October 18, 2021

# M E M O R A N D U M

**TO:**        Jim Murdaugh, Ph.D.
              President

**FROM:**    Calandra Stringer, Ph.D.
              Vice President and Provost

**SUBJECT**:   Academic Curriculum Changes

## Item Description
This item presents new program proposal and courses.

## Overview and Background
The Curriculum and Innovation Committee members review and make recommendations for Board approval for new and revised curriculum.

The College is proposing a new Building Automation Systems A.S. degree to meet the need for professionals to develop skills necessary to manage an emergence of more fully automated building systems.  There is a projected growth locally of 8.8% and 5.9% across the state over the next 5-10 years, respectively. The average hourly wage is $33.19/hour and will help to provide higher wage-earning jobs within the community. TCC is also proposing a $75.00 lab fee for each new course in the program to purchase lab equipment and lab supplies for each student.

Discussions with Siemens has led to a collaborative approach to offer this program. Siemens has committed to promoting the program to its own employees as a way to increase their skills and earning potential. Additionally, Siemens will help identify qualified employees to serve as faculty in the program.

## Funding/ Financial Implications
None

## Past Actions by the Board
The Board approved the program revisions, new courses and course changes each year.

**Recommended Action**
That the Board approve the recommendation for the program proposed and course additions, as attached.

## NEW PROGRAM

Building Automation Systems, A.S. (CIP # 1615030304) (60 credit hours)
The College is proposing a new Building Automation Systems A.S. degree to meet the need for professionals to develop skills necessary to manage the emergence of more fully automated building systems.  There is a projected growth locally of 8.8% and 5.9% across the state over the next 5-10 years, respectively. The average hourly wage is $33.19/hour and will help to provide higher wage-earning jobs within the community.

General Education Courses:
>ENC1101 College Composition (3)
>Humanities State Core (3)
>Mathematics State Core (3)
>PHY1020 Energy and Its Environmental Effects (3)
>Social Sciences State Core Group 1 (3)

Program Courses:

| | |
|---|---|
| BCN2563 | Building Systems and Management (3) |
| ETM1600C | Automation and Controls Fundamentals (3) |
| ETM1601C | HVAC Systems and Devices (3) |
| ETM1602C | Automated Electrical Systems and Devices (3) |
| ETM1603C | Automations and Controls Design thru Commissioning (3) |
| ETM1604C | Energy Management Concepts (3) |
| ETM2605C | Automations and Controls Integration (3) |
| ETM2606C | Programming Building Automation Systems (3) |
| ETM2607C | Troubleshooting Automation and Control Systems (3) |
| ETM2608C | Automated Building Operations (3) |
| ETM2609C | Capstone in Energy Management and Controls Tech (3) |
| ETM2942 | Internship in Energy Management and Controls Tech (3) |
| BCN2704 | Construction, Contracts, Codes, Laws and Safety (3) |
| EGN1111C | Engineering Graphics (3) |
| ETI1110 | Quality Assurance (3) |

## NEW COURSES AND LAB FEES

| Course ID | Course Name | New Lab Fee | Rationale for New Course and Lab Fee |
|---|---|---|---|
| BCN2563 | Building Systems and Management | $75.00 | New course is part of the Building Automation Systems, A.S.  New Lab fee is for material and supplies |

| ETM1600C | Automation and Controls Fundamentals | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |
|---|---|---|---|
| ETM1601C | HVAC Systems and Devices | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |
| ETM1602C | Automated Electrical Systems and Devices | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |
| ETM1603C | Automation & Controls Design thru Commissioning | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |
| ETM1604C | Energy Management Concepts | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |
| ETM2605C | Automation and Controls Integration | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |
| ETM2606C | Programming Building Automation Systems | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |
| ETM2607C | Troubleshooting Automation and Control Systems | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |
| ETM2608C | Automated Building Operations | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |
| ETM2609C | Capstone in Energy Management and Controls Tech | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |
| ETM2942 | Internship in Energy Management and Controls Tech | $75.00 | New course is part of the Building Automation Systems, A.S. New Lab fee is for material and supplies |