# THERMAL ENERGY SYSTEM DESIGN AND ANALYSIS UNDERGRADUATE ACADEMIC CERTIFICATE

This certificate is designed to provide undergraduate students with specialized knowledge and skills in thermal energy system design engineering, a core area of the mechanical engineering industry with applications in diverse fields. The program is intended to prepare students for careers in thermal energy system design or related fields, as well as future graduate studies in the field of thermal energy system design.

All required coursework must be completed with a grade of C or better (O-10-a (https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/)).

| Code | Title | Hours |
|---|---|---|
| ME 4350 | Thermal Energy Systems Design | 3 |
| Select 9 credits from the following: | | 9 |
| ME 4120 | Gas Dynamics | |
| ME 4140 | HVAC Systems | |
| ME 4170 | Turbomachinery | |
| ME 4200 | Fluid Dynamics | |
| ME 4290 | Combustion and Aeropropulsion | |
| ME 4330 | Combustion Engine Systems | |
| ME 4360 | Sustainable Energy Sources and Systems | |
| ME 4500 | Fundamentals of Computational Fluid Dynamics | |
| ME 4510 | Experimental Methods in Fluid Dynamics | |
| **Total Hours** | | **12** |

**Courses to total 12 credits for this certificate**

1. Develop an ability to design a mechanical/thermal/fluid system, component, or process to meet desired needs.
2. Develop an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
3. Develop an ability to work professionally in both thermal-fluids systems areas, including the design and realization of such systems.