**Implementation and Impact of Campus-wide Multidisciplinary Approach to Microfabrication (NSF DUE-0942672)**

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**New Facilities at Binghamton University**

**A Multidisciplinary Introduction to Microfabrication**

![Diagram](image)

**Key**
- EE Majors
- ME Majors
- Chem Majors
- Phys Majors

**Microfabricated Ph sensor**

**Lab module on microelectromechanical resonators**

**Sci Majors**
- PHYS131/132 Physics 1 and 2 (500)
- CHEM111 Chemistry 1 (640)

**Eng Majors**
- WATS111/112 Introduction to Engin (500)
- EECE260 Circuits (200)
- EECE302 Semiconductor Devices (400)
- ME362 Materials Engin. (100)

**ALL MAJORS**
- Lab module on fabricated transistor
- Lab module on MEMS device
- Lab module on microfluidic mixer
- Lab module on optical gratings

**Microfabrication Course (20)**
- Combined lecture/lab course on microfabrication

**Figures**
- Figure 1: Pictorial of our approach for multidisciplinary integration of microfabrication technology. A clean room module will be introduced into a junior level course of each discipline, with an immediate opportunity (in the senior year) for the student to follow up by taking a capstone microfabrication course cross listed among the four departments [1].
- Figure 2: Illustration of the four major clean room fabrication experiments: a thin film transistor, OLED, and microfluidic mixer, and optical grating.
- Figure 3: Some sample survey questions from the longitudinal survey of students graduated from the first two years of the capstone class. The half of the class driven by pipeline modules came from science, ECE, and ME disciplines.

**References**


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