

## List of Compulsory and Elective courses for Minor in SEE

| Name of courses                                                                             | Credits<br>(L-T-P-C) |
|---------------------------------------------------------------------------------------------|----------------------|
| <b>Compulsory Course(s)</b>                                                                 |                      |
| SEE-605: An Introduction to Sustainable Energy Technologies (with Laboratory)               | 2-0-3-9              |
| <b>Elective Course(s)</b>                                                                   |                      |
| SEE-601: Thermo-Fluid Engineering                                                           | 3-0-0-9              |
| SEE-602: Physics of Energy Materials                                                        | 3-0-0-9              |
| SEE-603: Electrical Power Engineering                                                       | 3-0-0-9              |
| SEE-604: Thermodynamics of Energy Systems**                                                 | 3-0-0-9              |
| SEE-606: Electrochemical Energy Systems                                                     | 3-0-0-9              |
| SEE-607: Hydrogen Energy: Production, Storage and Utilization                               | 3-0-0-9              |
| SEE-608: Introduction to Bioenergy and Biofuels                                             | 3-0-0-9              |
| SEE-609: Mathematical and Computational Tools for Engineering                               | 3-0-0-9              |
| SEE-610: Introduction to Materials Modelling and Simulations                                | 3-0-0-9              |
| SEE-611: Energy Systems: Modelling and Analysis                                             | 3-0-0-9              |
| SEE-612: Manufacturing of energy systems                                                    | 3-0-0-9              |
| SEE 613: Solar Photovoltaics                                                                | 3-0-0-9              |
| SEE-614: Wind Energy                                                                        | 3-0-0-9              |
| SEE-615: Solar Thermal Engineering                                                          | 3-0-0-9              |
| SEE-616: Renewables Integrated Smart Power System                                           | 3-0-0-9              |
| SEE-617: Introduction to Sustainable Energy Policy                                          | 3-0-0-9              |
| SEE-619: Finite Volume Methods for Engineers                                                | 3-0-0-9              |
| SEE-620: Heat Driven Cooling Systems                                                        | 3-0-0-9              |
| SEE-621: Biomass Conversion and Biorefineries                                               | 3-0-0-9              |
| SEE-622: Sustainable Energy- Enabling Net Zero Emissions                                    | 3-0-0-9              |
| SEE-623: Fuel Cell Electrical Energy Systems                                                | 3-0-0-9              |
| SEE-624: Design Strategies for Net-Zero Energy Buildings                                    | 3-0-0-9              |
| SEE-625: Structural, Microstructural and Spectroscopic Characterization of Materials        | 3-0-0-9              |
| SEE-626M: Ecological Principles and Biodiversity for Sustainability                         | 3-0-0-5              |
| SEE-627: Electric Vehicles                                                                  | 3-0-0-9              |
| SEE-628: Policy Processes and Analytical Methods: Application to Climate Policies           | 3-0-0-9              |
| SEE-629M: Ecology, Equity and the Economy                                                   | 3-0-0-5              |
| SEE-631: Sustainable Forest Management                                                      | 3-0-0-9              |
| SEE-632: Heating, Ventilation, and Air-conditioning of Buildings                            | 3-0-0-9              |
| SEE-633: Power electronics for electric vehicles                                            | 3-0-0-9              |
| SEE-634: Critical Material Resources for Clean Energy Transition                            | 3-0-0-9              |
| SEE-635: Carbon Capture Utilization and Storage (CCUS)                                      | 3-0-0-9              |
| SEE-636: Catalysis for Clean Energy                                                         | 3-0-0-9              |
| SEE-637: Recycling Energy Materials                                                         | 3-0-0-9              |
| SEE-638: Techno-Economic Assessment for Low Carbon Transition: Market, Policy, and Pathways | 3-0-0-9              |
| SEE-641: Structure, Interfaces, and Phase Stability in Functional Materials                 | 3-0-0-9              |

and any other SEE6XX numbered courses added later

### **Total Minimum credits requirement: 27**

**Remark:** As per this template, a student must take the compulsory course and minimum 2 courses from remaining list to complete total minimum credit requirement. Students should not take those electives which have more than 50% overlap with courses that they have already completed.

\*\*not allowed as an elective course for those students who have already taken ESO201 (or another similar course on Thermodynamics).