POLICY & STANDARD OPERATING PROCEDURE FOR PROJECT BASED LEARNING (A BEST PRACTICE)

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Approved By	:	Director & Campus Director, AMGOI

1. Purpose

The purpose of this Policy is to establish a comprehensive institutional framework for implementing Project Based Learning (PBL) across all programmes of the Institute, so that students learn by investigating real-world problems, designing solutions, and demonstrating tangible outcomes.

The Institute is committed to developing technically competent, creative, collaborative, and socially responsible engineers by making project-based, outcome-oriented, and industry-relevant learning an integral part of teaching-learning practices, in line with the National Education Policy 2020 and the guidelines of AICTE, UGC, NAAC and NBA.

2. Objectives

The objectives of this Policy are to:

1. Integrate Project Based Learning into the curriculum of all programmes at every semester level.
2. Enable students to apply theoretical knowledge to solve real-world engineering, industry, and societal problems.
3. Develop problem-solving, critical thinking, creativity, design thinking, and decision-making abilities.
4. Promote teamwork, communication, project management, leadership, and professional ethics.
5. Encourage interdisciplinary and multidisciplinary projects through collaboration among departments.
6. Strengthen industry, community, and research linkages by involving external partners in project definition and evaluation.
7. Promote innovation, prototyping, patent filing, publications, start-ups, and participation in competitions and hackathons.
8. Establish a continuous mechanism for guidance, assessment, documentation, and reporting of project outcomes.

3. Scope

This Policy applies to all internal and external stakeholders of the AMGOI, including students, faculty members, project guides, departments, industry partners, community organizations, and external evaluators.

4. Policy Guidelines

Project Based Learning is a student-centred pedagogy in which learners acquire knowledge and skills by working over an extended period to investigate and respond to an authentic, engaging, and complex problem or challenge. It moves learning from passive content delivery to active inquiry, collaboration, and creation of tangible outputs such as prototypes, models, software, reports, and presentations.
Recognizing its value in achieving programme outcomes and enhancing employability, the Institute shall implement PBL as a structured and progressive activity across all years of study. The types of projects covered under this Policy are given below.

Sr. No.	Type of Project	Description
1	Course-Based Mini Project	Short projects linked to a specific course to apply concepts learned in theory and laboratory sessions.
2	Semester Mini Project	Team-based projects in each semester integrating knowledge from multiple courses.
3	Interdisciplinary Project	Projects involving students from two or more departments to solve complex, multidisciplinary problems.
4	Industry-Sponsored Project	Projects defined, mentored, or funded by industry to address real industrial problems and requirements.
5	Community / Social Project	Projects addressing local community, rural, environmental, and societal needs.
6	Innovation and Competition Project	Projects developed for hackathons, project exhibitions, technical competitions, and incubation.
7	Research-Oriented Project	Projects leading to research papers, patents, copyrights, or design registrations.
8	Capstone / Final Year Project	Comprehensive major project demonstrating integration of programme-level knowledge and skills.

A. Curriculum Integration

Each department shall embed PBL in the curriculum through mini projects, course projects, and capstone projects with defined credits, outcomes, and assessment criteria, progressing from simple, guided projects in the early semesters to complex, open-ended projects in the final year.

B. Project Identification and Team Formation

Project topics shall be derived from real-world problems, industry needs, community requirements, and research gaps, and shall be mapped to course and programme outcomes. Teams shall be formed in a balanced manner, with clearly assigned roles and responsibilities among members.

C. Faculty Mentoring and Guidance

Every project team shall be assigned a faculty guide who shall provide regular mentoring, monitor progress, and ensure quality. Industry experts and external mentors shall be involved wherever possible.

D. Industry, Community and Interdisciplinary Collaboration

The Institute shall encourage MoUs and collaboration with industries, research organizations, and community groups for problem statements, mentoring, resources, and evaluation, and shall promote interdisciplinary teams across departments.

E. Assessment, Documentation and Ethics

Projects shall be assessed through continuous evaluation, including reviews, demonstrations, reports, viva-voce, peer evaluation, and rubrics. All projects shall follow academic integrity and plagiarism norms, safety requirements, and intellectual property guidelines.

F. Resources, Showcasing and Recognition

The Institute shall provide laboratories, tools, software, and funding support for projects, organize project exhibitions and competitions, encourage patents, publications, and start-ups, and recognize outstanding projects and teams through awards and incentives.

5. Roles and Responsibilities

A. Director / Campus Director

- Provide strategic direction for implementation of Project Based Learning.
- Allocate financial, laboratory, and infrastructural support for projects.
- Promote industry and community partnerships.
- Review annual institutional PBL performance.

B. Dean IQAC

- Prepare the annual PBL Action Plan and monitoring framework.
- Monitor implementation across departments.
- Conduct semester-wise reviews and analyse project outcomes.
- Publish the Annual PBL Report.
- Organize awareness and capacity-building programmes for faculty.

C. Dean Academics / Dean R&D / Dean Innovation

- Ensure integration of PBL in curriculum, teaching plans, and assessment.
- Facilitate interdisciplinary projects, funding, patents, and incubation support.
- Organize project exhibitions and competitions.
- Submit the semester-wise PBL Report to IQAC.

D. Heads of Departments

- Prepare the departmental PBL plan and constitute the Project Coordination Committee.
- Allocate project guides and finalize project teams and topics.
- Monitor progress through periodic reviews.
- Submit semester-wise reports to IQAC.

E. Faculty Members / Project Guides

- Define project problem statements and map them to course outcomes.
- Mentor teams and monitor progress regularly.
- Evaluate projects using defined rubrics and maintain records.
- Encourage patents, publications, and participation in competitions.

F. Students

- Actively participate in project planning, design, execution, and presentation.
- Work collaboratively and maintain project logbooks and documentation.
- Follow academic integrity, safety, and ethical practices.
- Showcase outcomes through exhibitions, competitions, and publications.

6. Review and Revision of Policy

This Policy shall be reviewed once every three years, or earlier if mandated by statutory updates from the UGC, state government legislation, or directives from the Academic Council/Governing Body. Any amendment to this Policy shall be processed through the IQAC, becoming effective only after formal approval by the Director & Campus Director.

7. Annexures/Supporting Documents

1. All activities should be strictly carried out as per the Policy and SOP for Organization of Activities (Institute Level / Department Level) IQAC/120/03, wherein all project-related activities should be properly planned, documented, and reported.
2. The IQAC shall issue additional guidelines, formats, templates, project proposal forms, review sheets, evaluation rubrics, logbooks, reporting formats, and other relevant documents from time to time, as required.

8. Standard Operating Procedure (SOP)

1. At the beginning of every academic year, the IQAC shall identify and finalize all departments, sections, and committees responsible for implementing Project Based Learning.
2. IQAC shall inform the respective Dean, Head of Department, or Project Coordinator as the nodal person responsible for PBL implementation.
3. IQAC shall communicate the institutional PBL guidelines, reporting formats, timelines, evaluation rubrics, and documentation requirements to all concerned Heads of Departments.
4. Every department shall constitute a Project Coordination Committee comprising a Project Coordinator and faculty members for each year or semester of study.
5. The committee shall prepare the Annual PBL Plan containing the semester-wise projects to be undertaken, project type, credits, schedule of reviews, assessment method, and expected outcomes.
6. Project problem statements shall be identified from industry needs, community problems, research gaps, competitions, and faculty expertise, and shall be mapped to the relevant course outcomes and programme outcomes.
7. The committee shall form student project teams of appropriate size, ensuring balanced composition and clear role allocation among members.
8. Every team shall be assigned a faculty guide, and, wherever applicable, an industry or external mentor.
9. Each team shall submit a project proposal containing the title, problem statement, objectives, methodology, expected outcomes, resources required, timeline, and outcome mapping.
10. The project proposal shall be reviewed and approved by the Project Coordination Committee and the Head of Department.
11. The approved Annual PBL Plan shall be submitted to the Dean IQAC for institutional approval.
12. Dean IQAC shall scrutinize the submitted plan by verifying:
    - Relevance of the projects to course outcomes, programme outcomes, and real-world needs.
    - Alignment with the Institute Vision, Mission, Strategic Plan, and Institutional Development Plan.
    - Compliance with the guidelines issued by AICTE, UGC, NAAC, NBA, DBATU/MSBTE, and other statutory or regulatory bodies, wherever applicable.
    - Feasibility of implementation.
    - Availability of required resources, laboratories, and mentors.
    - Practicality of the proposed timeline.
    - Expected measurable outcomes and impact.
13. After satisfactory verification, Dean IQAC shall approve the Annual PBL Plan.
14. The approved projects and review schedule shall be incorporated into the department academic calendar.
15. The Head of Department shall ensure that all necessary administrative approvals, laboratory access, materials, software, and funding are arranged before commencement of the projects.
16. The project teams shall execute the project as per the approved plan, and shall maintain a project logbook recording weekly progress, meetings with the guide, and individual contributions.

17. The Project Coordination Committee shall conduct periodic reviews (at least three during the semester) to evaluate the progress of the projects against the plan.
18. Students shall demonstrate the working model, prototype, software, or outcome before the evaluation committee, which may include internal and external experts.
19. Assessment shall be carried out using the prescribed rubrics covering problem definition, design, implementation, results, teamwork, documentation, presentation, and individual contribution.
20. Every team shall submit a final project report in the prescribed format, checked for plagiarism and compliance with academic integrity norms.
21. The project guide shall prepare a detailed project record along with supporting documents such as proposal, review sheets, logbook, attendance, photographs, reports, test results, certificates, and outcome mapping justification.
22. The Head of Department shall verify the records, confirm correct mapping of outcomes, validate the supporting evidence, and ensure that the objectives of the projects have been achieved. Verified reports shall be maintained at the department for future reference and audits.
23. Selected outstanding projects shall be showcased in project exhibitions, competitions, and conferences and shall be encouraged for patents, publications, and incubation.
24. At the end of every semester, each Head of Department shall compile all PBL activities and outcomes and submit the semester-wise PBL report to the Dean IQAC in the prescribed format.
25. Dean IQAC shall conduct periodic review meetings to monitor the progress of PBL implementation across all departments.
26. At the end of the academic year, Dean IQAC shall compile all semester reports and outcome indicators (such as number of projects, interdisciplinary and industry-sponsored projects, patents, publications, competition awards, and start-ups) into a comprehensive Institutional Annual PBL Report.
27. The Annual PBL Report shall be submitted to the Director & Campus Director for review and approval.
28. Based on the annual review, IQAC shall issue recommendations for continuous improvement, revise implementation strategies wherever required, and initiate the planning process for the subsequent academic year.

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