Date Submitted: 11/19/25 2:24 pm

Viewing: BENGMS : Biological Engineering, Master of Science in Biological Engineering

Last approved: 10/03/24 1:26 pm

Last edit: 01/01/26 4:03 pm

Changes proposed by: lpate

Catalog Pages Using this Program

Biological and Agricultural Engineering (BAEG)

Submitter: User ID: jwkim Phone: 575-3402

Program Status: Active

Academic Level: Graduate

Type of proposal: Major/Field of Study

Select a reason for this modification

Making Minor Changes to an Existing Certificate, Degree or Program (including 15 or fewer hours, admission/graduation requirements, Focused Studies or Tracks)

Are you adding a concentration?

No

Are you adding or modifying a track?

No

Are you adding or modifying a focused study?

No

Effective Catalog Year: Fall 2026

College/School Code

College of Engineering (ENGR)

Department Code

Department of Biological and Agricultural Engineering (BAEG)

In Workflow

1. ENGR Dean Initial
2. GRAD Dean Initial
3. Provost Initial
4. Director of Curriculum Review and Program Assessment
5. Registrar Initial
6. Institutional Research
7. BAEG Chair
8. ENGR Curriculum Committee
9. ENGR Faculty
10. ENGR Dean
11. Global Campus
12. Provost Review
13. Graduate Council
14. Faculty Senate
15. Provost Final
16. Registrar Final
17. Catalog Editor Final

Approval Path

1. 12/05/25 9:39 am Kevin Hall (kdhall): Approved for ENGR Dean Initial
2. 12/05/25 4:06 pm Ed Bengtson (egbengts): Approved for GRAD Dean Initial
3. 12/06/25 6:07 pm Jim Gigantino (jgiganti): Approved for Provost Initial

Program Code	BENGMS
Degree	Master of Science in Biological Engineering
CIP Code	

4. 01/01/26 4:03 pm Lisa Kulczak (lkulcza): Approved for Director of Curriculum Review and Program Assessment
5. 01/04/26 3:08 pm Gina Daugherty (gdaugher): Approved for Registrar Initial
6. 01/05/26 11:56 am Doug Miles (dmiles): Approved for Institutional Research
7. 01/05/26 12:33 pm Terry Howell Jr (tahowell): Approved for BAEG Chair
8. 01/09/26 8:07 am Manuel Rossetti (rossetti): Approved for ENGR Curriculum Committee
9. 01/28/26 9:06 am Kevin Hall (kdhall): Approved for ENGR Faculty
10. 01/28/26 9:07 am Kevin Hall (kdhall): Approved for ENGR Dean
11. 01/28/26 9:29 am Suzanne Kenner (skenner): Approved for Global Campus

12. 01/28/26 11:29 am Jim Gigantino (jgiganti): Approved for Provost Review
13. 02/19/26 3:28 pm Phyllis Howell (pahowell): Approved for Graduate Council

History

1. Apr 5, 2017 by Charlie Alison (calison)
2. May 24, 2017 by Charlie Alison (calison)
3. Apr 26, 2018 by Linda Pate (lpate)
4. Aug 27, 2024 by jwkim
5. Oct 3, 2024 by Jean Mitchell (jem03)

14.4501 - Biological/Biosystems Engineering.

Program Title

Biological Engineering, Master of Science in Biological Engineering

Program Delivery Method

On Campus

Is this program interdisciplinary between two or more colleges or schools?

No

Do the proposed changes impact any specific course(s) from another college or school?

No

What are the total hours needed to complete the program?

30

Program Requirements and Description

Requirements

Admission to the Degree Program: Admission to the Biological Engineering graduate program is a three-step process. First, the prospective student must be admitted to graduate standing by the University of Arkansas Graduate School. Second, the student must be accepted into the department's program on the basis of academic transcripts, three letters of recommendation, a statement of purpose, a resume, and standardized test scores. Students with a non-engineering degree or a non-ABET accredited engineering degree must complete the minimum deficiency coursework for non-engineering majors. A general summary of admission requirements is given below:

B.S. degree in engineering from an ABET accredited program or equivalent.

GPA of 3.00 or higher on the last 60 hours of a B.S. degree.

~~Competitive scores of the Graduate Record Examination (GRE).~~Students whose first language is not English must demonstrate English-language proficiency as required by the Graduate School. Find out more about English-language proficiency.

Finally, a member of the faculty who is eligible (graduate status of group III or higher) must agree to serve as the major adviser to the prospective student.

Detailed requirements are in the Biological and Agricultural Engineering Department Graduate Student Handbook, available at bio-ag-engineering.uark.edu.

Requirements for the Master of Science Degree: (Minimum 30 hours) Both thesis and non-thesis options are available for the M.S.B.E. degree. In general, pursuing the thesis option is supported by research or teaching assistantships and conducting research under the guidance of a major advisor. Students pursuing the non-thesis options are typically not sponsored. For either option, all coursework must be approved by the student's program advisory committee. Students with a non-engineering degree or a non-ABET accredited engineering degree must complete the minimum deficiency coursework for non-engineering majors (see below). A general summary of degree requirements is given below. Detailed requirements may be obtained from the Biological and Agricultural Engineering Department Graduate Student Handbook, available at bio-ag-engineering.uark.edu. Students should also be aware of Graduate School requirements with regard to M.S. degree (catalog.uark.edu).

M.S.B.E. Thesis Option: A minimum of 24 hours of acceptable course credit is required beyond the B.S. Degree plus 6 semester hours of BENG 6000V Master's Thesis. Except for those enrolled in the accelerated M.S.B.E. program, courses taken prior to acceptance for graduate study cannot be used to meet this requirement. The following describes the general requirement of M.S.B.E. Thesis Option:

Complete not less than 24 semester hours of coursework and a minimum of 6 semester hours of thesis (BENG 6000V). Of the 24 hours required for the M.S. degree, no more than 12 semester hours of coursework presented for the MS degree can be at the 4000 level. All 4000-level courses used toward the M.S. degree must be approved by the Graduate School. All students should meet the following requirements:

1. At least one advanced mathematics or statistics course.
2. 1 hour of BENG 58001 Graduate Seminar.

:. At least 9 hours of formal coursework at the 5000 level or higher (excluding Thesis and Seminar) in Biological Engineering (BENG). This course work will need to include two of the three following courses: BENG 51003 Advanced Instrumentation in Biological Engineering, BENG 56103 Simulation Modeling of Biological Systems, and BENG 57003 Design and Analysis of Experiments for Engineering Research.
l. At least 6 hours of BENG 6000V Master's Thesis.

Earn a minimum cumulative grade-point average of 3.0 on all graduate courses attempted. The minimum acceptable grade on a graduate course is “C.”

Select, in consultation with the major advisor, Program Advisory Committee and prepare, in consultation with the committee, a written Program of Study within the first semester.

Satisfactorily pass a written thesis research proposal at least one semester before completing all other requirements.

Satisfactorily pass a final oral examination and complete and submit a thesis.

Prepare a paper suitable for submission as a refereed article from research done for a thesis. It is not required that the paper be submitted for publication, but it must be prepared and approved by the major professor.

Complete Exit Review.

M.S.B.E. Non-thesis Option: A minimum of 30 hours of acceptable course credit is required beyond the B.S. Degree and should include 3 semester hours of technical project and report. Except for those enrolled in the accelerated M.S.B.E. program, courses taken prior to acceptance for graduate study cannot be used to meet this requirement. Complete not less than 30 semester hours of coursework acceptable to the committee that includes 3 semester hours of technical project and report (BENG 5000V). No more than 12 semester hours of coursework presented for the MS degree can be at the 4000 level. All 4000-level courses used toward the M.S. degree must be approved by the Graduate School. All students should meet the following requirements:

ı. At least one advanced mathematics or statistics course.
›. 1 hour of BENG 58001 Graduate Seminar.
:. At least 9 hours of formal coursework at the 5000 level or higher (excluding Technical Project and Report, and Seminar) in Biological Engineering (BENG). This coursework will need to include two of the three following courses: BENG 51003 Advanced Instrumentation in Biological Engineering, BENG 56103 Simulation Modeling of Biological Systems, and BENG 57003 Design and Analysis of Experiments for Engineering Research.
l. At least 3 hours of BENG 5000V Advanced Topics in Biological Engineering.

Earn a minimum cumulative grade-point average of 3.0 on all graduate courses attempted. The minimum acceptable grade on a graduate course is “C.”

Complete Exit Review.

Deficiency Course Requirement for Students with non-Engineering Degree: Prior to completing the above-listed M.S. degree requirements, students admitted to the M.S.B.E. program without an ABET-accredited or equivalent engineering degree must demonstrate engineering competence by passing 18 hours of the following deficiency engineering course work. The deficiency coursework does not count toward the course requirements of the M.S.B.E. degree. The required deficiency courses are:

A minimum of 15 credit hours of 2000 level or above of engineering courses (with course prefix BENG, BMEG, CHEG, CVEG, CENG, ELEG, INEG, or MEEG) currently allowed for credit within the BENG undergraduate program.

Minimum of 3 credit hours of one of the following BENG courses: BENG 36503 Global Bio-Energy Engineering, BENG 47403 Food and Bio-Product Systems Engineering, BENG 49303 Sustainable Watershed Engineering, or

BENG 46603 Sustainable Biosystems Designs.

Specific deficiency courses are to be determined in consultation with the student's major advisor and advisory committee. Please note that courses in addition to those listed above may be required for students without required prerequisites for the deficiency courses (such as life sciences and/or math/physics/chemistry prerequisite courses).

Accelerated M.S.B.E. Degree

High-achieving undergraduate students seeking a Bachelor of Science degree in biological engineering (B.S.B.E.) at the University of Arkansas, who choose to pursue graduate studies in biological engineering (BENG), may participate in the accelerated Master of Science program in BENG (M.S.B.E.). Eligible B.S.B.E. students can count up to 12 credit hours of BENG or science elective courses towards their M.S.B.E. degree. The 12 credit hours must be from the courses that satisfy the M.S.B.E. degree requirements and must be taken during the final 12-month period of their undergraduate degree on the Fayetteville campus of the University of Arkansas. They may include a maximum of 6 hours of 4000-level courses, but the remaining hours must be that of 5000-level courses. All 4000-level courses used toward the M.S. degree must be approved by the Graduate School.

The degree requirements of the accelerated M.S.B.E. program are identical to those of the M.S.B.E. program (thesis and non-thesis options). Students must complete either at least 24 hours of coursework and at least 6 hours of BENG 6000V Master's Thesis (thesis option) or at least 27 hours of coursework and at least 3 hours of BENG 5000V Advanced Topics in Biological Engineering (non-thesis option). The coursework hours (24 or 27 hours) include up to 12 hours transferred from the B.S.B.E. degree.

Biological engineering undergraduate students interested in the accelerated M.S.B.E. degree should apply to the program prior to starting the second-to-last semester of their undergraduate program. To be eligible, students must have a 3.5 cumulative GPA or higher, and submit the normal application materials required by the graduate school for the M.S.B.E. degree program. For students that have a cumulative GPA of 3.5 or higher, the submission of GRE score is waived.

Detailed requirements may be obtained from the Biological and Agricultural Engineering Department Graduate Student Handbook, available at bio-ag-engineering.uark.edu. Students should also be aware of Graduate School requirements with regard to M.S. degrees (catalog.uark.edu).

Are Similar Programs available in the area?

No

Estimated Student Demand for Program	NA
Scheduled Program Review Date	2026-2027

Program Goals and Objectives

Program Goals and Objectives
1. Prepare students to contribute new knowledge of fundamental or applied importance in Biological Engineering. 2. Prepare students to disseminate new knowledge of fundamental or applied importance in Biological

Program Goals and Objectives
Engineering.

Learning Outcomes

Learning Outcomes
1. Students will gain advanced knowledge in Biological Engineering. 2. a. Thesis: Students will gain a necessary understanding of the fields of their research. b. Non-thesis: Students will apply advanced coursework to engineering problems in the field of Biological Engineering. 3. a. Thesis: Students will contribute new knowledge of fundamental or applied importance. b. Non-thesis: Students will demonstrate (an) important application(s) of existing knowledge. 4. Students will be able to communicate effectively.

Description and justification of the request

Description of specific change	Justification for this change
Department voted to not require GRE for admission.	Faculty voted for change.

Upload attachments

Reviewer Comments

Lisa Kulczak (lkulcza) (01/01/26 4:03 pm): Removed Undergraduate Council from workflow.

Key: 274