

New Program Authorization

BS in Computer Engineering



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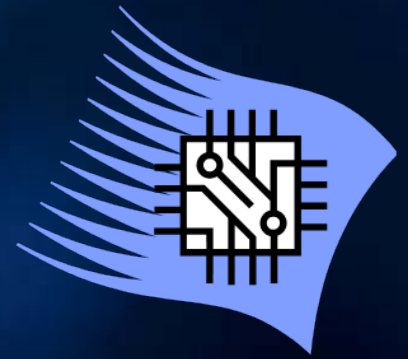
WISCONSIN'S POLYTECHNIC UNIVERSITY

Julie Furst-Bowe, Provost
Rich Rothaupt, Interim STEM Dean

Computer Engineering Program Overview

Design of hardware & software for engineering systems that utilize embedded digital processors. Embedded digital processors are incorporated into nearly every device with electronic components.

- Calculus-based program
- Designed to meet ABET Accreditation standards
- Curriculum meets employer & students' needs
- Emphasis on laboratory experiences & student design experiences
- Builds on existing concentration in Computer Engineering



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Alignment of Proposed Program with UW-Stout Mission

- UW-Stout mission includes manufacturing-related engineering & technologies
- Addition of Computer Engineering will strengthen UW-Stout's polytechnic identity
- Will further economic development in West Central Wisconsin
- Key program in UW-Stout's Academic Plan & Growth Agenda
- Compatible with UW-Stout's STEM programs



Alignment with UW System Engineering Taskforce Report

- Meets regional engineering need
- Utilizes existing resources
(laboratory space, trained experts)
- Designed in collaboration with
other institutions
- Exercises multiple student recruitment strategies,
with an emphasis on women & minorities
- Includes strategies for part-time & place bound students



Collaborative Efforts

- Shared computer science courses with UW-Eau Claire
- Shared engineering courses with UW-Platteville
- “2+2” agreements with Chippewa Valley Technical College and other WTCS colleges
- Cohort delivery to regional employers



Need for the Program

- *Designed to meet needs in West Central Wisconsin:*
 - Large number of computer component & electronics manufacturers
 - Strong regional support from employers, legislators, & technical colleges
 - Jobs available in the region, state & nation
 - Regional needs study
 - Wisconsin Department of Workforce Development Data
 - Bureau of Labor Statistics Employment Projections
 - Need for resident computer engineering faculty to provide expertise & strengthen regional engineering capabilities

Student Pipeline

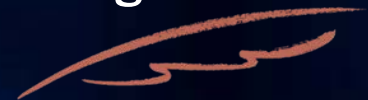
- **New freshmen**
 - New STEM recruiter & minority recruiter
 - STEM recruitment activities
- **Internal transfers from STEM programs; undecided students**
- **Technical college transfer students**
 - Articulation agreements in development
- **Part-time students – may be working full time**
- **Programs for middle school and high school students, with emphasis on women & minorities**
 - Summer Technology & Engineering Preview (STEPs)
 - Summer Math Springboard Program
 - Project Lead the Way



Program Goals and Objectives

B.S. in Computer Engineering program graduates will be able to:

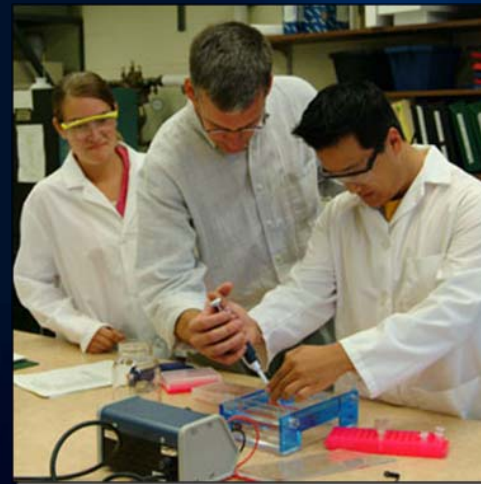
- Apply knowledge of mathematics, science & engineering.
- Design & conduct experiments, as well as analyze and interpret data.
- Design a system, component, or process to meet desired needs within realistic constraints.
- Function on multidisciplinary teams.
- Identify, formulate, & solve engineering problems.
- Understand professional & ethical responsibility.
- Communicate effectively.
- Understand the impact of engineering solutions in a global, economic, environmental, & societal context.
- Recognize the need for & an ability to engage in life-long learning.
- Identify contemporary issues in the field.
- Use the techniques, skills, & engineering tools necessary for engineering practice.



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Computer Engineering Curriculum

- 130 credits
 - 43 general education; ethnic & global studies courses
 - 19 additional math & science courses
 - Engineering core courses
 - Computer engineering & computer science courses
- Two-semester senior capstone design project
- Co-op experience or internship



Resource Requirements

- **Builds on existing resources in engineering and computer science**
 - Faculty
 - Curriculum
 - Laboratories
- **Will add 3 faculty members**
 - 2 FTE provided in 2007-2009 Growth Agenda budget
 - 1 FTE will be reallocated in third year of the program
- **Will add 2 specialized laboratories**
 - Funding provided in the 2007-2009 Growth Agenda budget



Budget Summary

- For 2008-2009

- **CURRENT COSTS**

• 2.0 Faculty positions	\$196,518
• Clerical support	\$ 4,829
• S & E	\$ 6,800



- **ADDITIONAL COSTS – funding provided by 2007-2009 DIN**

• 2.0 Faculty positions	\$ 160,000
• Equipment	\$ 80,970
• Other (fringe benefits)	\$ 64,592

- **TOTAL** \$513,709



Program Summary

- Aligned with UW-Stout's mission, polytechnic designation and academic plan
- Builds on existing Computer Engineering concentration
- Designed to meet ABET accreditation standards
- Designed to meet regional needs
- Strong support from employers, legislators and regional economic development groups
- Designed in collaboration with other institutions
- Will utilize numerous strategies for recruiting students
- Will utilize existing resources
- Additional resources provided through 2007-2009 Growth Agenda budget

