

Bio-Fabrication Microcredential
Four Courses (16 Credits)
Faculty Steward (SPDI Dept Chair, Hix)

INBIO 110 Molecules & Cells (4 cr)
INSPDI 385 Bio-Fabrication (4 cr)

Select at least one of the following courses:

ISCS 210 Python Programming (4 cr)
IIPHYS 342 Data Analysis for Scientists and Engineers (4 cr)
ISMGT 383 Applied Data Analysis & Vis. (4 cr)
ISCS 380 Digital Imaging Processing (4 cr)
SPDI 410 Mechatronics and Automation (4 cr)

Select at least one of the following courses:

INSAFE 213 Safety Chemistry (4 cr)
INCHEM 111 General Chemistry 1 (4 cr)

Objectives/Rationale: This micro-credential prepares students for career growth and flexibility in the field of Bio-Technology and Bio-Fabrication. This emerging field will have a diverse set of career opportunities including computational work, programming, cell culture, chemistry processes, automation, electrical and mechanical systems. Students in SPDI, Computer Science, Biology, Math, Chemistry, SOHAS, Physics and those looking to explore opportunities or increase their knowledge and skills in the Bio-Fabrication field are welcome to join these courses. Some courses have prerequisites; students can work with their academic advisor or contact the SPDA program chair for course advising. Those with related work experience can seek advice on appropriate course preparation and selection.

Outcomes: After completing this program, students will be able to demonstrate: The application of cell structure, function, and growth and the effects of the chemistry of macromolecules in the cell culture environment. The application of chemistry fundamentals in the development of bio compatible materials and their processing. The 3D bio-printing principles along with designing and preparing complex geometric model of body parts. Computer programming and its applications in digital imaging.