



**SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS**

Substantive Program Modification Form

UNIVERSITY:	SDSU
CURRENT PROGRAM TITLE:	Electronics Minor
CIP CODE:	15.0303
UNIVERSITY DEPARTMENT:	Construction & Operations Management
BANNER DEPARTMENT CODE:	SCOM
UNIVERSITY DIVISION:	Jerome J. Lohr College of Engineering
BANNER DIVISION CODE:	3E

University Approval

To the Board of Regents and the Executive Director: I certify that I have read this proposal, that I believe it to be accurate, and that it has been evaluated and approved as provided by university policy.

Dennis D. Hedge

3/16/2020

Vice President of Academic Affairs or
President of the University

Date

1. This modification addresses a change in:

- | | |
|---|--|
| <input type="checkbox"/> Total credits required within the discipline | <input type="checkbox"/> Total credits of supportive course work |
| <input type="checkbox"/> Total credits of elective course work | <input type="checkbox"/> Total credits required for program |
| <input checked="" type="checkbox"/> Program name | <input type="checkbox"/> Existing specialization |
| <input checked="" type="checkbox"/> CIP Code | <input type="checkbox"/> Other (explain below) |

2. Effective date of change: 2020-2021 Academic Year

3. Program Degree Level: Associate Bachelor's Master's Doctoral

4. Category: Certificate Specialization Minor Major

5. If a name change is proposed, the change will occur:

- On the effective date for all students
- On the effective date for students new to the program (enrolled students will graduate from existing program)

Proposed new name: Mechatronics Technology Minor

6. Primary Aspects of the Modification:

Existing Curriculum

Proposed Curriculum (highlight changes)

Pref.	Num.	Title	Cr. Hrs.	Pref.	Num.	Title	Cr. Hrs.
ET	210-210L	Introduction to Electronic Systems & Lab	4	ET	210-210L	Introduction to Electronic Systems & Lab	4
ET	220-220L	Analog Electronics & Lab	4	ET	220-220L	Analog Electronics & Lab	4
ET	232-232L	Digital Electronics & Microprocessors & Lab	3	ET OR AST	232-232L 412-412L	Digital Electronics & Microprocessors & Lab Fluid Power Technology & Lab	3
				ET OR	240	Techniques of Servicing	3

<i>Existing Curriculum</i>				<i>Proposed Curriculum (highlight changes)</i>			
Pref.	Num.	Title	Cr. Hrs.	Pref.	Num.	Title	Cr. Hrs.
				PRAG	304- 304L	Electrical Diagnosis for Farm Machinery & Lab	
ET OR ET	330-330L 451-451L	Microcontrollers and Networks & Lab Industrial Controls and PLCs & Lab	3	ET OR ET	330-330L 451-451L	Microcontrollers and Networks & Lab Industrial Controls and PLCs & Lab	3
				ET	370-370L	Data Acquisition	3
				AST OR OM OR AST OR ET	494 494 497 497	Internship Internship Cooperative Education Cooperative Education	2
		Technical Electives	4			Technical Electives	4
Total number of hours required for minor			18	Total number of hours required for minor			18

CIP Code:

Current Program CIP Code: 15.0303; Title: Electrical, Electronic, and Communications Engineering Technology/Technician.

Definition: A program that prepares individuals to apply basic engineering principles and technical skills in support of electrical, electronics and communication engineers. Includes instruction in electrical circuitry, prototype development and testing, systems analysis and testing, systems maintenance, instrument calibration, and report preparation.

Proposed CIP Code: 15.0407; Title: Mechatronics, Robotics, and Automation Engineering Technology/Technician.

Definition: A program that prepares individuals to apply basic engineering principles and technical skills in the support of engineers to the design, development, and operational evaluation of autonomous, computer-controlled, electro-mechanical systems. Includes instruction in computer and software engineering, control engineering, electronic and electrical engineering, mechanical engineering, and robotics.

7. Explanation of the Change:

Mechatronics is a fast growing subdiscipline in applied engineering and technology programs. Based on a review of regional industry trends, these modifications to the Electronics minor will broaden its appeal to students seeking positions in manufacturing automation, precision agriculture, and/or systems maintenance. A practical requirement was added to the minor to assure students have the opportunity to apply their knowledge and skills with this minor.