

## AIMS UG Certificate for BME Students

Artificial Intelligence, Modeling and Simulation (AIMS) certificate undergraduate program is hosted by the Department of Mechanical Engineering at the University of Iowa. The official website is [here](#). The AIMS undergraduate certificate program requires 18 semester hours (s.h.) of credits, including two required courses (ME:4111 Scientific Computing and Machine learning and ME:4150 Artificial Intelligence in Engineering), three elective courses selected from the list on the [website](#), and a capstone design project.

Biomedical Engineering (BME) students can earn the AIMS undergraduate certificate without taking extra credits by course substitutions as below.

1. Required courses:

The following courses can be substituted for ME:4111:

MATH:3800 Elementary Numerical Analysis

The following courses can be substituted for ME:4150:

ENGR:2995 Intro to AI and Machine Learning

2. Some BME courses can be substituted for AIMS electives.

BME:4310 Computational Biochemistry

BME:5335 Computational Bioinformatics

BME:5441 Num & Stat Methods for Bioengr

BME:5525 Cardiopulmonary Design & Modeling

BME:5620 Intro to Applied Biomedical Finite Element

Note: Please get in touch with Prof. Xiao ([shaoping-xiao@uiowa.edu](mailto:shaoping-xiao@uiowa.edu)) if students (especially in the "Computational Bioengineering" focus area) want to use other BME electives for substitution.

3. The following courses can be substituted for the capstone course.

BME:4910 BME Senior Design I

BME:4920 BME Senior Design II

Note: Please consult with Prof. Xiao before conducting the project. The final report with a paragraph emphasizing the AIMS component is required.

The students need to declare the AIMS UG certificate through their MyUI account. Then, the students need to contact Prof. Xiao ([shaoping-xiao@uiowa.edu](mailto:shaoping-xiao@uiowa.edu)), the director of the AIMS UG certificate program, to discuss the plan of study before submitting the course substitution forms. Here is the guideline for submitting an online course substitution form through the College of Engineering website. Note: Multiple forms must be submitted if there is more than one substitution.

1. Find “Course substitution request form” in [academic forms](#), and click it.

• [COURSE SUBSTITUTION REQUEST FORM](#)

This form is to be completed by the student to request a substitution of a degree requirement (gen ed, core curriculum, major/program of study, or seminar) course for another course.

2. Login with your hawkid and password.

3. “Select your major or certificate” with “AIMS Certificate”

Select your major or certificate

Anticipated Graduation (semester/year)

4. Click “Required Course” to substitute for a required course. For example,

What certificate requirement are you requesting a substitution for:

Required Course  
 Elective Course  
 Capstone Course

Course to Use as Substitution:

Is this a transfer course?  Yes  
 No

AIMS Certificate

5. Click “Elective Course” or “Capstone Course” for other substitutions. For example,

What certificate requirement are you requesting a substitution for:

Required Course  
 Elective Course  
 Capstone Course

Course to Use as Substitution:

Is this a transfer course?  Yes  
 No