FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2022-23

Programme: **Dairy Technology**

Semester: **8**

Course Code: **202000801**

Course Title: **Industrial Internship**

Course Group: **Internship**

Course Objectives: Industrial internship is defined as academic internship/industrial training as a structured and supervised professional work experience within an industry/ Research & Development Organization/research laboratory and reputed academic institution. The internship is guided by learning goals and reflective assignments. It is jointly supervised by a faculty member and professionally by an industry professional. Industrial training provides the impetus for students to comprehend and appreciate real-life working experiences. Students may realize their ambition and ascertain their career path from the experience gained during industrial training. Such attachment provides students the opportunity to meet and network with people in the industry, and the industry also gets an opportunity to identify talents and potential skilled workers. Students may also get the opportunity to specialize in niche areas.

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
				Theory		J/V/P*		Total
Lecture	Tutorial	Practical		Internal	External	Internal	External	
00	00	32	16	-	-	150/53	150/52	300/105

* **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 and decide whether the student will undergo Industrial Internship or do Project work preferably at the end of 7th semester.

Guidelines for Industrial Internship:

The following guidelines are required to be followed for industrial internship.

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- The industrial internship would be assigned to the students with the approval of head of the respective department and placement coordinator.
- The total duration of the in-plant training would be for a period equal to the 16 calendar weeks. The duration will be divided into 2 phases of equal duration (8 weeks / phase) if deemed necessary.
- A student can complete entire 16 weeks duration in a single organization or can take in two different organizations for each of the phase.
- In-plant training can be in a company (within state or outside) that is involved in R&D/process design/manufacturing/software/(QA/QC/plantengineering/production/consultancy/technical services/engineering product).
- The internship shall be a full time for the entire duration.
- Each student must be assigned a faculty-mentor from the parent department and an Industry Expert as External Guide or Industry Mentor, if necessary.
- A plan for the whole internship duration shall be prepared after joining the industry in consultation with industry and institute mentors. It shall contain the activities/ visits to different sections etc. with appropriate timelines.
- A student should submit a brief proposal about the work to be carried out during the Internship to a department committee formed by head of department within 2 weeks, after starting the internship.
- The students should record day to day observations, impressions, information gathered and suggestions given, if any in daily/weekly dairy. It should contain related sketches and drawings and other relevant observations made by students. A detailed daily diary is to be maintained mandatorily by student. It shall be signed duly by the concerned supervisor of industry. It shall be submitted to the department for evaluation and monitoring..
- A comprehensive report is required to be prepared and submit to the department at the end of semester. A certificate shall be attached with this report duly signed by the competent authority of industry for successful completion of internship. An attendance report shall also be attached with this report.

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- During Internship, if a student is absent due to bad weather or illness, then he/she must inform over Email to the Industry Mentor while keeping informed the Faculty Mentor in CC. Absence from Internship continuously for a duration not exceeding 3-days, will require the approval of the Faculty Mentor. In such cases, the Faculty Mentor will approve your leave over Email by keeping the Industry Mentor in CC.
- Faculty Mentor may make surprise visits (or calls) to Industry Mentor following proper channel; if a student is not performing well or not sincere in his/her work, suitable action will be taken by the department.

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 mentor as per following:
  - (i) The internal evaluation/scrutiny shall be done in respective parent departments of student at the start of semester (**within 02 weeks of the start of semester**) (Preferably oral presentation stating the planning of the internship, preliminary report on visit to different section(s)/unit(s) of the industry/organization and timeline of work or road map).
  - (ii) At the mid of the semester (**after about 8-9 weeks**) (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.
- An attendance report shall be sent to the department after every four weeks by the student.
- The internship report shall be submitted to the institute which should include the objective of training, about the industry, process, product line, equipment/machineries involved, divisions/sections in the industry, any competitor, scope of some improvement in the process/product/efficiency, benefit by the training etc.
- The industry supervisor may be invited at the time of final end-semester evaluation of the internship.

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- Any violation of Code of Conduct during the Internship program will be liable to disciplinary action from the Institute.
- Each student must produce an undertaking on code of conduct, duly signed by the concerned student and one of his parents prior to joining the industry for internship. The undertaking format will be made available in the department.

Pedagogy:

- Audio Visual presentations/demonstrations
- Continuous assessment
- Interactive methods
- 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 apply acquired knowledge in problem-based exercises in real life industrial projects.	20
CO-2	To acquire practical skills and experience working on projects alongside industry experts.	20
CO-3	To acquire interpersonal skills and ability for teamwork through interaction with professionals in their field of study.	15
CO-4	To communicate & report the industrial practices through technical presentations.	15
CO-5	To understand the essence and need of industrial ethics.	15
CO-6	To recognize the changes in the industrial practices due to technological changes and engage in lifelong learning.	15

Curriculum Revision:	
Version:	2.0
Drafted on (Month-Year):	June-2022
Last Reviewed on (Month-Year):	-
Next Review on (Month-Year):	June-2025

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FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2022-23

Programme: **Dairy Technology**

Semester: **8**

Course Code: **202200801**

Course Title: **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*		Total
Lecture	Tutorial	Practical		Internal	External	Internal	External	
00	00	32	16	00	00	150/53	150/52	300/105

* **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.

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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.

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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:

(iv) 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 timeline of work or road map)

(v) At the mid of the semester (progress evaluation in the form of poster/ oral presentation).

(vi) (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.

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- 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:

- Audio Visual presentations/demonstrations
- Continuous assessment
- Interactive methods
- Seminar/Poster Presentation
- Industrial/ Field visits
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Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

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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 analyse 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 effectively communicate 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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Next Review on (Month-Year):	June-2025

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