

# James Worth Bagley College of Engineering

Dean: Dr. Jason M. Keith

Associate Dean for Research and Graduate Studies: Dr. Kari Babski-Reeves

250 McCain

Box 9544

Mississippi State, MS 39762

Telephone: 662-325-2270

Fax: 662-325-8573

E-mail: kari@bagley.msstate.edu or josie@bagley.msstate.edu

Website: <http://www.engr.msstate.edu> (<http://www.bagley.msstate.edu>)

## Degree and Certificate Programs

| Department                                   | Degree and Major                                  | Concentration          | Thesis | Non-Thesis | Starkville | Meridian | Distance |
|--|---|------------------------|--------|------------|------------|----------|----------|
| Aerospace Engineering                        | Master of Science - Aerospace Engineering         |                        | X      | X          | X          |          | X        |
| Aerospace Engineering                        | Doctor of Philosophy - Engineering                | Aerospace Engineering  |        |            | X          |          | X        |
| Agriculture and Biological Engineering       | Master of Science - Biological Engineering        |                        | X      |            | X          |          |          |
| Agriculture and Biological Engineering       | Master of Science - Biomedical Engineering        |                        | X      |            | X          |          |          |
| Agriculture and Biological Engineering       | Doctor of Philosophy - Engineering                | Biological Engineering |        |            | X          |          |          |
| Agriculture and Biological Engineering       | Doctor of Philosophy - Biomedical Engineering     |                        |        |            | X          |          |          |
| Dave C. Swalm School of Chemical Engineering | Master of Science - Chemical Engineering          |                        | X      | X          | X          |          |          |
| Dave C. Swalm School of Chemical Engineering | Doctor of Philosophy - Engineering                | Chemical Engineering   |        |            | X          |          | X        |
| Civil & Environmental Engineering            | Master of Science - Civil Engineering             |                        | X      | X          | X          |          | X        |
| Civil & Environmental Engineering            | Doctor of Philosophy - Engineering                | Civil Engineering      |        |            | X          |          | X        |
| Computer Science & Engineering               | Master of Science - Computer Science              |                        | X      | X          | X          |          | X        |
| Computer Science & Engineering               | Master of Science - Cyber Security and Operations | Cyber Defense          |        | X          | X          |          | X        |
| Computer Science & Engineering               | Master of Science - Cyber Security and Operations | Cyber Operations       |        | X          | X          |          | X        |

|                                   |  |                            |   |   |   |  |  |   |
|-----------------------------------|--|----------------------------|---|---|---|--|--|---|
| Computer Science & Engineering    | Doctor of Philosophy - Computer Science                    |                            |   |   | X |  |  | X |
| Electrical & Computer Engineering | Master of Science - Electrical and Computer Engineering    |                            | X | X | X |  |  | X |
| Electrical & Computer Engineering | Doctor of Philosophy - Electrical and Computer Engineering |                            |   |   | X |  |  | X |
| Industrial & Systems Engineering  | Master of Science - Industrial Engineering                 | Human Factors & Ergonomics | X | X | X |  |  | X |
| Industrial & Systems Engineering  | Master of Science - Industrial Engineering                 | Industrial Systems         | X | X | X |  |  | X |
| Industrial & Systems Engineering  | Master of Science - Industrial Engineering                 | Management Systems         | X | X | X |  |  | X |
| Industrial & Systems Engineering  | Master of Science - Industrial Engineering                 | Manufacturing Systems      | X | X | X |  |  | X |
| Industrial & Systems Engineering  | Master of Science - Industrial Engineering                 | Operations Research        | X | X | X |  |  | X |
| Industrial & Systems Engineering  | Doctor of Philosophy - Industrial and Systems Engineering  |                            |   |   | X |  |  | X |
| Mechanical Engineering            | Master of Science - Mechanical Engineering                 |                            | X | X | X |  |  | X |
| Mechanical Engineering            | Doctor of Philosophy - Engineering                         | Mechanical Engineering     |   |   | X |  |  | X |
| Interdisciplinary                 | Master of Engineering - Engineering                        |                            | X | X |   |  |  | X |
| Interdisciplinary                 | Master of Science - Computational Engineering              |                            | X | X | X |  |  | X |
| Interdisciplinary                 | Doctor of Philosophy - Computational Engineering           |                            |   |   | X |  |  | X |
| Interdisciplinary                 | Doctor of Philosophy - Engineering                         | Applied Physics            |   |   | X |  |  |   |
| Interdisciplinary                 | Doctor of Philosophy - Engineering                         | Engineering Education      |   |   | X |  |  | X |

## Certificate Programs

Note: The following certificates are not stand-alone programs and must be completed in conjunction with either an undergraduate or graduate degree program:

- Automotive Engineering
- Computational Biology
- Information Assurance Professional Certificate
- Materials Engineering

**The Bagley College of Engineering (BCoE)** was created at MSU in 1902 as the School of Engineering and was named for MSU alumnus James Worth Bagley (EE, B.S. 1961; M.S. 1966) in 2002. The BCoE seeks to increase doctoral enrollment and direct-admits qualified B.S. graduates to doctoral programs. The College is comprised of eight academic departments and offers 12 master's degrees and 12 doctoral degrees. Excellence in research is a high priority for BCoE faculty. The College is comprised of tenure-track faculty members and research faculty who play an active role in both teaching and research for graduate students. With several state-of-the-art research centers and laboratories to provide hands-on experience for master's and doctoral students, excellence extends beyond the classroom offerings. Information on BCoE research centers and laboratories may be accessed under General Information—Centers and Institutes in this publication. The BCoE also focuses on the placement of BCoE Engineering graduates with major multinational companies and top research universities. BCoE is committed to a diverse student study body and seeks to enrich graduate education by providing a multiplicity of views and perspectives that enhance research, teaching, and the development of new knowledge. Additional information about the Bagley College of Engineering is available at <http://www.bagley.msstate.edu> (<http://www.bagley.msstate.edu>).

### Academic Requirements

All graduate students in the BCoE must complete 50% of their degree coursework requirement at the 8000-level.

## Doctor of Philosophy in Engineering with concentration in Engineering Education

Graduate Coordinator: Dr. Lesley Strawderman

E-mail: [strawderman@ise.msstate.edu](mailto:strawderman@ise.msstate.edu)

### Required Courses

|          |  |   |
|----------|--|---|
| ENE 8003 | Foundations in Engineering Education           | 3 |
| ENE 8303 | Pedagogy & Assessment in Engineering Education | 3 |
| EDF 8363 | Function and Methods of Research in Education  | 3 |
| EDF 9373 | Educational Research Design                    | 3 |

### Statistics Requirement 6-7

Choose one of two sequences:

|  |   |    |
|--|---|----|
| ST 8114<br>& ST 8253                   | Statistical Methods<br>and Regression Analysis      |    |
| IE 6623<br>& ST 8603                   | Engineering Statistics II<br>and Applied Statistics |    |
| Select graduate courses in EDF and EPY |   | 6  |
| Other engineering graduate courses     |   | 18 |
| Select graduate elective courses       |   | 6  |
| Dissertation/Research                  |   | 20 |

### Total Hours 68-69

An oral comprehensive exam is required. Upon successful completion of the comprehensive exam and all coursework, all Ph.D. students must prepare and successfully defend the dissertation before a committee composed of faculty members of the University.