# M.S. in Engineering Science

Overview
Degree Requirements

## 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.

## M.S. in Engineering Science

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Pass oral exam | | Student must pass a final oral examination. |
| Select an emphasis | | Student must enroll in one of the MS 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, mechanical engineering, or telecommunication. |
| 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 engineer@olemiss.edu. 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. |

## Emphasis - Mechanical Engineering

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis, the project or the other option for the MS in Engineering Science with Emphasis in Mechanical Engineering. For the thesis or project option, the student must also submit a thesis or research project to his/her GPC/Chair. |
| Other option | 30 | For the other option, student must complete at least 30 hours of graded course work. All course work must be approved by the student's GPC/Chair. |
| Project option | 30 | For the project option, the student must complete at least 27 hours of graded course work and one 3-hour project or research course. All course work must be approved by the student's GPC/Chair. |
| Thesis option | 30 | For the thesis option, the student must complete at least 24 hours of graded course work and at least 6 hours of thesis credit. All course work must be approved by the student's GPC/Chair. |
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the project option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - Materials Science and Engr.

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis or the non-thesis option for the MS in Engineering Science with Emphasis in Materials Science and Engineering. The student must also submit a thesis or research project to his/her GPC/Chair. |
| Non-thesis option | 30 | For the non-thesis option, the student must complete at least 27 hours of graded course work and one 3-hour research or project course. All course work must be approved by the student's GPC/Chair |
| Thesis option | 30 | For the thesis option, the student must complete at least 24 hours of graded course work and at least 6 hours of thesis credit. All course work must be approved by the student's GPC/Chair |
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the non-thesis option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - Telecommunications

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Engr 697 | 6 | Complete at least 6 hours of thesis credit (Engr 697). |
| 24 hrs course work | 24 | Student must complete at least 24 hours of course work as approved by the program director. Courses can be taken in wireless communications, digital communications, communications networking, probabilistic modeling, telecommunications policy, and management information systems. |
| Oral defense | | Student must orally defend his/her thesis. |

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| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Submit thesis | | Student must submit a thesis to his/her GPC/Chair. Regulations governing the style, format, paper, abstract and other matters may be found in "A Manual of Thesis and Dissertations" available in the Graduate School Office. After the oral examination has been accepted, the student must present to the Graduate School two unbound copies of the thesis. A copy of the abstract and the thesis binding fee receipt must accompany the copies of the thesis. |

## Emphasis - Computational Hydroscience

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis or the non-thesis option for the MS in Engineering Science with Emphasis in Computational Hydroscience and Engineering. The student must also submit a thesis or research project to his/her GPC/Chair. |
| Non-thesis option | 30 | For the non-thesis option, the student must complete at least 30 hours of graded course work including 12 hours of courses in numerical methods, fluid dynamics, transport phenomena, and hydrosciences, 15 hours of approved electives, and 3 hours research project and report. All course work must be approved by the student's GPC/Chair. |
| Thesis option | 30 | For the thesis option, the student must complete at least 24 hours of graded course work including 12 hours of courses in numerical methods, fluid dynamics, transport phenomena, and hydrosciences, and 12 hours of approved electives. The student must also complete at least 6 hours of thesis credit. All course work must be approved by the student's GPC/Chair. |
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the non-thesis option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - Geology

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis or the non-thesis option for the MS in Engineering Science with Emphasis in Geology. The student must also submit a thesis or research project to his/her GPC/Chair. |
| Non-thesis option | 30 | For the non-thesis option, the student must complete at least 27 hours of graded course work and one 3-hour project or research course. All course work must be approved by the student's GPC/Chair. |
| Thesis option | 30 | For the thesis option, the student must complete at least 24 hours of graded course work and at least 6 hours of thesis credit. All course work must be approved by the student's GPC/Chair. |
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the non-thesis option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - Geological Engineering

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis or the non-thesis option for the MS in Engineering Science with Emphasis in Geological Engineering. The student must also submit a thesis or research project to his/her GPC/Chair. |
| Non-thesis option | 30 | For the non-thesis option, the student must complete at least 27 hours of graded course work and one 3-hour project or research course. All course work must be approved by the student's GPC/Chair. |
| Thesis option | 30 | For the thesis option, the student must complete at least 24 hours of graded course work and at least 6 hours of thesis credit. All course work must be approved by the student's GPC/Chair. |
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the non-thesis option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - Electrical Engineering

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis or the non-thesis option for the MS in Engineering Science with Emphasis in Electrical Engineering. The student must also submit a thesis or research project to his/her GPC/Chair. |
| Non-thesis option | 30 | For the non-thesis option, the student must complete at least 24 hours of graded course work and one 3-hour project or research course. All course work must be approved by the student's GPC/Chair. |
| Thesis option | 30 | For the thesis option, the student must complete at least 24 hours of graded course work where 3 to 6 hours can be in an approved minor area, up to 3 hours can come from research credit outside the thesis and 1 hour must be in seminar. The student must also complete at least 6 hours of thesis credit. All course work must be approved by the student's GPC/Chair. |
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the non-thesis option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - EE (Electromagnetics)

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| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis or the non-thesis option for the MS in Engineering Science with Emphasis in Electromagnetics. The student must also submit a thesis or research project to his/her GPC/Chair. |
| Non-thesis option | 30 | For the non-thesis option, the student must complete at least 13 hours of core course including Engr 626, Engr 621, Engr 619, Engr 623 and Engr 695; 5 semester hours chosen from Engr 590, Engr 593, Engr 622, Engr 624, Engr 625, Engr 627, Engr 628, Engr 687, Engr 691, Engr 693, and Engr 699; and 9 hours of electives including 3 to 6 hours in a minor field and a technical elective. The student must also complete at least one 3-hour project or research course. All course work must be approved by the student's GPC/Chair. |
| Thesis option | 30 | For the thesis option, the student must complete at least 13 hours of core course including Engr 626, Engr 621, Engr 619, Engr 623 and Engr 695; 5 semester hours chosen from Engr 590, Engr 593, Engr 622, Engr 624, Engr 625, Engr 627, Engr 628, Engr 687, Engr 691, Engr 693, and Engr 699; and 6 hours of electives including 3 to 6 hours in a minor field. The student must also complete at least 6 hours of thesis credit. All course work must be approved by the student's GPC/Chair. |
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the non-thesis option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - Computer Science

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis or the non-thesis option for the MS in Engineering Science with Emphasis in Computer Science. The student must also submit a thesis or research project to his/her GPC/Chair. |
| Non-thesis option | 30 | For the non-thesis option, the student must complete at least 27 hours of graded course work and 3 hours of independent study research projec credit. Courses should be selected from the areas of application, systems, and theory with two courses from one area and at least one course from the other two areas. At least 9 semester hours of course work must be from computer science courses at the 600-level. All course work must be approved by the student's GPC/Chair. |
| Thesis option | 30 | For the thesis option, the student must complete at least 24 hours of graded course work and 6 hours of thesis credit. Courses should be selected from the areas of application, systems, and theory with two courses from one area and at least one course from the other two areas. At least 9 semester hours of course work must be from computer science courses a the 600 level. All course work must be approved by the student's GPC/Chair. |
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the non-thesis option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - Chemical Engineering

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Ch E 515 | 3 | Complete at least three semesters (1 hour each) of the Research Seminar (Ch E 515). |
| Ch E 560 - C min | 3 | Complete Ch E 560 with a grade of C or better. |
| Ch E 561 - C min | 3 | Complete Ch E 561 with a grade of C or better. |
| Engr 665 - C min | 3 | Complete Engr 665 with a grade of C or better. |
| Engr 669 - C min | 3 | Completer Engr 669 with a grade of C or better. |
| Engr 697 | 6 | Complete at least 6 hours of thesis credit (Engr 697). |
| Elective courses | 9 | Student must complete at least 9 hours of elective courses. Each course must be approved by the student's GPC/Chair. |
| Oral defense | | Student must orally defend his/her thesis. |
| Submit thesis | | The student must submit a thesis to his/her GPC/Chair. Regulations governing the style, format, paper, abstract and other matters may be found in "A Manual of Thesis and Dissertations" available in the Graduate School Office. After the oral examination has been accepted, the student must present to the Graduate School two unbound copies of the thesis. A copy of the abstract and the thesis binding fee receipt must accompany the copies of the thesis. |

## Emphasis - Aeroacoustics

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis or the non-thesis option for the MS in Engineering Science with Emphasis in Aeroacoustics. The student must also submit a thesis or research project to his/her GPC/Chair. |
| Non-thesis option | 30 | For the non-thesis option, the student must complete at least 30 hours of graded course work including 6 hours of math-related courses and 3 hours of a design-oriented project course. All courses must be approved by the student's GPC/Chair. |
| Thesis option | 30 | For the thesis option, the student must complete at least 24 hours of graded course work including 6 hours of math-related courses. Student must also complete at least 6 hours of thesis credit. All course work must be approved by the student's GPC/Chair. |

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| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the non-thesis option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - Civil Engineering

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis or the non-thesis option for the MS in Engineering Science with Emphasis in Civil Engineering. The student must also submit a thesis or research project to his/her GPC/Chair. |
| Non-thesis option | 30 | For the non-thesis option, the student must complete at least 27 hours of graded course work including a course in mathematics, a course in numerical method, and a course in mechanics. The student must also complete a 3-hour project or research course. All course work must be approved by the student's GPC/Chair. |
| Thesis option | 30 | For the thesis option, the student must complete at least 24 hours of graded course work including a course in mathematics, a course in numerical method, and a course in mechanics. The student must also complete at least 6 hours of thesis credit. All course work must be approved by the student's GPC/Chair. |
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the non-thesis option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - Environmental Engineering

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Thesis vs non-thesis | | Student must complete either the thesis or the non-thesis option for the MS in Engineering Science with Emphasis in Environmental Engineering. The student must also submit a thesis or research project to his/her GPC/Chair. |
| Non-thesis option | 30 | For the non-thesis option, the student must complete at least 27 hours of graded course work including a course in mathematics, a couse in numerical ethod, and a course in mechanics. The student must also complete at least one 3-hour project or research course. All course work must be approved by the student's GPC/Chair. |
| Thesis option | 30 | For the thesis option, the student must complete at least 24 hours of graded course work including a course in mathematics, a couse in numerical method, and a course in mechanics. The student must also complete at least 6 hours of thesis credit. All course work must be approved by the student's GPC/Chair. |
| Thesis or project | | For the thesis option, the student must submit a thesis to his/her GPC/Chair. For the non-thesis option, the student must submit a research project to his/her GPC/Chair. |

## Emphasis - Hydrology

| REQUIREMENT | HOURS | DESCRIPTION |
|---|---|---|
| Engr 636 - C min | 3 | Complete Engr 636 with a grade of C or better. |
| Engr 645 - C min | 3 | Complete Engr 645 with a grade of C or better. |
| Engr 697 | 6 | Complete at least 6 hours of thesis credit (Engr 697). |
| G E 503 - C min | 3 | Complete G E 503 with a grade of C or better. |
| Geol 505 - C min | 4 | Complete Geol 505 with a grade of C or better. |
| Add'l courses | 5 | Student must complete an additional 5 hours as approved by the student's committee. |
| Elective courses | 6 | Student must complete at least 6 hours of electives chosen from the following: Geol 518, C E 541, C E 542, C E 543, Ch E 545, Geol 615, Engr 537, Engr 616, Engr 637, or Engr 648). Each course must be completed with a grade of C or better. |
| Oral defense | | Student must orally defend his/her thesis. |
| Submit thesis | | Student must submit a thesis to his/her GPC/Chair. Regulations governing the style, format, paper, abstract and other matters may be found in "A Manual of Thesis and Dissertations" available in the Graduate School Office. After the oral examination has been accepted, the student must present to the Graduate School two unbound copies of the thesis. A copy of the abstract and the thesis binding fee receipt must accompany the copies of the thesis. |

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