**Course number and name: MTSE 4951: Honors College Capstone Thesis**

**Credits and contact hours**

3 Credit hours. Hours set by appointment

May be substituted for HNRS 4000. Course may be taken only once for Honors College credit.

**Instructor’s or course coordinator’s name**

Any faculty in the Department of Materials Science and Engineering

**Text book, title, author, and year**

None specific text book required.

1. *Other supplemental materials*

To be provided by individual faculty to support the Honors College Capstone Thesis.

**Specific Course Information**

1. *Brief description of the content of the course (catalog description)*

Major research project prepared by the student under the supervision of a faculty member and presented in standard thesis format. An oral defense is required of each student for successful completion of the thesis.

1. *Prerequisites or co-requisites*

Completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College.

1. *Indicate whether a required, elective, or selected elective course in the program*

Elective

**Specific goals for the course**

1. *Specific outcomes of instruction*
2. *Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes that are addressed by the course.*

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|  | **Program/ABET Outcome** | **a** | **b** | **c** | **d** | **e** | **f** | **g** | **h** | **i** | **j** | **k** |
| **Specific Course Learning Outcome** |  | **x** | **x** |  |  | **x** |  | **x** |  |  | **x** | **x** |
| 1. Students will use modern analytical or computation techniques to solve independently a problem identified and developed jointly with the instructor of record.
 |  | **x** | **x** |  |  | **x** |  |  |  |  | **x** | **x** |
| 1. Students will make and communicate assessments of the “state-of-the-art” in the specific area of their thesis.
 |  |  |  |  |  |  |  | **x** |  |  | **x** |  |
| 1. Students will communicate knowledge gained through a final written thesis and oral defense.
 |  |  |  |  |  | **x** |  | **x** |  |  | **x** |  |

**Brief list of topics to be covered**

Dependent upon the precise nature of the special problem topic. At a minimum, the student is expected to be exposed to:

* Theoretical background related to the specific content of the special problems
* Identification of modern problem to be solved throughout the capstone effort
* Analytical and/or computational methods
* Modern approaches related to experimental methods, testing or analysis