Programme: **Bachelor of Engineering (Information Technology)**

Semester: **VIII**

Course Code: **102080801**

Course Title: **Industry/User Defined Project (IDP/UDP)**

Course Group: **Project**

Course Objectives: The transformation of theoretical knowledge makes students apply their engineering concepts, synthesis, and various technical methods which they have learnt in their long run of studies. Thus, a project enables students to use their technical knowledge and project management tools to implement projects. Project works provide interdisciplinary hands-on experience through designing, development, and implementation of academic projects. It ultimately enables undergraduate students to think socially with an innovative technical mind-set. This course is teamwork where a student is expected to work in a group with a maximum of three to four students. The group is expected to select an engineering process project/problem, which is oriented in solving an industrial problem or beneficial for society. Students are encouraged to submit one technical paper at the end of semester in reputed National/International journals for publications/present the paper in any national or international conference at the end of the semester.

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
				Theory		J/V/P*		
Lecture	Tutorial	Practical		Internal	External	Internal	External	Total
0	0	16	08	00	00	60/21	90/32	150/53

* **J**: Jury; **V**: Viva; **P**: Practical

Content:
- During 8th semester every student will have to undergo industrial internship or undertake a Project work.
- The department will identify whether the student will undertake an Industrial Internship or do Project work preferably at the end of 7th semester but not later than first 2 weeks of the start of semester.

Guideline for Project:
The following guidelines are required to be followed for the project.

- Projects can be of two types, either UDP (User defined project) or IDP (Industry defined project).
- For UDP the student may select a project in consultation with the faculty supervisor and majority of the work is to be carried out in the department. This may be an experimental/simulation/ modelling/New Design and product Development/Algorithm/ case study / critical survey etc. The project should be of industrial or societal importance.
- For IDP, the selected projects should preferably be a case-study based problem as well as related theoretical studies on the selected industrial topic. The problem may be a concise description of the industry related technical issues, which the student has found out while visiting the industry or might be assigned by the industry. The project will preferably be designed to develop a better product or a better process or it may be some design/simulation/modelling or innovations or modifications of existing technology.
- The group size of the project team shall not be more than 4 students. In case it is required to have more students, it shall be approved by the respective head of department for valid reasons.
- Each student group must be assigned a faculty as a mentor from the college. Each faculty mentor can mentor maximum 3 groups/12 students.
- The students should record the day to day observations, impressions, information gathered and suggestions given, if any in the daily/weekly dairy. It should contain the related sketches and drawings and other relevant observations made by the students. A detailed daily/weekly diary is supposed to be maintained by the student(s). It shall be signed duly by the concerned supervisor from time to time. It shall be submitted to the department at the end of the semester.
- There shall be a committee at the department level to monitor the quality and quantity of the work of each team. A presentation by the team shall be made at the beginning of the semester to a committee formed by head of department. This presentation shall contain the detailed proposal of the project, which includes title of the project, well defined problem and a plan of activities (road map) with appropriate timelines. The role of team members and work distribution shall preferably be defined as far as possible in this proposal itself.

Internal (Continuous) Evaluation:
- Continuous evaluation of the progress of internship shall be carried out thrice in a semester in presence of respective departmental committee formed by the head of the department including the faculty guide/supervisor as per following:
    (i) The internal evaluation/scrutiny shall be done in the respective parent departments of the student at the start of the semester (Preferably oral presentation stating title and objectives of the project to be carried out, preliminary literature survey and tentative time-line of work or road map)
    (ii) At the mid of the semester (progress evaluation in the form of poster/ oral presentation).
    (iii) At the end of the semester (before term ending) final presentation/demonstration in the form of oral presentation. The distribution of internal marks/ rubrics shall be decided by the committee.

- Considering the number of credits and the contact hours (practical hours), substantial amount of work is required to be carried out by students' team. It shall be monitored by the project mentor and the department committee. The evaluation shall be done accordingly with due consideration given to the quality and amount of work by internal and external examiners.

- The project work can be a Design and Development/ Methodology/ Algorithm/ Simulation or Manufacturing depending upon the area and the complexity of the work involved.

- If it contains only simulation, it shall be comprehensive. The team is expected to know the various aspects of simulation techniques in detail. The team shall be able to explain the results obtained in detail with all the aspects and different cases. Moreover, the simulated results must be verified through results available in literature or performance of experimentation (if possible).

- It can be a Case study, innovative Solution/Practices to real life problems, modelling and analysis, design, optimization, prototype, industry defined problem, development of new laboratory setup at the department etc.

- If it is a case study, it shall be a real-life case and of high technical relevance and societal benefits.

- If the project is about a modelling, the team is expected to know the proper mathematical formulation and justification of the modelling, its limitations and its possible applications. The comparison of performance of various models shall be covered as a part of the work. A detailed analysis of the results and its verification shall be done with the help of the model.

- Students opting for IDP in any industry or other R& D organizations have to produce an undertaking on code of conduct, duly signed by the concerned student and one of his parents prior to joining the industry for IDP. The undertaking format will be made available in the department.

Pedagogy:
- Seminar/Poster Presentation
- Industrial/ Field visits
- Course Projects

Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

Distribution of Theory Marks in %						R: Remembering; U: Understanding; A: Applying; N: Analyzing; E: Evaluating; C: Creating
R	U	A	N	E	C	
5%	10%	30%	25%	15%	15%	

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcomes (CO):

Sr.	Course Outcome Statements	%weightage
CO-1	To design and carry out the experiments/design/theoretical design/ simulations work in team in the predetermined methodology.	20
CO-2	To analyze and interpret the obtained data for optimum solution using suitable Engineering and IT tools.	20

CO-3	To elucidate the short comings and identify the scope for future work	**15**
CO-4	To communicate effectively the project the results/write effective reports to publicize the deduce solutions	**15**
CO-5	To develop ability to function and to work as an individual/ as a member/leader in diverse team	**15**
CO-6	To understand the essence and need of professional ethics during project documentation	**15**

Curriculum Revision:	
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Last Reviewed on (Month-Year):	-
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