Annasaheb Dange College of Engineering and Technology, Ashta

An Autonomous Institute

Second Year M. Tech.
Curriculum Structure

MECHANICAL ENGINEERING

SEMESTER III - IV

w.e.f. 2026-27

Department of Mechanical Engineering

Established: 1999

Annasaheb Dange College of Engineering and Technology

Ashta - 416301, Dist. : Sangli, Maharashtra

(An Empowered Autonomous Institute)

S.Y. M. Tech. – Mechanical Engineering

[Level 7, M. Tech] Semester - III

Sr. No.	Course Category	Course Type	Course Code	Course Name	L	T	P	S	Cr	Evaluation Scheme (Marks)				
										Theory			Laboratory	
										MSE	TA	ESE	CIA	ESE
01	VS	L1	0DEVS532	Dissertation Phase I	-	-	24	-	12	-	-	-	50	50
02	VS	L2	0DEVS533	Internship	-	-	-	-	2	-	-	-	50	-
03	SS	T1	0DESS5XX	Self-Learning Course - I	4	-	-	4	4	-	-	100	-	-
				Total	**4**	**-**	**24**	**4**	**18**	---				

Legends: L-Lecture, T-Tutorial, P-Practical, S-Self Study, Cr-Credits, MSE - Mid-Semester Examination. CIA-Continuous Internal Assessment, TA - Teachers Assessment, ESE-End-Semester Examination

Minimum Passing Criteria	TA (Theory): ≥ 8 / 20	MSE + ESE (Theory): ≥ 32 / 80	TA (Theory) / CIA (Lab): ≥ 20 / 50	ESE (Lab): ≥ 20/50	ESE (Theory): ≥ 40/100

Self-Learning Course- I shall be floated from the list of available courses in NPTEL/SWAYAM.

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(An Empowered Autonomous Institute)

S.Y. M. Tech. – Mechanical Engineering

[Level 7, M. Tech] Semester - IV

Sr. No.	Course Category	Course Type	Course Code	Course Name	L	T	P	S	Cr	Evaluation Scheme (Marks)				
										Theory			Laboratory	
										MSE	TA	ESE	CIA	ESE
01	VS	L1	0DEVS537	Dissertation Phase II	-	-	28	-	14	-	-	-	50	50
02	SS	T1	0DESL5XX	Self-Learning Course - II	4	-	-	4	4	-	-	100	-	-
				Total	**4**	**-**	**28**	**4**	**18**	---				

Legends: L-Lecture, T-Tutorial, P-Practical, S-Self Study, Cr-Credits, MSE - Mid-Semester Examination. CIA-Continuous Internal Assessment, TA - Teachers Assessment, ESE-End-Semester Examination

Minimum Passing Criteria	TA (Theory): ≥ 8 / 20	MSE + ESE (Theory): ≥ 32 / 80	TA (Theory) / CIA (Lab): ≥ 20 / 50	ESE (Lab): ≥ 20/50	ESE (Theory): ≥ 40/100

Self-Learning Course- II shall be floated from the list of available courses in NPTEL/SWAYAM.

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Annasaheb Dange College of Engineering and Technology, Ashta

An Autonomous Institute

Second Year M. Tech.
Curriculum Content

MECHANICAL ENGINEERING

SEMESTER III - IV

w.e.f. 2026-27

Department of Mechanical Engineering

Annasaheb Dange College of Engineering and Technology
Ashta - 416301, Dist. : Sangli, Maharashtra
(An Empowered Autonomous Institute)
Department of Mechanical Engineering

Established: 1999

Course Information:

Class, Semester	S.Y. M. Tech, Semester - III					**Category**	**VS**
Course Code, Course Title	**0DEVS532, Dissertation Phase - I**					**Type**	**L1**
Prerequisites	-						
Teaching Scheme (per week)	**Lecture**	**Tutorial**	**Practical**	**Self Study**	**Credits**		
	-	-	24	-	12		
Examination Scheme (Marks)	**Theory**	**MSE**	**TE**	**ESE**	**Practical**	**CIA**	**ESE**
		-	-	-		50	50

Course Outcomes (COs) :
Upon successful completion of this course, the student will be able to:

CO1	**Identify** and formulate a research problem in the chosen area of specialization through an extensive literature survey.
CO2	**Analyze** existing research works to identify research gaps and define clear objectives, scope, and expected outcomes.
CO3	**Design** an appropriate methodology, framework, experimental setup, or implementation strategy to address the identified problem.
CO4	**Conduct** preliminary investigations, feasibility studies, simulations, or prototype development relevant to the proposed work.
CO5	**Prepare** and present a structured dissertation proposal/report demonstrating technical writing, research planning, and communication skills.

- Students shall undertake Dissertation Phase I in Semester III focusing on problem identification, literature survey, and initial methodology design in the chosen area of specialization. The work shall be carried out individually under the guidance of an assigned faculty supervisor. The topic shall be finalized with prior approval from the Department.
- During this phase, students shall conduct an extensive literature review, identify research gaps, and define a clear problem statement along with objectives and expected outcomes. Students shall design an appropriate methodology/approach, including tools, techniques, and implementation strategies. Initial experimentation, feasibility analysis, or prototype development may also be carried out wherever applicable.
- Students shall meet their faculty guide regularly to discuss progress, receive feedback, and refine the proposed work. The details of meetings, discussion points, observations, and action items shall be recorded in a Project Diary/Research Log Book.
- Students shall maintain a Project File containing literature survey records, progress reports, meeting notes, experimental results, and other relevant documents. Proper documentation of all work carried out shall be maintained throughout the semester.
- Students shall submit periodic progress reports as prescribed by the department. The progress of the dissertation work shall be reviewed during the Synopsis Presentation, Progress Presentation–I, and Progress Presentation–II.
- At the end of Semester III, students shall submit a Dissertation Phase I Report containing the introduction, literature survey, problem definition, research objectives, proposed methodology, work completed, and preliminary results, if any.
- The final assessment shall be based on the quality of the dissertation report, maintenance of the Project Diary and Project File, progress achieved during the semester, presentations made before the evaluation committee, and performance in the viva-voce examination.

Dissertation Phase – 1			
Continuous Internal Assessment (50)		End Semester Examination (50)	
Synopsis Presentation	15	Dissertation Report Phase – 1	25
Progress Presentation - I	15	Viva Voce Examination	25
Progress Presentation - II	20		

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- The report shall be assessed based on content quality, technical depth, clarity, organization, methodology, and documentation. The presentation and viva voce shall assess presentation skills, technical understanding, practical insights or demonstration, ability to respond to questions, and overall professionalism and communication.

Evaluation Criteria	Evaluated By	Marks (Out of 50)	Description / Assessment Basis
Workplace Performance	Industry Supervisor	10 Marks	Evaluated based entirely on the external supervisor's performance rubric feedback, focusing on workplace punctuality, professionalism, and core engineering skills.
Technical Report & Documentation	Department Evaluation Committee	20 Marks	Assesses the overall quality, engineering depth, structural formatting, and clarity of the submitted final internship report along with the completion certificate and daily log.
Technical Presentation & Viva-Voce		20 Marks	Evaluates the student's oral presentation delivery, tool/software demonstrations, response accuracy during the question-and-answer session, and overall verbal communication skills.

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Department of Mechanical Engineering

Established: 1999

Course Information:

Class, Semester	S.Y. M.Tech, Semester - III					**Category**	**VS**
Course Code, Course Title	**0DEVS533, Internship**					**Type**	**L2**
Prerequisites	-						
Teaching Scheme (per week)	**Lecture**	**Tutorial**	**Practical**	**Self-Study**	**Credits**		
	-	-	-	-	2		
Examination Scheme (Marks)	**Theory**	**MSE**	**TE**	**ESE**	**Practical**	**CIA**	**ESE**
		-	-	-		50	-

Course Outcomes (COs) :
Upon successful completion of this course, the student will be able to:

CO1	**Deploy** advanced engineering concepts within an approved industry, research laboratory, or startup environment to execute domain-specific tasks relevant to the specialization.
CO2	**Utilize** industry-specific tools, technologies, and structured methodologies to analyze the assigned industrial process or problem statement.
CO3	**Collaborate** within multidisciplinary teams while adhering to organizational workflows, safety protocols, and ethical regulatory standards.
CO4	**Analyze** technical challenges or process inefficiencies encountered during the internship and propose structured, sustainable modifications.
CO5	**Produce** a clearly structured technical report and deliver an oral presentation summarizing the internship methodology and project outcomes.

Internship Requirements and Guidelines:

- Students shall undergo a **minimum two-week internship** after completion of Semester II and before the commencement of Semester III. The internship shall be carried out in a domain relevant to the student's specialization and may be undertaken in industries, research laboratories, start-ups, or academic research environments.
- Prior approval from the Department Internship Coordinator or Head of the Department shall be obtained before commencement. Students shall submit an internship offer letter or confirmation along with a brief outline of the proposed work to be carried out. (i.e. a request letter from the Dept and Confirmation Letter from the industry or organization to be maintained.)
- A Faculty / Project Guide will act as a mentor of student(s) to monitor, evaluate, and guide their internship activities. Student must obtain and submit an Internship Certificate from the organization to the Internship Coordinator.
- Upon completion of the internship, students shall submit a detailed internship report during Semester III. The report shall include the organization profile, objectives of the internship, description of the work carried out, tools and technologies used, problem statement, methodology adopted, results or outcomes achieved, learning experiences, challenges faced, and conclusions with future scope.
- Student should deliver a presentation on internship work as part of term assessments; submit an internship diary and report for evaluation.
- During the internship, students must maintain high **professionalism** by following workplace rules, acting ethically, and communicating professionally. They are expected to apply their **engineering skills** using industry tools, conducting experiments, and solving real-world problems. Students must actively build **industry knowledge** by learning engineering standards and project management practices. The internship serves as a platform for **professional development**, helping students improve their teamwork, time management, and networking to boost their employability. Finally, they must focus on **learning and growth** by connecting classroom theory to practical applications, keeping a daily journal, and exploring future career paths.
- Assessment shall be conducted by a panel of faculty members during Semester III. Feedback from the industry mentor, if available, may be considered as part of the evaluation process. Students shall submit the internship completion certificate, internship report (hard or soft copy), and presentation slides at the time of evaluation.

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Annasaheb Dange College of Engineering and Technology
Ashta - 416301, Dist. : Sangli, Maharashtra
(An Empowered Autonomous Institute)
Department of Computer Science and Engineering

ADCET

Course Information:

Class, Semester	S.Y. M. Tech, Semester – III						**Category**	**SS**
Course Code, Course Title	**0DESS533, Self-Learning Course I**						**Type**	**T1**
Prerequisites								
Teaching Scheme (per week)	**Lecture**		**Tutorial**		**Practical**		**Self-Study**	**Credits**
	4		-		-		4	4
Examination Scheme (Marks)	**Theory**	**MSE**	**TE**	**ESE**	**Practical**		**CIA**	**ESE**
		-	-	100			-	-

Every M.Tech. student shall successfully complete one 12-week course offered under the NPTEL Postgraduate (PG-Level) category. The course shall be recommended and approved by the concerned Department based on the student's specialization, research domain, dissertation topic, and project requirements to ensure academic relevance and alignment with the programme outcomes.

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Annasaheb Dange College of Engineering and Technology
Ashta - 416301, Dist. : Sangli, Maharashtra
(An Empowered Autonomous Institute)
Department of Mechanical Engineering

Established:

Course Information:

Class, Semester	S.Y. M.Tech, Semester – IV					**Category**	**VS**
Course Code, Course Title	**0DEVS537, Dissertation Phase - II**					**Type**	**L1**
Prerequisites	**0DEVS532**						
Teaching Scheme (per week)	**Lecture**	**Tutorial**	**Practical**	**Self Study**	**Credits**		
	-	-	28	-	14		
Examination Scheme (Marks)	**Theory**	**MSE**	**TE**	**ESE**	**Practical**	**CIA**	**ESE**
		-	-	-		50	50

Course Outcomes (COs) :
Upon successful completion of this course, the student will be able to:

CO1	**Implement** the proposed methodology/framework to solve the identified research problem.
CO2	**Conduct** experiments, simulations, testing, or analytical studies and systematically collect relevant data.
CO3	**Analyze** and interpret results using appropriate tools and techniques to validate the proposed solution.
CO4	**Evaluate** the effectiveness of the developed solution and draw meaningful conclusions based on the findings.
CO5	**Prepare** a comprehensive dissertation report and effectively communicate research outcomes through technical presentations, viva-voce, and publications.

- Students shall undertake Dissertation Phase II in Semester IV, focusing on the implementation, experimentation, analysis, validation, and completion of the research work proposed in Dissertation Phase I. The work shall be carried out individually under the guidance of the assigned faculty supervisor. During this phase, students shall implement the proposed methodology, develop the required models, prototypes, software, hardware, or experimental setup, and conduct detailed investigations as per the approved research plan.
- Students shall perform comprehensive experimentation, testing, simulation, or analysis, as applicable, and critically evaluate the results obtained. Wherever applicable, the proposed work shall be compared with existing methods to demonstrate its effectiveness, improvements, or research contributions.
- Students shall meet their faculty guide regularly to review progress, discuss results, address challenges, and receive feedback. The details of meetings, discussion points, observations, and corrective actions shall be recorded in the Project Diary/Research Log Book.
- Students shall maintain a Project File containing implementation details, experimental records, simulation results, data analysis, meeting notes, progress reports, publications, and all relevant supporting documents. Proper documentation of all work carried out shall be maintained throughout the semester.
- Students shall submit periodic progress reports as prescribed by the department. The progress of the dissertation work shall be reviewed during Progress Presentation–III and Progress Presentation–IV (Demonstration).
- Students shall prepare and submit at least one research paper based on their dissertation work to a reputed journal/ conference, or other recognized scholarly forum as per departmental guidelines. Evidence of submission/acceptance/publication shall be included in the Project File and shall form part of the continuous assessment.
- At the end of Semester IV, students shall submit a comprehensive Dissertation Phase II Report incorporating the work carried out in both phases, including problem statement, literature review, methodology, implementation, results, analysis, conclusions, research contributions, and future scope.
- Students shall present and demonstrate their work before the evaluation committee. The final assessment shall be based on the quality of implementation, technical contribution, dissertation report, demonstration, paper publication/submission, maintenance of the Project Diary and Project File, and performance in the viva-voce examination.

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- Students shall ensure that the dissertation report complies with the UGC Regulations on Academic Integrity and Prevention of Plagiarism and the norms prescribed by the University/Institute. Prior to submission, the dissertation report shall be checked using approved plagiarism detection software, and the Similarity Index Report duly verified by the guide shall be attached to the dissertation report. Only reports satisfying the permissible similarity limits shall be accepted for evaluation.

Dissertation Phase – II			
Continuous Internal Assessment (50)		End Semester Examination (50)	
Progress Presentation - III	15	Dissertation Report Phase – II	25
Progress Presentation – IV (Demonstration)	20	Viva Voce Examination	25
Paper Publication	15		

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Established: 1999	Annasaheb Dange College of Engineering and Technology Ashta - 416301, Dist. : Sangli, Maharashtra (An Empowered Autonomous Institute) Department of Computer Science and Engineering	NDCET

Course Information:

Class, Semester	S.Y. M. Tech, Semester – IV					**Category**	**SS**
Course Code, Course Title	**0DESL538, Self-Learning Course - II**					**Type**	**T1**
Prerequisites							

Teaching Scheme (per week)	**Lecture**	**Tutorial**	**Practical**	**Self Study**	**Credits**
	4	-	-	4	4

Examination Scheme (Marks)	**Theory**				**Practical**		
	MSE	**TE**	**ESE**		**CIA**	**ESE**
	-	-	100		-	-

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