

## Emphasis - EE (Electromagnetics)

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### Ph.D. in Engineering Science Description

The Ph.D. in engineering science is offered in a number of emphasis areas: aeroacoustics, chemical engineering, civil engineering, computational hydroscience, computer science, electrical engineering, electromagnetics, environmental engineering, geology, geological engineering, hydrology, mechanical engineering, and material science and engineering.

**Minimum Total Credit Hours: 66**

#### Course Requirements

A student must complete the requirements for one of the emphasis areas. All doctoral programs require completion of a comprehensive examination, dissertation prospectus, and a dissertation. See the department chair or adviser for specific requirements for an emphasis area.

### Emphasis - EE (Electromagnetics) Description

A Ph.D. in engineering science with emphasis in electromagnetics prepares a student with advanced technical knowledge and communication skills for pursuing a career in industry, engineering research and development, or public/government service. Students entering the program come from a variety of engineering and nonengineering disciplines such as physics and mathematics.

#### Course Requirements

The Ph.D. with an emphasis in electromagnetics requires 36 semester hours in the major field out of a required total of 48 semester hours of graded course work beyond the bachelor's degree. Included in these requirements are the following core courses: Advanced Electrodynamics (Engr 721); Numerical Methods in Electromagnetics (Engr 626); Passive Microwave Circuits (Engr 723); and Seminar (Engr 695, two semester hours). Other courses are to be taken in specific areas of electromagnetics, including microwave circuits, antennas, electromagnetics, and computational electromagnetics. These related courses include Engr 590, Engr 593, Engr 622, Engr 624, Engr 627, Engr 655, Engr 687, Engr 691, Engr 693 (no more than 2 semester hours), Engr 699, Engr 719, Engr 725, Engr 728, Engr 729, or other courses with approval. The candidate must take 12 semester hours of graded courses in a minor area (mathematics, physics, or another appropriate field with approval).

#### Other Academic Requirements

A written comprehensive exam is taken during the first year of residency.

#### Degree Requirements

The academic regulations for this degree program, as entered in the University of Mississippi Catalog, are in effect for the current or selected academic year and semester. The University of Mississippi reserves the right to 1) change or withdraw courses; 2) change rules for registration, instruction, and graduation; and 3) change other regulations affecting the student body at any time.

### Ph.D. in Engineering Science

| REQUIREMENT                 | HOURS | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">Engr 797</a>    | 18    | Complete at least 18 hours of dissertation credit ( <a href="#">Engr 797</a> ).                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Dissertation prospectus     |       | Student must submit and defend a dissertation prospectus.                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Oral defense                |       | Every candidate for the Ph.D. degree must successfully pass a final oral examination (defense of dissertation) administered by the student's dissertation committee and scheduled by the Graduate School.                                                                                                                                                                                                                                                                                          |
| Select an emphasis          |       | Student must enroll in one of the PhD in Engineering Science emphasis areas: aeroacoustics, chemical engineering, civil engineering, computational hydroscience and engineering, computer science, electrical engineering, electromagnetics, environmental engineering, geological engineering, geology, hydrology, materials science and engineering, or mechanical engineering.                                                                                                                  |
| Submit Dissertation         |       | Student must submit a dissertation to his/her GPC/Chair. The dissertation must conform to the regulations governing style set forth in "A Manual of Thesis and Dissertations Preparations", available in the Graduate School Office. Two copies of the dissertation must be presented to the Graduate School after the final examination for the doctorate has been accepted and before the beginning of the regular examination period for the semester in which the candidate plans to graduate. |
| GPA requirements            |       | A cumulative average of not less than 3.0 (B) must be achieved in all graduate work taken.                                                                                                                                                                                                                                                                                                                                                                                                         |
| Engineering Dean's approval |       | This Degree Audit program is an advising tool only. The student must still apply for a degree by submitting their degree application to <a href="mailto:engineer@olemiss.edu">engineer@olemiss.edu</a> . The dean's office will make the final certification that the courses listed on the application qualify the student for graduation. The Dean's Office will also determine if other university requirements (GPA, etc.) have been met.                                                      |

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| REQUIREMENT                      | HOURS | DESCRIPTION                                                                 |
|----------------------------------|-------|-----------------------------------------------------------------------------|
| <a href="#">Engr 619</a> - C min | 3     | Student must complete <a href="#">Engr 619</a> with a grade of C or better. |



| REQUIREMENT                      | HOURS | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">Engr 621</a> - C min | 3     | Student must complete <a href="#">Engr 621</a> with a grade of C or better.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <a href="#">Engr 623</a> - C min | 3     | Student must complete <a href="#">Engr 623</a> with a grade of C or better.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <a href="#">Engr 625</a> - C min | 3     | Complete <a href="#">Engr 625</a> with a grade of C or better.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <a href="#">Engr 626</a> - C min | 3     | Student must complete <a href="#">Engr 626</a> with a grade of C or better.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <a href="#">Engr 695</a> - C min | 1     | Student must complete <a href="#">Engr 695</a> with a grade of C or better.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 26 hrs course work               | 26    | Student must complete an additional 26 hours of course work chosen from the following: <a href="#">Engr 590</a> , <a href="#">Engr 593</a> , <a href="#">Engr 622</a> , <a href="#">Engr 624</a> , <a href="#">Engr 625</a> , <a href="#">Engr 627</a> , <a href="#">Engr 628</a> , <a href="#">Engr 655</a> , <a href="#">Engr 687</a> , <a href="#">Engr 691</a> , <a href="#">Engr 693</a> (no more than 2 semester hours), <a href="#">Engr 699</a> , <a href="#">Engr 729</a> , or other courses. All courses must be approved by the student's GPC/Chair. |
| Comprehensive exam               |       | Student must pass a written comprehensive examination.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Minor area                       | 12    | Student must complete at least 12 semester hours of graded courses in a minor area (mathematics, physics, or another appropriate field). All courses must be approved by the student's GPC/Chair.                                                                                                                                                                                                                                                                                                                                                               |

