# Program Modification Form

## I. Summary of Proposed Changes

<table>
<thead>
<tr>
<th>Department/program</th>
<th>Department of Applied Computing &amp; Electronics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A.A.S. Degree in Electronics Technology</td>
</tr>
</tbody>
</table>

**Summary**

Revising Graduation Requirements

## II. Endorsements and Approvals

Please obtain the Program Chair/Director's approval and Dean's approval.

<table>
<thead>
<tr>
<th>Please type / print name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requestor: Steven Rice</td>
<td>Steven D. Rice</td>
<td>9/23/10</td>
</tr>
<tr>
<td>Phone: 243-7914</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program Chair/Director:</td>
<td>Thomas Gallagher</td>
<td>9/23/10</td>
</tr>
<tr>
<td>Department Dean</td>
<td>Dr. Barry Good</td>
<td>9/23/10</td>
</tr>
<tr>
<td>Other affected Programs:</td>
<td>Cathy Corr</td>
<td></td>
</tr>
<tr>
<td>(Use additional sheet if needed)</td>
<td>Applied Arts &amp; Sciences</td>
<td>9-23-10</td>
</tr>
</tbody>
</table>

Are other departments/programs affected by this modification because of:

- (a) required courses incl. prerequisites or corequisites,
- (b) perceived overlap in content areas,
- (c) cross-listing of coursework

Please obtain signature(s) from the Chair/Director of any such department/program (above) before submission.

## III. Type of Program Modification

(e.g. adding a writing course required of all majors.) Please X check the appropriate box.

<table>
<thead>
<tr>
<th>Major</th>
<th>Minor</th>
<th>Option</th>
<th>Teaching major/minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Please describe</td>
<td>Revising graduation requirements.</td>
<td></td>
</tr>
</tbody>
</table>

## IV. Catalog Language

If you are proposing a change to an existing program or major, please cut and paste the requirements as they appear in the current catalog below.

[www.umt.edu/catalog](http://www.umt.edu/catalog)

Please provide the proposed copy as you wish it to appear in the catalog.
Electronics Technology - Associate of Applied Science

Students in the Electronics Technology program learn to troubleshoot, calibrate, test, and repair electronic components and circuit boards used in a wide range of electronic equipment including computers and communication equipment. Training includes working knowledge of direct and alternating current theory, semiconductor circuits, instrumentation, automatic controls, data communications, computerized communication links, and operational amplifiers. Students become familiar with robotics, electronic communications theory, and modes of RF communications.

Students are awarded the Associate of Applied Science degree upon successful completion of the program. Students may enter autumn semester only.

First Year
CSCI 105 (CRT 111) Computer Fluency
CRT 112 Operating Systems Fund
EET 111 Basic Electronics
EET 112 Electronics Lab I
EET 113 Circuits Lab
EET 121 Semiconductors
EET 122 Electronics Lab II
EET 123 Amplifier and Power Supply Lab
M 151 (MAT 120) Precalculus
M 162 (MAT 145) Applied Calculus
PSYX 161S (PSY 110S) Fund of Organizational Psychology
WRIT 121 (WTS 115) Introduction to Technical Writing
Total

Second Year
EET 227 Digital Electronics
EET 234T Automatic Controls
EET 240T Robotics
EET 241T Instrumentation
EET 242T Electronics Lab III
EET 260 Data Communications

Electronics Technology - Associate of Applied Science

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First Year
CSCI 105 (CRT 111) Computer Fluency
CSCI 110 Programming with Visual Basic I
EET 111 Basic Electronics
EET 112 Electronics Lab I
EET 113 Circuits Lab
EET 121 Semiconductors
EET 122 Electronics Lab II
EET 123 Amplifier and Power Supply Lab
M 121 College Algebra
M 122 Trigonometry
PSYX 161S (PSY 110S) Fund of Organizational Psychology
WRIT 121 Intro. to Technical Writing
Or
WRIT 101 College Writing I
Total

Second Year
EET 227 Digital Electronics
Our department is engaged in an ongoing internal review of its course offerings and programs to address student retention, graduation, and overall student success. We seek permission to revise the general education requirements for the A.A.S. degree program in Electronics Technology with two goals: (1) Better prepare students for success in the content area curriculum of their major and (2) Provide greater transferability for students seeking to continue their education at a four-year institution.

Our first request involves accepting either WRIT 101 College Writing I or WRIT 121 Technical Writing as the single writing requirement for the program. By doing so students will be better positioned to complete the lower division writing requirement should they choose to pursue a four-year degree.

Mathematics continues to pose an obstacle for students entering the program. Through course prerequisites, we now require students to have successfully completed an introductory algebra course (M 90) or have assessment evidence demonstrating appropriate competence prior to beginning coursework in the curricular area of electronics. We are also addressing student aptitude in mathematics by requiring an additional two credits of mathematics through the M 121 College Algebra/M 122 Trigonometry sequence in place of the M 151 Pre-calculus course.

The SCN 120T/121T Technical Physics sequence required for program graduation has never provided students with transferable science credit. Additionally, there is question as to the continuation of this course sequence at our college. The subject area of chemistry has great importance in the field of electronics, yet it is minimally covered in the program while embedded content provides great depth and breadth of physics concepts involving electricity and electromagnetism. Exposure to scientific process and scientific methodology is an important component for individuals pursuing career in electronics. We request permission to require SCN 175N Integrated Science in place of SCN120T/121T to provide students with a greater breadth of experiences in physics, chemistry, and scientific methodology/process; and provide transferable credit.

The minimum general education accreditation requirements for applied associate degrees programs through the Northwest Commission on Colleges and Universities (NWCCU) require content in the areas of communication, computation, and human relations. The proposed changes to the Electronics Technology degree program will continue to meet or exceed all areas required by NWCCU accreditation.

Lastly, we are responding to a call from the local community to provide students graduating from the program additional training and education in the area of programming and programmable logic controllers (PLCs). To address this demand, our faculty has created a new course EET 237 Introduction to PLCs. It will become a graduation requirement in place of EET 240 Robotics. We are also requesting the addition of the computer programming course CSCI 110 Introduction to Programming: VB I in place of CRT 112 Operating System Fundamentals.
V Copies and Electronic Submission
Once approved, the original, a paper copy and an electronic file are submitted to the Faculty Senate Office, UH 221 (camie.foss@msu.msu.edu).

VI Department Summary Required if several proposals are submitted. In a separate document list program title and proposed change of all proposals.