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|---|--|--|----------------------------|-----------|
| <b>Course title:</b> Independent Study  |  |  |                            |           |
| <b>Course code:</b> ENR 120   | <b>No. of credits:</b> 4   | <b>L-T-P:</b> 0-16-88                      | <b>Learning hours:</b> 104 |           |
| <b>Pre-requisite course code and title (if any):</b>  |  |  |                            |           |
| <b>Department:</b> Sustainable Engineering  |  |  |                            |           |
| <b>Course coordinator:</b> Prof. Naqui Anwer  |  | <b>Course Instructor:</b> assigned faculty |                            |           |
| <b>Contact:</b> naqui.anwer@terisas.ac.in   |  |  |                            |           |
| <b>Course type:</b> Core  |  | <b>Course offered in:</b> Semester 2       |                            |           |
| <b>Course description</b><br>The independent study is a 4-credit course offered to the students registered for the PG Diploma in Renewable Energy and Management (PGDREM). The student will conduct a study independently under the supervision of a faculty member. The supervisor can be any faculty member from TERI School of Advanced Studies. Students are expected to get consent from the supervisor before they register for the course. The course will be conducted through submission and presentation of synopsis by August 2nd week, mid-term presentation by October 4th week and final report submission and presentation by November 4th week. |  |  |                            |           |
| <b>Course objective(s)</b>  |  |  |                            |           |
| <ul style="list-style-type: none"> <li>▪ To enable students carry out research studies independently under supervised self-learning approach</li> <li>▪ To help students obtain advanced understanding on specific system/process/scenarios inrenewable energy, energy systems, policy &amp; regulation and allied areas.</li> <li>▪ To enable students to study the contemporary developments in the field of renewable energy and allied areas.</li> </ul>  |  |  |                            |           |
| <b>Course contents</b>  |  |  |                            |           |
| <b>Module</b>   | <b>Topic</b>   | <b>L</b>                                   | <b>T</b>                   | <b>P</b>  |
| 1   | Preparation of a synopsis document and a presentation having the following: <ul style="list-style-type: none"> <li>• Title of the study</li> <li>• Rationale for the study and Research objectives (Maximum 3)</li> <li>• Literature review</li> <li>• Methodology</li> <li>• Expected Outcome</li> <li>• Timeline</li> <li>• References</li> </ul>  | 0  | 8                          | 18        |
| 2   | Work focused on the approved synopsis leading to mid-term presentation of work comprising of the progress made and understanding developed by the student on the specific topic. It includes literature survey or experimental work to be conducted to achieve the expected outcomes.  | 0  | 4                          | 48        |
| 3   | Completion of remaining work and preparation of Independent Study Reportcontaining the following and final presentation: <ul style="list-style-type: none"> <li>• Abstract</li> <li>• Introduction</li> <li>• Study Area</li> <li>• Aim and Objectives</li> <li>• Methodology</li> <li>• Results and Discussions</li> <li>• Conclusions and Limitations</li> <li>• Future Scope of Work</li> <li>• References</li> </ul> Discussion and presentation of research work before the faculty panel | 0  | 4                          | 22        |
|   | <b>Total</b>   | <b>0</b>                                   | <b>16</b>                  | <b>88</b> |
| <b>Evaluation criteria</b>  |  |  |                            |           |
| Test 1: Synopsis document and presentation: 15% (August 2 <sup>nd</sup> week)   |  |  |                            |           |

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|--|-----|---------------------------------|
| Test 2: Mid-term presentation:   | 15% | (October 4 <sup>th</sup> week)  |
| Test 3: Final evaluation   |     | (November 4 <sup>th</sup> week) |
| Presentation:  | 30% |                                 |
| Report:  | 30% |                                 |
| Test 4: Review paper   | 10% | (at the end of semester)        |
| <ul style="list-style-type: none"> <li>• Synopsis will be evaluated by the supervisor and/or panel of faculty members.</li> <li>• Mid-term test will be evaluated by the supervisor and/or panel of faculty members.</li> <li>• Presentation made to supervisor and/or panel of faculty members</li> <li>• Report submission at the end of the term evaluated by supervisor and/or panel of faculty members</li> </ul> |     |                                 |
| <b>Learning outcomes</b>   |     |                                 |
| After completing the course, the students will be able to:   |     |                                 |
| <ul style="list-style-type: none"> <li>• Provide comprehensive knowledge about the topics of the study (Test 1)</li> <li>• Design and implement the concepts related to the study (Test 2 and 3)</li> <li>• Test the systems (if any) with wholistic approach (Test 2 and 3)</li> </ul>  |     |                                 |
| <b>Pedagogical approach</b>  |     |                                 |
| Self-learning; interaction with supervisor; literature review; interaction with experts  |     |                                 |
| <b>Materials</b>   |     |                                 |
| Peer-reviewed journal articles, Reputed conference proceedings, Reports related to the specific project. Learning materials provided by supervisor   |     |                                 |
| <b>Additional information (if any)</b>   |     |                                 |
| <ol style="list-style-type: none"> <li>1. The final report should be around 40 pages</li> <li>2. A guideline along with important dates and format will be notified by the supervisor or course/programme coordinator.</li> <li>3. Student needs to check plagiarism using software (e.g. Turnitin) and submit the report to supervisor before final submission</li> </ol>   |     |                                 |
| <b>Student responsibilities</b>  |     |                                 |
| Self learning, attendance; Discipline; Research Ethics, etc.   |     |                                 |
| Regular discussion with supervisor and adhering to the timeline  |     |                                 |

### Course Reviewers

Dr. Milap Punia, Associate Professor, Jawaharlal Nehru University, New Delhi

Dr. P.P. Pani, Assistant Professor, Jawaharlal Nehru University, New Delhi

Dr. R.D. Garg, Associate Professor, Indian Institute of Technology, Roorkee

Dr. T.P. Singh, Assistant Professor, Symbiosis Institute of Geoinformatics, Pune