

April 9, 2010

To: University Senate

From: Senate Planning & Review Committee (SPRC)  
Frances Jackson, Chair

Re: Proposal to initiate a M.S. in Mechatronics

The SPRC received a proposal to initiate a M.S. in Mechatronics. This proposal is jointly sponsored by the Department of Electrical & Computer Engineering (ECE) and the Department of Mechanical Engineering (ME) from the School of Engineering and Computer Science (SECS).

#### Summary

This is a new master's degree proposal for the SECS. The proposal states that the field of mechatronics is difficult to define. It is a multi-disciplinary engineering specialty that is used for a variety of applications. It is described as a "hybrid" of mechanical, electronic, computer and control engineering. The field of mechatronics produces affordable products in a wide variety areas including but not limited to such items as machine tools, robots, unmanned vehicles, sensors, sports, and medical systems.

The M.S. in Mechatronics requires 32 graduate credits to complete. Students must take 16 credits from the foundation area. The remaining 16 credits depend on whether or not a student elects to the thesis or non-thesis option. Student electing a thesis option will have 8 thesis credits and 8 credits from the topical courses area. Students who elect the non-thesis option will take 12 credits from the topical courses area.

It is anticipated that this program will attract five new students each year. Students will be advised by the Department to which they apply.

There is a need to two additional part-time faculty and two additional teaching assistants. This program will build on existing courses. No new courses are required for this program and no additional lab space is requested.

Lawrence Technological University is the only other institution in Michigan offering a mechatronics program, although courses in mechatronics are offered by other Michigan institutions. There are letters of support from several external companies in support of this new degree and their support is enthusiastic. There is a letter of support from the Dean indicating that the resources needed for this program will be provided. Although the program refers to a student survey, no formal survey of current student interest was actually administered. However, informal discussions with current students indicate there is interest in this program.

#### Strengths

This program, despite the difficulty in defining "mechatronics" appears to an emerging area that will attract a small number of students who will have an interdisciplinary background to produce

items of use to a wide range of “customers.” This is appealing to engineers and non-engineers as well. The utility of such a degree is obvious and is supported by SPRC. While the number of students expected to apply for this program is small, the impact that could be created by graduates of this program could be significant to society. The faculty are qualified to teach this program and an impressive listing of their contributions was included with the proposal.

This proposal is consistent with the role and mission of Oakland University. The need for additional resources is modest and justifiable. The Dean’s letter committed to providing the additional library resources that were included in the library report.

Concerns: None

Action

By unanimous vote, SPRC is recommending approval of this program to the University Senate.