Please type or select the requested information. Print completed forms, add appropriate paper attachments, and route through MSU's curricular process for recommendations and decisions.

**Check all that apply:**
- College: Science, Engineering and Technology
- Department: Electrical and Computer Engineering and Technology
- Program: Electrical and Computer Engineering Technology
- Type of Change: COURSE PROPOSALS
- Proposed Title: New Course
- Title Current: Programming Tools
- Title Proposed: Programming Tools

**Proposal #**: 327

**Effective Date of Change**: 06-07

**Course Designator**
- Number: 310
- Credits: 4

**Include a course or program description for the Bulletin (30-40 words maximum for courses, 100 for programs):**
Several programming tools and their use in creating electronic hardware systems are covered in this course. Creating special-purpose hardware using numerical analysis programs written in C. Creating hardware utilizing Visual applications written in C. Use of scripting languages in hardware applications. Using Excel for input-output functions.

**Pre**: EET 254, EET 143, EET 222

**Rationale or Justification for change:**
The proposed course was strongly endorsed by the ECET Industry Advisory Board at the Fall 2005 meeting.

***For General Education or Cultural Diversity Courses Only***

**General Education Course:**

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<th>GE Category #</th>
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*For Writing Intensive Courses, attach a description of the kind and quantity of writing.*
*For Upper Division Courses, include a description of the respects in which it is broad and general rather than narrow and specific, and so suitable as GE.

**Attach paper copies of the following:**
- a. Syllabus or course outline.
- b. Course's student learning outcomes associated with each GE competency or CD designation.
- c. List of strategies to be used to assess students' achievement of each GE competency or CD designation.

***For New Courses***

**Check all that apply:**
- Instructional Type: Lecture/Lab
- Course is an elective.
- Grading Format: A Grade
- P/N
- Course is required for program
- Pre- or Co-requisites: EET
- Pre: EET 254, EET 143, EET 222
- Other courses are being changed or eliminated. (Explain.)

**Course will be offered:**
- Fall Semester
- Spring Semester
- Summer Session

**Please see attached form showing changes in the program.**

- Course content or title is similar to courses in other departments. (Attach copy of letter of agreement with other program(s) contacted. Indicate the nature of the discussions and/or resolution of differences or potential conflicts.)

**Attach paper copies of the following:**
- a. Syllabus or course outline.
- b. Course's student learning outcomes.
- c. A list of resources required to offer and support this course.
- d. A description of how teaching this course will affect department staffing.
- e. If 400/500 level course, an explanation of added expectations of graduate students.
### Minnesota State University, Mankato
#### Curriculum Proposal

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<th>Department</th>
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**Comments:**

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**Comments:**
EET 310 Programming Tools (4 credits)
Course Proposal
Draft Syllabus

Class Schedule: 3 lectures, 1 2-hour lab

Description: Several programming tools and their use in creating electronic hardware systems are covered in this course. Creating special-purpose hardware using numerical analysis programs written in C. Creating hardware utilizing Visual applications written in C. Use of scripting languages in hardware applications. Using Excel for input-output functions.

Texts: (in process)

Grading: 
- Midterm 1 – 25%
- Midterm 2 – 25%
- Final – 25%
- Homework – 10%
- Lab Reports – 15%

Course Outline

Topics: 
- Special-purpose applications
- Numerical analysis techniques
- C review
- Use of C to implement numerical analysis programs
- Translating C numerical analysis programs to hardware
- Visual applications written in C
- Scripting languages
- Use of scripting languages in hardware systems
- Using Excel for input-output functions

Lectures: 
- 3
- 8
- 3
- 8
- 5
- 8
- 3
- 3

Laboratory Outline

Laboratory: 
- Applications
- Numerical analysis example
- C programming
- C numerical analysis programs I
- C numerical analysis programs II
- C numerical analysis programs III
- Digital hardware translation
- Visual application
- Scripting programming
- Digital hardware & scripting
- Excel for input-output
- Projects I
- Projects II

Lab No: 
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 12
- 13
- 14

Cheating: Cheating will be dealt with in a manner that is consistent with the action. The severity of the penalty may be a simple reprimand or may result in failure of the course. The goal is for you to
learn the material. If you are experiencing trouble in the course discuss it with the instructor – learning the material is easier and far more satisfying than cheating.

Documentation: It is expected that assignments and reports for this course will be prepared in a manner that would be acceptable in the work environment.

ADA: It is the intent of the instructor of this course to provide a learning environment that is as conducive to learning and the expression of abilities as is possible. If any student in this course has any condition that requires special accommodation to allow them to master or demonstrate mastery of concepts they are asked to contact the instructor as soon as possible.

Participation: Conduct consistent with ethical and supportive business practices will be expected. In paraphrasing the Sprint Code of Conduct – be on time for meetings – be prepared for meetings – do not interrupt – criticize ideas not people – respect each other – provide solutions not just problems. Please do not use computers or other electronics during class when they are not required – it is rude and inappropriate.

Incompletes: Incompletes are given for circumstances beyond a student’s control. I don’t interpret this to cover poor planning.
After completing Programmable Logic Technology (EET 310) the student will be able to:

1. Analyze special-purpose applications for implementation with special programming tools.
2. Apply numerical analysis techniques.
3. Use C to implement numerical analysis programs.
4. Translate C numerical analysis programs to hardware.
5. Develop hardware solutions using Visual applications written in C.
6. Use scripting languages.
7. Use scripting languages to implement hardware systems.
EET 310 Programming Tools
Course Proposal
Resource Needs

Resources to support this course will result from allocation of existing department resources.
Staff Impact – Staffing resources to support this course will result from allocation of existing department resources.