# SRIT STRIP JPG - 23032022.jpg

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Title of the Course** |  | | | | |
| **Course Code** |  | | | | |
| **Class, Semester, Section** |  | | | | |
| **Course Type** | Theory/Laboratory/Skill Oriented Course/PE/OE | | | | |
| **Regulation** | SRIT R-19 | | | | |
| **Course Structure** | Theory | | | Practical | |
| Lecture | Tutorials | Credits | Laboratory | Credits |
|  |  |  |  |  |
| **Course Coordinator** |  | | | | |

**1. Course Pre-requisites:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Level** | **Course Code** | **Semester** | **Prerequisites** |
| B. Tech |  |  |  |
| B. Tech |  |  |  |
| B. Tech |  |  |  |

# 2. COURSE OVERVIEW: (Write the description of the course in 30 to 40 words)

|  |
| --- |
|  |

**3. MARKS DISTRIBUTION:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Subject** | **SEE** | **CIE** | **CAA** | **Total Marks** |
| Fluid Dynamics | 70 marks | 20 marks | 10 marks | 1. marks |

# 4. CONTENT DELIVERY / INSTRUCTIONAL METHODOLOGIES:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Power Point Presentations |  | Chalk & Talk |  | Assignments | **x** | MOOC |
| **X** | Open Ended Experiments | **x** | Seminars | **x** | Mini Project | **x** | Videos |
| **X** | Course Project | **X** | Others |  |  |  |  |
|  |  | | | | | | |

**5. EVALUATION METHODOLOGY:**

The course will be evaluated for a total of 100 marks, with 30 marks for Continuous Internal Assessment (CIA) and 70 marks for Semester End Examination (SEE). CIA is conducted for a total of 30 marks, with 20 marks for Continuous Internal Examination (CIE), and 10 marks for Continuous Alternative Assessment (CAA).

**Semester End Examination (SEE):** End examination of theory courses shall have the following pattern:

1. There shall be 6 questions and all questions are compulsory.
2. Question 1 shall contain 10 compulsory short answer questions for a total of 20 marks such that each question carries 2 marks. There shall be 2 short answer questions from each unit.
3. In each of the questions from 2 to 6, there shall be either/or type questions of 10 marks each.
4. Student shall answer any one of them.
5. The questions from 2 to 6 shall be set by covering one unit of the syllabus for each question.

The expected percentage of cognitive level of the questions is broadly based on the criteria given in below Table.

|  |  |
| --- | --- |
| Percentage of Cognitive Level | Blooms Taxonomy Level |
| % | Remember |
| % | Understand |
| % | Apply |
| 0 % | Analyze |

# Continuous Internal Assessment (CIA):

CIA is conducted for a total of 30 marks, with 20 marks for continuous internal examination (CIE) and 10 marks for Alternative Assessment Tool (AAT).

|  |  |  |  |
| --- | --- | --- | --- |
| **Component** | | Marks | Total Marks |
| **CIA** | Continuous Internal Examination – 1 (Mid-term) | 10 | 30 |
| Continuous Internal Examination – 2 (Mid-term) | 10 |
| CAA-1 | 5 |
| CAA-2 | 5 |
| **SEE** | Semester End Examination (SEE) | 70 | 70 |
| **Total Marks** | | | 100 |

# Continuous Internal Examination (CIE):

For each theory course, during the semester, there shall be two CIEs. Each CIE will be evaluated for 30 marks and will be converted to 20 marks. The first CIE will be conducted for around 50% of the syllabus and the second CIE will be conducted for the remaining syllabus. Final or consolidated CIE marks will be arrived by considering the marks secured by the student in both the CIEs with 80% weightage given to the better CIE and 20% to the other.

The duration of CIE examination is 120 minutes.

* + - * There shall be 4 questions and all are compulsory.
      * Question 1 contains 3 short answer questions from each unit with equal weightage for a total of 6 marks. The student has to answer all of them.
      * Questions 2-4 contains 3 either/ or type questions from each unit with equal weightage of 8 marks. The marks obtained by the student shall be out of 30 will be reduced to out of 20 marks. Any fraction shall be rounded off to next integer.
      * If the student is absent for the CIE examination, no re-exam shall be conducted and marks for that examination shall be considered as zero.

# Alternative Assessment Tool (AAT)

This CAA enables faculty to design own assessment patterns during the semester. The CAA enhances the autonomy (freedom and flexibility) of individual faculty and enables them to create innovative pedagogical practices. If properly applied, the CAA converts the classroom into an effective learning centre. The CAA may include assignments, seminars, term paper, open ended experiments, METE (Modeling and Experimental Tools in Engineering), five minutes video, MOOCs etc.

For each theory course, during the semester, there shall be two CAAs. Each CAA will be evaluated for 5 marks, the first CAA will be conducted before the first CIE and the second CAA will be conducted before second CIE. Final CAA marks will be arrived by adding the marks secured by the student in both the CAAs.

# The final marks for CIA (for 30 marks) = Consolidated CIE marks (for 20 marks) + Consolidated CAA marks (for 10 marks)

# 6. COURSE OBJECTIVES:

**From this course the students will try to learn:**

|  |  |
| --- | --- |
| I |  |
| II |  |
| III |  |
| IV |  |

# 7. COURSE OUTCOMES:

**After successful completion of the course, students should be able to:**

|  |  |  |
| --- | --- | --- |
| **CO** | **Course Outcomes**  At the end of the course students will be able to: | **Cognitive Level** |
| CO 1 |  |  |
| CO 2 |  |  |
| CO 3 |  |  |
| CO 4 |  |  |
| CO 5 |  |  |
| CO 6 |  |  |

# COURSE KNOWLEDGE COMPETENCY LEVEL:

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Cognitive Level** | **No. of COs mapped** | **%** |
| **1** | Remember |  |  |
| **2** | Understand |  |  |
| **3** | Apply |  |  |
| **4** | Analyze |  |  |
| **5** | Evaluate |  |  |

# 8. Program Outcomes and & Program Specific Outcomes:

|  |  |
| --- | --- |
| **Program Outcomes** | |
| **PO 1** | **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. |
| **PO 2** | **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. |
| **PO 3** | **Design/Development of Solutions:** Design solutions for complex Engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and Environmental considerations |
| **PO 4** | **Conduct Investigations of Complex Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. |
| **PO 5** | **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern Engineering and IT tools including prediction and modeling to complex Engineering activities with an understanding of the limitations |
| **PO 6** | **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. |
| **PO 7** | **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. |
| **PO 8** | **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. |
| **PO 9** | **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. |
| **PO 10** | **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. |
| **PO 11** | **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. |
| **PO 12** | **Life-Long Learning:** Recognize the need for and having the preparation and ability to engage in independent and life-long learning in the broadest context of technological change |
| **Program Specific Outcomes** | |
| **PSO1** |  |
| **PSO2** |  |
| **PSO3** |  |

**9. MAPPING OF EACH CO WITH PO(s),PSO(s):**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COs** | **PROGRAM OUTCOMES** | | | | | | | | | | | | **PSO’S** | | |
| **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** | **PO 9** | **PO 10** | **PO 11** | **PO 12** | **PSO 1** | **PSO 2** | **PSO 3** |
| CO 1 | X | - | - | - | - | - | - | - | - | - | - |  | - | X | - |
| CO 2 | X | X | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 3 | X | X | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 4 | X | X | - | - |  | - | - | - | - | - | - |  | X | X | - |
| CO 5 | X | X | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 6 | X |  | - | - |  | - | - | - | - | - | - | - | - | - |  |

# 10. JUSTIFICATIONS FOR CO – PO/ PSO MAPPING -DIRECT:

|  |  |  |  |
| --- | --- | --- | --- |
| **CO** | **POs/PSOs**  **mapped** | **Justification for mapping**  **(Students will be able to)** | **No. of key competencies** |
| CO 1 |  |  |  |
| CO 2 |  |  |  |
| CO 3 |  |  |  |
| CO 4 |  |  |  |
| CO 5 |  |  |  |
| CO 6 |  |  |  |

**11. TOTAL COUNT OF KEY COMPETENCIES FOR CO – PO/ PSO MAP- PING:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COs** | **PROGRAM OUTCOMES** | | | | | | | | | | | | **PSO’S** | | |
| **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** | **PO 9** | **PO 10** | **PO 11** | **PO 12** | **PSO 1** | **PSO 2** | **PSO 3** |
| CO 1 | 3 | - | - | - | - | - | - | - | - | - | - |  | - | 2 | - |
| CO 2 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 3 | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 4 | 3 | 5 | - | - |  | - | - | - | - | - | - |  | 2 | 2 | - |
| CO 5 | 2 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 6 | 3 | - | - | - |  | - | - | - | - | - | - | - | - | - |  |

# 12. PERCENTAGE OF KEY COMPETENCIES FOR CO – PO/ PSO

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COs** | **PROGRAM OUTCOMES** | | | | | | | | | | | | **PSO’S** | | |
| **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** | **PO 9** | **PO 10** | **PO 11** | **PO 12** | **PSO 1** | **PSO 2** | **PSO 3** |
| No. of Vital Features | | | | | | | | | | | | | | |
| 3 | 10 | 10 | 11 | 1 | 5 | 3 | 3 | 12 | 5 | 12 | 12 |  |  |  |
| CO 1 | 100 | - | - | - | - | - | - | - | - | - | - |  | - |  | - |
| CO 2 | 66.66 | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 3 | 66.66 | 30 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 4 | 100 | 50 | - | - |  | - | - | - | - | - | - |  |  |  | - |
| CO 5 | 66.66 | 60 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 6 | 100 | - | - | - |  | - | - | - | - | - | - | - | - | - |  |

**13. COURSE ARTICULATION MATRIX (PO / PSO MAPPING):**

The Correlation levels of POs and PSOs are as follows.

Correlation **Level 3:** Percentage of vital features of PO/PSO >=60%

Correlation **Level 2:** Percentage of vital features of PO/PSO >40% and < 60%.

Correlation **Level 1:** Percentage of vital features of PO/PSO >5% and <= 40%.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COs** | **PROGRAM OUTCOMES** | | | | | | | | | | | | **PSO’S** | | |
| **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** | **PO 9** | **PO 10** | **PO 11** | **PO 12** | **PSO 1** | **PSO 2** | **PSO 3** |
| No. of Vital Features | | | | | | | | | | | | | | |
| 3 | 10 | 10 | 11 | 1 | 5 | 3 | 3 | 12 | 5 | 12 | 12 |  |  |  |
| CO 1 | 3 | - | - | - | - | - | - | - | - | - | - |  | - |  | - |
| CO 2 | 3 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 3 | 3 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 4 | 3 | 2 | - | - |  | - | - | - | - | - | - |  |  |  | - |
| CO 5 | 3 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CO 6 | 3 |  | - | - |  | - | - | - | - | - | - | - | - | - |  |

# 14. ASSESSMENT METHODOLOGY-DIRECT:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CIE Exams |  | Laboratory Practices |  | Term Paper |  |
| SEE Exams |  | Student Viva |  | 5 minutes video |  |
| Seminars |  | Certification |  | Course Project |  |
| Assignments |  | Open ended experiments |  | Others |  |

**15. ASSESSMENT METHODOLOGY-INDIRECT:**

|  |  |  |  |
| --- | --- | --- | --- |
| Assessment of mini projects by experts |  | Course Exit Survey |  |

# 16. SYLLABUS:

# Google Classroom Link:

**17. Academic Calendar & Lesson Plan:**

**Academic Calendar:**

|  |  |  |
| --- | --- | --- |
| I Spell of instructions |  |  |
| I CIE |  |  |
| I Spell of instructions |  |  |
| II CIE |  |  |
| Preparation and Practicals |  |  |
| End Examinations |  |  |

**Lesson Plan:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Topics to be covered** | **Mode of Delivery** | **Periods Required** | **Books followed** | **Scheduled Date** |
| **Unit 1:** | | | | | |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **4** |  |  |  |  |  |
| **5** |  |  |  |  |  |
| **6** |  |  |  |  |  |
| **7** |  |  |  |  |  |
| **8** |  |  |  |  |  |
| **9** |  |  |  |  |  |
| **Unit 2:** | | | | | |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **5** |  |  |  |  |  |
| **6** |  |  |  |  |  |
| **7** |  |  |  |  |  |
| **8** |  |  |  |  |  |
| **Unit 3:** | | | | | |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **4** |  |  |  |  |  |
| **5** |  |  |  |  |  |
| **6** |  |  |  |  |  |
| **7** |  |  |  |  |  |
| **Unit 4:** | | | | | |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **4** |  |  |  |  |  |
| **5** |  |  |  |  |  |
| **6** |  |  |  |  |  |
| **7** |  |  |  |  |  |
| **Unit 5:** | | | | | |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **4** |  |  |  |  |  |
| **5** |  |  |  |  |  |
| **6** |  |  |  |  |  |
| **7** |  |  |  |  |  |
| **8** |  |  |  |  |  |
| **9** |  |  |  |  |  |

**18. Content beyond the Syllabus**

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Topics covered beyond the syllabus** | **COs Mapped** |
| **1** |  |  |
| **2** |  |  |
| **3** |  |  |
| **4** |  |  |
| **5** |  |  |

# Course Coordinator Head of the Department