

STANDARD OPERATING PROCEDURE



Final Year Design Project (FYDP) Assessment and Management

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REVISION NO.:	00			
DATE OF ISSUE:	18-10-2021			



Document #: NED/SOP/FYDP/010	22 October 2021	Issue #: 01	10:07:21 AM PKT
Title:	Standard Operating Procedure for Final Year Design Project (FYDP) Assessment & Management		

1. SUBJECT

Standard Operating Procedure (SOP) for the allocation, assessment and final evaluation of Final Year Design Projects (FYDP).

2. PURPOSE AND OBJECTIVE

The purpose of this SOP is to standardize the process of allocation, assessment and final evaluation of FYDP. It is designed to manage and to define the roles and responsibilities of the Chairperson, FYDP Steering Committee, FYDP Coordinator, FYDP Supervisor/Co-Supervisor/Industrial Advisor, Examiners and Students. This SOP also defines the necessary monitoring and controls of the FYDP processes and the effective and efficient communication with the stakeholder, involved in the process.

3. RESPONSIBILITIES

3.1 Chairperson

Apart from statutory and delegated responsibilities, Chairpersons of the departments are responsible for

- (i) constituting the FYDP Steering Committee comprising of three (03) faculty members with intimation to the concerned Dean
- (ii) appointing the FYDP Coordinator
- (iii) approving Activity Plan for the FYDP
- (iv) implementing, monitoring and control of Activity Plan
- (v) assigning FYDP Examiners for the Mid-Term (Fall Semester) and Final Evaluation (Spring Semester)
- (vi) assigning the moderators (if needed) for the project evaluation session, acting on behalf of the chairperson to resolve the conflicts between the Supervisors and Examiner
- (vii) propose changes for improvements in FYDP SOP or related documents, as needed

3.2 Director Quality Enhancement Cell, is responsible for

- (i) monitoring and controlling the FYDP Process through the internal audits
- (ii) evaluating and incorporating any proposed change in the FYDP SOP or related documents

3.3 FYDP Steering Committee is responsible for

- (i) reviewing and endorsing FYDP proposals
- (ii) monitor the FYDP execution and resolve any conflicts/issues, if arising
- (iii) propose improvements in the FYDP SOP at the department level

3.4 FYDP Coordinator is responsible for

- (i) conducting and managing an orientation session for the FYDP students before the commencement of Fall semester
- (ii) preparing the Activity Plan for the FYDP
- (iii) communicating with the Directorate of Industrial Liaison (DIL) for the collection of industrial project to be assigned as the FYDP
- (iv) collecting the project titles along with synopsis from the Prospective Supervisors (Faculty Members)

- (v) taking consent from the Industrial Advisor, if any
- (vi) displaying FYDP List on the noticeboard and the departmental webpage after approval of the Chairperson
- (vii) collecting the FYDP allocation form from the groups
- (viii) communicating the FYDP Allocation List to the Supervisor/Co-Supervisor/Industrial Advisor
- (ix) collecting the project proposals from the FYDP Supervisors and forwarding them to the FYDP Steering Committee for endorsement
- (x) initiating resolution of any issue related to FYDP allocation (such as; change of title, composition of group etc.)
- (xi) traceability of recommendation for improvements provided in Mid-Term and Final Evaluation

3.5 Supervisor/Co-Supervisor is responsible for

- (i) providing guidance to the FYDP students related to the FYDP titles before the allocation of the projects
- (iii) communicating with the Industry Advisor, if any
- (iv) forwarding the reviewed proposals to the FYDP Coordinator
- (v) providing continuous supervision to the FYDP groups allocated to them
- (vi) maintaining weekly attendance of the FYDP groups
- (vii) performing the Mid-Term Assessment, Final Evaluations and other assessment of the FYDP groups as per the rubrics and timelines
- (viii) reviewing the Proposals and FYDP Reports submitted by the FYDP groups with respect to report formatting, technical contents, similarity as well as English usage.

3.6 Industrial Advisor is responsible for

- (i) providing industrial problems and connecting it with the FYDP solution and providing guidance to the students to reach to an industry oriented solution, in coordination with the Supervisor/Co-Supervisor
- (ii) providing necessary data as per need of the FYDP
- (iii) arranging field visit/industry visit of the FYDP group as per the need of FYDP
- (iv) facilitating the students with respect to industry related concerns, as needed

3.7 FYDP Examiner is responsible for

- (i) evaluating the performance of FYDP students/groups during the Mid-term and Final Evaluation as per provided rubrics
- (ii) reviewing the FYDP Reports submitted by the FYDP groups with respect to report formatting, technical contents, as well as English usage.

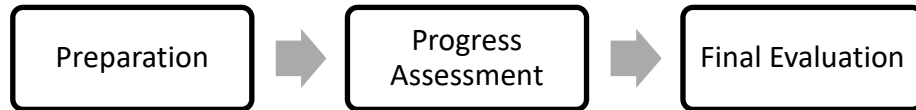
3.8 FYDP Group/Students are responsible for

- (i) attending the FYDP Orientation Session arranged by the FYDP Coordinator
- (ii) forming group of up to four (04) students
- (iii) selecting the FYDP project on the prescribed Performa
- (iv) timely submission of Project Proposal (to the Supervisor), Mid-Term Report/Presentation, Final Report, Final Report/Presentation as prescribed in the Activity Plan
- (vi) ensuring that the Mid-Term and Final Reports must comply with the prescribed format, proper English usage and originality (similarity index should be less than equal to 19 percent)

- (v) appearing before the Panel of Examiners for presenting their work at the Mid-Term and Final Evaluation
- (vi) incorporating the Supervisors/Examiners comments in the FYDP Report and Presentation
- (vii) completing the Project Deliverable as committed in the Project Proposal

4. PROCESS

The processes of Final Year Design Project (FYDP) are preparation, progress assessment and final evaluation.

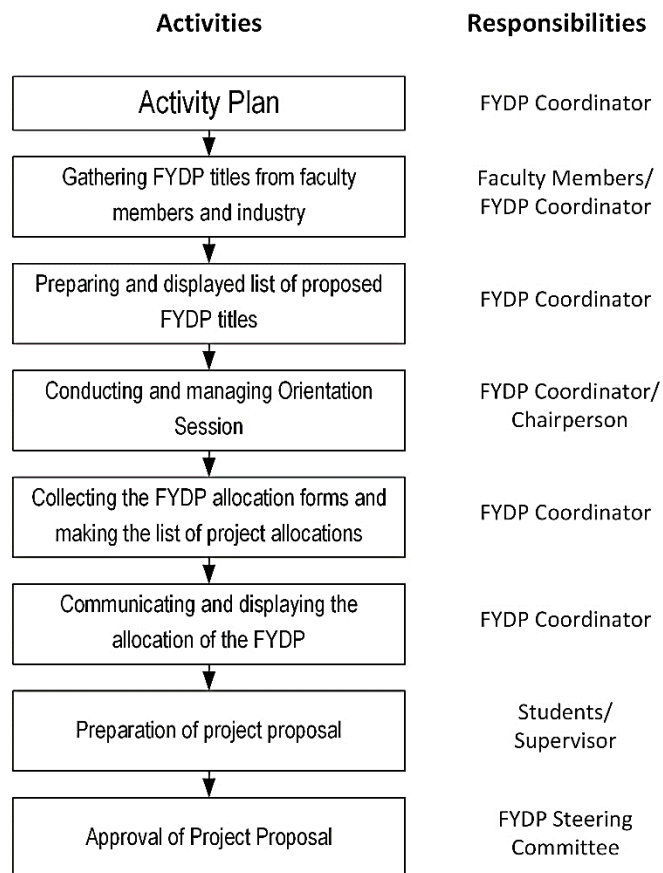


Following are the details of these processes;

4.1 Preparation

Following figure illustrate the step-wise activities involved in this process.

Preparation



The process of FYDP Preparation includes following activities;

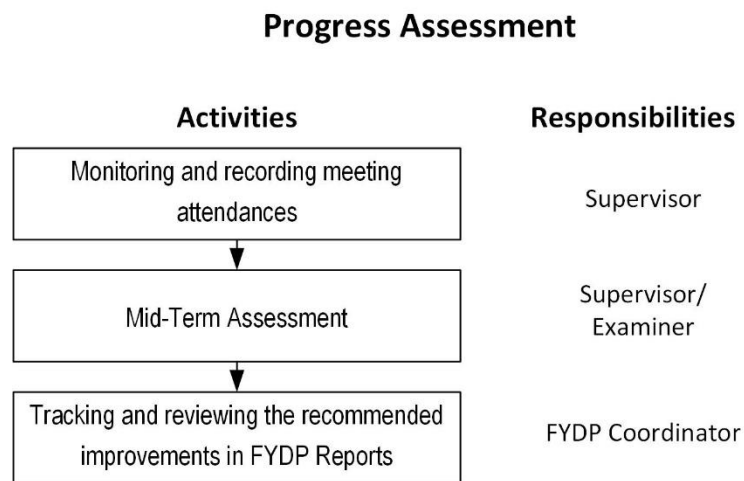
- (i) Preparing/Reviewing Activity Plan
- (ii) Gathering FYDP titles and synopsis from faculty members and industry
- (iii) Preparing and displaying list of proposed FYDP titles along with synopsis including names of Supervisors, Industrial Advisor (taking consent) and Industry, if any

- (iv) Conducting and managing Orientation Session for the students about the FYDP SOP, roles and responsibilities of FYDP Coordinators, Supervisors/Co-Supervisors/Industrial Advisor and Students, templates and forms, SDGs and the project titles available for the allocations
- (v) FYDP should be in-line with the Sustainable Development Goals (SDGs)
- (vi) Collecting the FYDP allocation forms and making the list of project allocations to the groups
- (vii) Communicating and displaying the allocation of the FYDP to all concerns
- (viii) Preparation of project proposal
- (ix) Approval of Project Proposal by the FYDP Steering Committee

Activities (i) to (vii) may be performed before the start of Fall Semester of the FYDP students, activities (viii) to (ix) may be performed in the first two weeks of the Fall Semester or earlier. Students will submit the proposal in first two week and review of the proposal will be completed by the first fourth weeks.

4.2 FYDP Progress Assessment

Following figure illustrate the step-wise activities involved in this process.



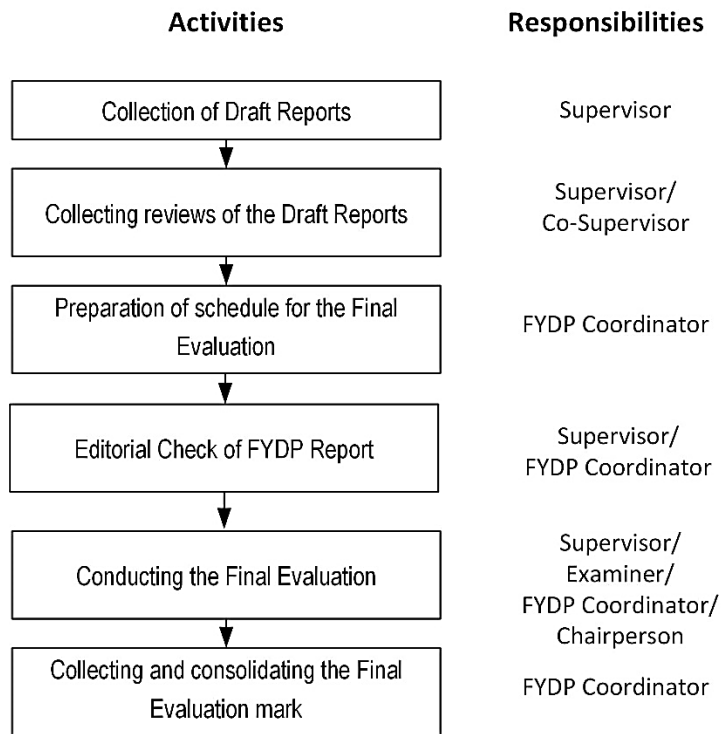
The process of FYDP Progress includes following activities;

- (i) Monitoring and recording of students presence in the FYDP discussion meetings with the Supervisor/Co-Supervisor
- (ii) Planning, communicating and conducting Mid-Term Assessment as per the rubrics at the end of Fall semester
- (iii) Tracking and reviewing the recommended improvements in FYDP Reports given by the FYDP Examiners/FYDP Steering Committee

4.3 FYDP Final Evaluation

Following figure illustrate the step-wise activities involved in this process.

Final Evaluation



The process of FYDP Final Evaluation includes following activities;

- (i) Collection of Draft Reports 3 to 4 weeks before the end of eight semester classes
- (ii) Collecting reviews of the Draft Reports by the Supervisor/Co-Supervisor
- (iii) Preparation of schedule for the Final Evaluation of the FYDP mentioning the project sequence and FYDP Evaluator/Examiner assigned
- (iv) Editorial Check of FYDP Report
- (v) Conducting the Final Evaluation of FYDP at the end of eight semester of the FYDP students
- (vi) Collecting and consolidating the Final Evaluation marks through the rubrics

4.4 FYDP Evaluation and Editorial Check

Following points need to be followed during the FYDP Evaluation;

- (i) Minimum two evaluations are to be conducted including Mid-Term Evaluation and Final Evaluation based on rubrics with well defined criterions
- (ii) Rubrics should be inline with the three domains as defined in PEC – OBE Accreditation Manual, which are; Knowledge, Skills and Attitude (KSA)
- (iii) Following criteria are recommended to be considered while defining the rubrics for Mid-Term and Final Evaluation as suitable; background study/literature review, understanding of project goal/problem statement, clarity of project objectives and scope, suitability of project methodology, use of modern tools (software/hardware), presentation quality, technical writing skills, originality of work, individual contribution and team skills, regularity of meeting etc
- (iv) Final marks and grades of FYDP of each student must be performed totally using the rubrics based assessments

4.5 FYDP Report (See detailed template in F/SOP/FYDP 09/01)

Following should be complied while making the FYDP Report;

- (i) The language of the FYDP report should be English with accurate and sufficient technical and grammatical usage
- (ii) Final year project report is divided into three sections: 1. Front Section, 2. Main Body, and 3. Back Section
- (iii) Front Section is from the Title page to the Similarity Index Report page
- (iv) Main Body is from the first chapter Introduction till the last chapter "Conclusion"
- (v) Back Section includes the content after the Main Body. It includes References, Appendices, Glossary, and Letter of Copyright Permission (if required)
- (vi) Submission of FYDP Report must be approved by the Project Supervisor and FYDP Coordinator
- (vii) All FYDP students must sign the Author's Declaration declaring the originality of the report
- (viii) The report must comply with the formatting as described in F/SOP/FYDP 09/01
- (ix) The report technical content must be sufficient enough to describe the configuration/specification of the FYDP deliverable
- (x) FYDP Report and its contents must be original and plagiarism free. Similarity Index must be determined to avoid the plagiarism in the FYDP Report using any of the service available for this purpose
- (xi) According to the HEC Guidelines:
 - a. using published work without referencing (the most common)
 - b. copying coursework essays
 - c. collaborating with any other person when the work is supposed to be individual
 - d. taking another person's computer file/program
 - e. submitting another person's work as one's own
 - f. the use of unacknowledged material published on the web
 - g. purchase of model assignments from whatever source
 - h. copying another student's results
 - i. falsifying results
- (xii) References/bibliography and table of contents must be removed from document which is submitted. If these are included then similarity index of the document will be increased
- (xiii) If the report has similarity index $\leq 19\%$, then benefit of doubt may be given to the author but, in case, any single source has similarity index $\geq 5\%$ without citation then it needs to be revised
- (xiv) If similarities of a report are from author's own (previous) work then these may be ignored only if the material has been cited by the author

5. COMPLEX ENGINEERING PROBLEMS / ACTIVITIES

The core objective of Final Year Design Project (FYDP) is to expose the students to the problems which cannot be solved through the conventional techniques and surface knowledge. Hence according to the PEC OBE Accreditation Manual, following characteristics of Complex Engineering Problem (CEP) must be adopted in defining the Final Year Design Project (FYDP) and assessing it through the rubrics. Furthermore, the alignment of rubrics must be present with the Programme Learning Outcomes (PLOs) as defined in the SAR of the respective departments and the Graduate Attributes (GAs) as defined in the PEC OBE-Accreditation Manual.

Following are the major CEP characteristics;



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- (i) Range of conflicting requirements: technical, engineering or other issues.
- (ii) Depth of analysis required: have no obvious solution and require abstract thinking
- (iii) Depth of knowledge required: require research-based knowledge
- (iv) Familiarity of issues: involve infrequently encountered issues
- (v) Extent of applicable codes: standards and codes devised by the professional bodies
- (vi) Extent of stakeholder involvement and level of conflicting requirements
- (vii) Consequences: impact over the society
- (viii) Interdependence: problems due to dependability

Following are the Complex Activities;

Complex activities means (engineering) activities or projects that have some or all of the following characteristics listed below:

- (i) Range of resources: involve the use of diverse resources (and for this purpose, resources include people, money, equipment, materials, information and technologies)
- (ii) Level of interaction: require resolution of significant problems arising from interactions between wide ranging or conflicting technical, engineering or other issues
- (iii) Innovation: involve creative use of engineering principles and research-based knowledge in novel ways
- (iv) Consequences to society and the environment: have significant consequences in a range of contexts, characterized by difficulty of prediction and mitigation
- (v) Familiarity: can extend beyond previous experiences by applying principles-based approaches

6. RELATED DOCUMENTS

- | | |
|---|----------------------|
| 1) Activity Plan for the FYDP | F/SOP/FYDP 01/01/ -- |
| 2) Project List | F/SOP FYDP 02/01/ -- |
| 3) FYDP Allocation Form | F/SOP/FYDP 03/01/ -- |
| 4) Consent Form for External Supervisor/Industrial Expert | F/SOP/FYDP 04/01/ -- |
| 5) Application for Change Of Project Title | F/SOP/FYDP 05/01/ -- |
| 6) Attendance of Final Year Project Group | F/SOP/FYDP 06/01/ -- |
| 7) Proposal for the Final Year Design Project | F/SOP/FYDP 07/01/ -- |
| 8) Rubrics for the Mid-Term and Final Evaluation | F/SOP/FYDP 08/01/ -- |
| 9) FYDP Report Format | F/SOP/FYDP 09/01/ -- |