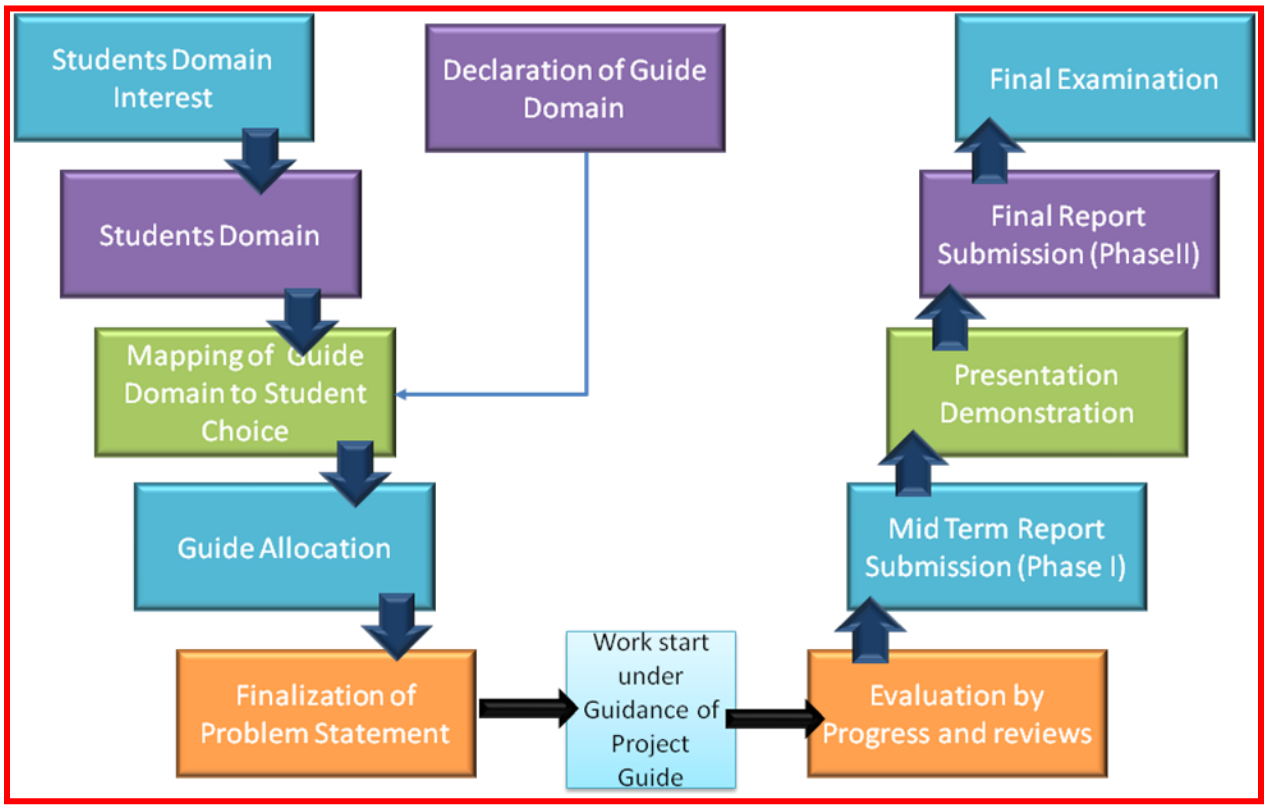

Figure 1: Project work implementation phases

2. IDENTIFICATION OF PROJECTS AND ALLOCATION METHODOLOGY TO FACULTY MEMBERS

- The project topic selection process starts in the third year second semester. It is suggested that students may select a topic as part of curriculum of Engineering Design and Innovation-II that becomes the foundation of their project work in the final year.
- Domain experts guide students in finalizing the Domain by conducting awareness session.
- Guide domain is mapped with the student's project domain.
- Topics from selected domains are submitted, and Engineering Design and Innovation (EDI) coordinator along with senior faculty members approve them.
- Finalized problem statement along with allocated guide list is displayed. Figure 2.2.3A depicts Projects Identification Process

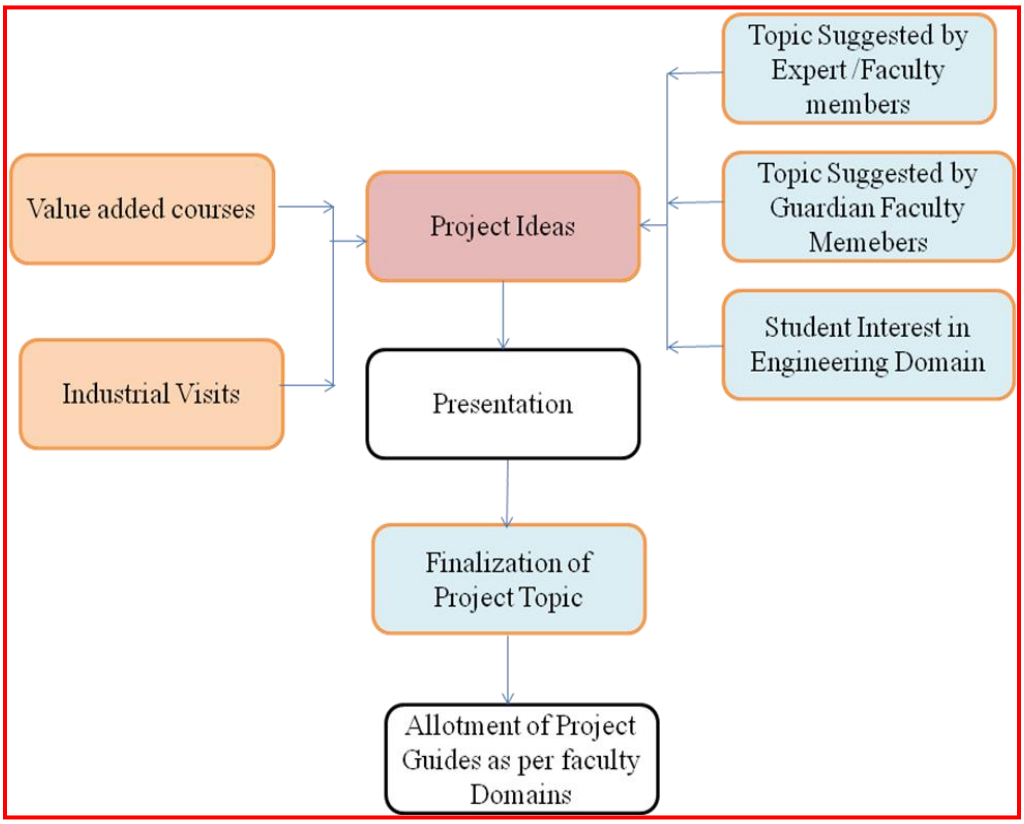

Figure: 2: Projects Identification Process

3. TYPES OF PROJECTS:

Based upon the functional area of the projects, projects may be categorized as follows:

- Application Oriented / Product development project
- Industry Specific/real life project
- Societal project
- Research based project

Problem statement is based on current trends or real-time problems based on societal issues. The students are encouraged to take up industry-sponsored projects. Project work enhances following skills of the students at large which helps to map POs and PSOs directly

- Technical skills
- Problem solving skills

- Design and development
- Modern tools usage
- Communication skills
- Project Management and finance
- Ethics
- Individual and team work
- Life-long learning

4. ASSESSMENT OF PROJECT:

Following rubrics may be used for assessment of the project work

Components	Key Performance Indicators (PO)	Relevance with Performance Criteria		
		Substantial (3)	Moderate (2)	Slight (1)
Core competency	Identification of problem or Definition of project (PO2)	Clear, concise and complete Identification of design goals and project objectives	Adequate Identification of problem; Any lack of specifics does not impair solution or design	Improper Identification of problem; Inadequately spelled out objectives
	Technical design (PO3, PO8)	Meets all specifications with efficient design	Meets nearly all specifications	Not designed taking into consideration minimum specifications
	Complexity of project/design (PO3, PO4)	Exceeds typical technical	Meets typical technical	partially meets technical

		complexity for project	complexity for project	complexity for project
Research	Innovative/creative aspects (PO3, PO12)	The project contains many significantly original, innovative, or creative aspect(s).	Project contains some original, innovative, or creative aspect(s).	It is not clear that the project is creative or innovative.
Modern Tools	Choice & use of resources (PO4, PO5)	Innovative use of resources	Appropriate resources used	Inadequate use of suggested resources.
Teamwork/ Leadership	division of responsibilities and individual efforts (PO8, PO9)	Proper division of responsibilities and individual efforts capitalized on strengths of each team member.	Adequate division of responsibilities and individual efforts capitalized on strengths of each team member.	Improper division of responsibilities and individual efforts capitalized on strengths of each team member.
Multidisciplinary approach	Project works linked to the multidisciplinary field (PO2, PO3)	The project work is clearly linked the multidisciplinary field	The project work is moderately linked the multidisciplinary field	The project work is partially linked the multidisciplinary field
Multidisciplinary approach	Project works linked to the multidisciplinary field (PO2, PO11)	The project work is clearly linked the multidisciplinary field	The project work is moderately linked the multidisciplinary field	The project work is partially linked the multidisciplinary field

V. Project Work Monitoring:

The project work is monitored in four phases, as shown in Table.

- Projects are monitored by project guide through project progress and reviews.
- The projects are monitored and evaluated by the Project review committee.
- Project log book is maintained by every group, which is monitored by the project guide.
- Guide gives feedback, suggestions and reviews after observing project progress. The same is noted in the log book.
- The process is depicted in Fig 3 and Fig 4
- Using the rubrics mentioned in table 5, the project guides along with coordinators evaluate the project work.

Phase	Period	Semester	Nature of Work	Assessment	Marks
Phase I	July-September	I	Literature Survey, Problem Statement finalization.	Synopsis Submission/ Presentation	100
	October-November		Design of modules, experimental setup finalization, Preparation of Partial report, Survey paper	Presentation with Project design and requirements, Report submission, External Viva, Paper presentation	
Phase II	January-February	II	Data synthesis and development of model with experimentation	Presentation with Demonstration	100
	March-April		Testing and Result analysis, Implementation Paper	Final Project Report submission, Presentation of paper in conference	
Final Exam	May		External Viva	Project Demonstration and Viva	150

Figure 3: Project Work Phase –I

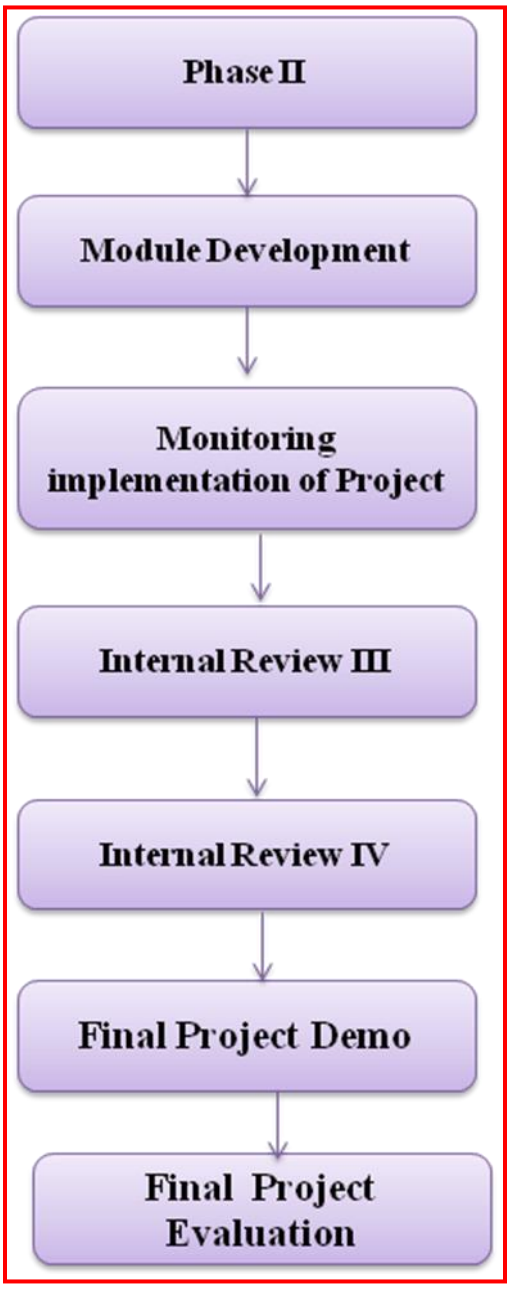

Figure 4: Project Work Phase –II

VI. Project Work Evaluation :

- Evaluation of the project is done by project guide based on the Project assessment rubrics.
- Each semester two project reviews are conducted to evaluate the project work progress by the project review committee.

- At the end of the semester external project examination is conducted to evaluate the project work.
- The parameters used for project work evaluation (review) are shown in following Tables and Figure 5 depicts sample review sheet.

Sr. No.	Project Review	Evaluation Parameters	Deliverables
1.	Review1	1.Project Scope and Objectives	• Purpose, Scope, Objectives
		2. Literature Survey	• Draft Survey Paper
		3.Problem statement	• Problem Statement / Title Abstract
		4.Project Design	• Architecture and High-level Design
		5.Presentation Skills	• Overall system
2	Review 2	1. Proposed System	• Overall System Architecture
		2. Literature Survey	• Survey Paper
		3. Refinement of Design	• Overall Design / algorithms / techniques
		4. Methodology	• Methodology finalization
		1. Presentation Skills	• Partial Report Submission
3	Review 3	1. Algorithm and implementation details	• Algorithm finalization and 50% of code implementation
		2. Dataset identification	• Dataset details
		3. Partial results and discussion	• Partial Results
		4. Draft of Implementation Paper	• Draft of paper2
		5. Presentation skills	• Overall System
4	Review 4	1. Algorithm and implementation details	100% of project implementation
		2. Results, Performance Evaluation and Testing	• Experimental Results, Performance Evaluation and Test reports

		3.Result Analysis and Comparative Analysis	• Module validation
		4. Final Project Report	• Final project report
		5. Publications / IPR/ project competition	• Paper2/patent/copyright/ participation certificate
		6. Presentation skills	

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Department of Information Technology
A.Y.2024-2025

Project Assessment Rubric

Title of Project: _____ Project-Id:

Name of Student/s: _____

Name of Guide: _____

Classification of Project:

1.Applicationoriented/Product development Projects 2.Industry specific/ real life project

3.Societal project 4. Research based Project

Components	Key Performance Indicators (PO)	RelevancewithPerformanceCriteria			Level
		Substantial (3)	Moderate (2)	Slight (1)	
Core competency	Identification of problem or Definition of project (PO2)	Clear,concise and complete Identificationof design goals and project objectives	Adequate Identificationof problem; Any lack of specificsdoesnot impairsolutionor design	Improper Identificationof problem; Inadequately spelled out objectives	
	Technical design(PO3,8)	Meets all specifications withefficient design	Meetsnearlyall specifications	Notdesigned taking into consideration minimum Specifications	
	Complexity of project/design (PO3,8)	Exceedstypical technical complexity for project	Meets typical technical complexityfor project	partiallymeets technical complexityfor project	
Research	Innovative/creati ve aspects (PO3, 12)	The project containsmany significantly original, innovative, or creative aspect(s).	Project contains some original, innovative, or creativeaspect(s).	Itisnotclearthat the project is creative or innovative.	
Modern Tools	Choice&useof resources (PO4,5)	Innovativeuse of resources	Appropriate resourcesused	Inadequateuseof suggested resources.	
Teamwork/Lea dership	division of responsibilities and individual efforts(PO 8,9)	Properdivision of responsibilities and individual	Adequatedivision of responsibilities and individual effortscapitalized	Improperdivision ofresponsibilities and individual effortscapitalized	

Components	Key Performance Indicators (PO)	Relevance with Performance Criteria			Level
		Substantial (3)	Moderate (2)	Slight (1)	
	and individual efforts (PO 8,9)	responsibilities and individual efforts capitalized on strengths of each team member.	and individual efforts capitalized on strengths of each team member.	and individual efforts capitalized on strengths of each team member.	
Multidisciplinary approach	Project works linked to the multidisciplinary field (PO 2 11)	The project workis clearly linked the multidisciplinary field	The project work is moderately linked the multidisciplinary field	The project work is partially linked the multidisciplinary field	
Communication skill	Information management; Log book, status reports, documentation (PO 10)	Detailed, appropriate and timely entries; collected and distributed to appropriate parties	Adequate entries in journal or log books; Only critical data/information collected and distributed	Insufficient data collection/recording. Existing documentation is not shared/utilized.	
Financial Aspect	Budget (Appropriateness & Justification) PO 11	Budget is comprehensive, clearly explained, and appropriate for the Project. All costs are justified, relevant and essential.	Budget is comprehensive, clearly explained, and reasonable. Vast majority of costs are justified, relevant and essential to this project.	Budget is comprehensive and reasonable but not clearly explained. Most costs are justified, relevant and essential to this project.	
Environment and Society	Awareness towards Environment and Society (PO 7,8)	Project meets every relevant expectation of environmentala nd societal issues.	Project meets most of the relevant expectation of environmental and societal issues.	Project meets some of the relevant expectation of environmental and societal issues.	
Feasibility/Viability	Feasibility of Project (PO 3 6 7)	Processes and procedures are well-stated, manageable, appropriate, and comprehensive.	There is a logical and thoughtful plan for manageable execution of the project.	Processes and procedures for executing the project appear manageable, but there is some uncertainty	

Figure 5: Project Assessment Rubric

VII. Process to assess individual and team performance:

- Progress/review presentation activities are conducted twice a semester, followed by question answers in the presence of the Project review committee.
- The performance of the individual and team members of the project is assessed during reviews by a panel by observing the following parameters.
    - Presentation skills
    - Communication skills
    - Technical skills
    - Confidence
    - Overall contribution to the project accomplishment

Individual and team performance parameters assessment frequency is depicted in Figure 6.

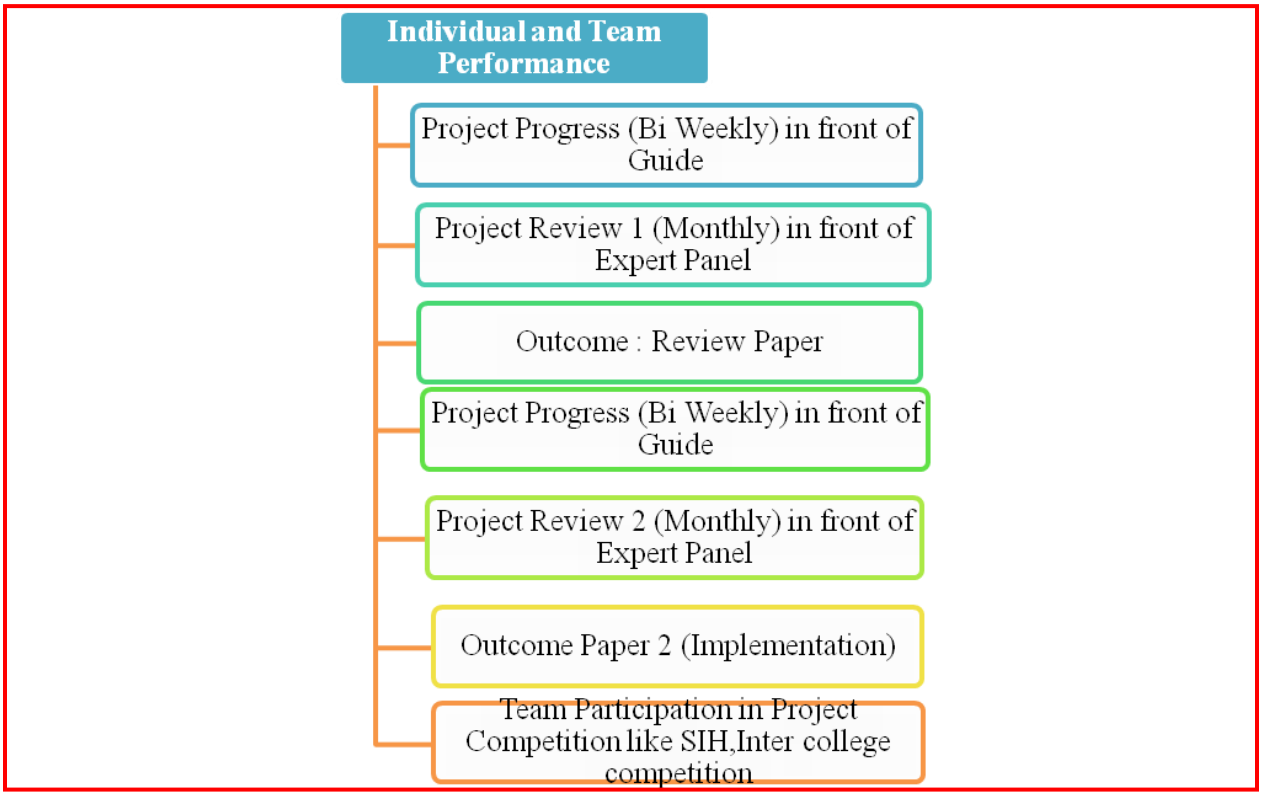

Figure 6: Assessment of individual and team performance

The performance of the project team is assessed by considering the following criterion:

- All designed objectives are fulfilled
- Project contribution in terms of paper publication
- Participation in project competitions
- Preparation of project report
- Demonstration of the project
- Any other activities related to IPR

VIII. Quality of completed projects/working prototypes:

- The quality of completed projects or working prototypes can be assessed through various criteria that reflect both the technical and practical aspects of the work.
- A high-quality project or prototype doesn't just meet the minimum requirements; it also demonstrates excellence in execution, innovation, usability, and real-world applicability.

Also, the **SAG** (Sustainability, Accountability, and Governance) and SDG (Sustainable Development Goals**)** framework is often used to evaluate the quality of projects or working prototypes, particularly with a focus on the long-term impact, ethical responsibility, and management processes behind the project.

- Evaluation through project reviews during semester I and II are used for assessing the project quality.

Quality Evaluation Parameters
i. Proposed system
ii. Implementation
iii. Results and Discussion
iv. Industry Association
v. Research Paper publication / IPR
vi. Participation in national level competition
vii. Awards and achievements
viii. Overall Presentation etc

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