



BUILDING YOUR CAREER IN MICRO/NANOFABRICATION

Are you interested in optics, photonics, quantum, semiconductors, or renewable energy? If so, a career in micro and nanofabrication might be your calling! This guide will help you select professional electives designed to help you develop valuable skills for a variety of industries.

WHAT IS THE FOCUS OF MICRO/NANOFABRICATION?

Creating everything tiny, including transistors, memory cells, power devices for electric vehicles, sensors, optical devices, LIDAR, LEDs and lasers, solar cells, etc.

WHICH INDUSTRIES USE MICRO/NANOFABRICATION?

Your skills in micro/nanofabrication will be in demand in multiple sectors, including semiconductor manufacturing, optics and photonics, quantum, microelectromechanical systems, and photovoltaics.

HERE ARE A FEW COMPANIES THAT FREQUENTLY HIRE MSU GRADUATES WITH MICRO/NANOFABRICATION EXPERTISE:

- Micron Technology
- Tokyo Electron
- Nvidia
- Advance Micro Devices
- Sandia National Laboratories

- Texas Instruments
- Applied Materials
- Analog Devices
- ADVR Inc
- Intel

ADVISERS FOR CAREERS IN MICRO/NANOFABRICATION FABRICATION FACULTY

Dr. Jim Becker, jbecker@montana.edu
Dr. David Dickensheets, davidd@montana.edu
Dr. Anja Kunze, anjakunze@montana.edu
Dr. Andrew Lingley, andrew.lingley@montana.edu
Dr. Wataru Nakagawa, nakagawa@montana.edu

FOR ADDITIONAL INFORMATION, CONTACT:

Montana State University
Department of Electrical & Computer Engineering
610 Cobleigh Hall Bozeman, MT 59717-3780
406-994-2505
Fax: 406-994-5958
ecedept@ece.montana.edu

EE ADVISING GUIDE: MICRO/NANOFABRICATION

CHOOSING PROFESSIONAL ELECTIVES IN MICRO/NANOFABRICATION:

As an EE major, you are allowed to choose 27 credits of professional electives as part of your undergraduate degree. Spend these wisely. Of these 27 credits, at least 18 must be from the ECE department, at least 6 must be from outside of ECE and at least four must be >300 level.

LAUNCH-PAD COURSES FOR CAREERS IN MICRO/NANOFABRICATION



MICRO/NANOFABRICATION

EELE 317	Electronics (3 credits)	Fall/Spring	<input type="checkbox"/>
CHMY 141/142	College Chemistry / Chemistry Lab (4 credits)	Fall/Spring/Summer	<input type="checkbox"/>
EELE 407	Microfabrication (3 credits)	Fall	<input type="checkbox"/>
EELE 408	Photovoltaics (3 credits)	Spring	<input type="checkbox"/>
EELE 409	Material Science (3 credits)	Fall	<input type="checkbox"/>
EELE 418	The Art of Biochips, An Introduction to BioMEMS (3 credits)	Spring	<input type="checkbox"/>
STAT 332	Statistics for Scientists and Engineers (3 credits)	Fall/Spring	<input type="checkbox"/>



OTHER RECOMMENDED NON-ECE ELECTIVES:

EMEC 467	Micro-Electromechanical Systems (3 credits)	Spring	<input type="checkbox"/>
STAT 408	Statistical Computing and Graphical Analysis (3 credits)	Fall/Spring	<input type="checkbox"/>
STAT 411	Methods for Data Analysis (3 credits)	Fall/Spring	<input type="checkbox"/>
STAT 441	Experimental Design (3 credits)	Spring	<input type="checkbox"/>
STAT 446	Sampling (3 credits)	Fall	<input type="checkbox"/>
PHSX 441	Solid State Physics (3 credits)	Fall	<input type="checkbox"/>

DID YOU KNOW?

You can take EELE 407 Introduction to Microfabrication and EELE 408 Photovoltaics as early as fall of your sophomore year since their only prerequisite is Physics II.