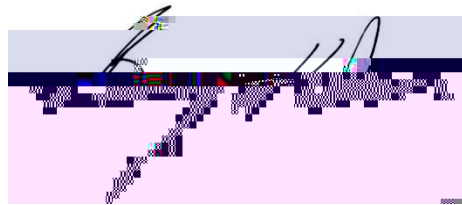


**SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS**

New Certificate

UNIVERSITY:	SDSU
TITLE OF PROPOSED CERTIFICATE:	Surface Mount Technology
INTENDED DATE OF IMPLEMENTATION:	Fall 2024
PROPOSED CIP CODE:	15.0616
UNIVERSITY DEPARTMENT:	Construction and Concrete Industry Management
BANNER DEPARTMENT CODE:	SCCM
UNIVERSITY DIVISION:	Jerome J Lohr College of Engineering
BANNER DIVISION CODE:	3E

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3. If you do not have a major in this field, explain how the proposed certificate relates to your university mission and strategic plan, and to the current Board of Regents Strategic Plan 2014-2020.

SDBOR Policy 1.2.5 states South Dakota State University's mission is to offer academic programs in the liberal arts and sciences and professional education in agriculture, education, engineering, home economics, business economics, nursing, and pharmacy. The Surface Mount Technology graduate certificate supports the educational mission of SDSU by providing a needed area of professional education in a necessary engineering technique utilized in regional manufacturing. The certificate aligns with the South Dakota Board of Regents Strategic Plan 2022-2027 Goal 4: Workforce and Economic Development and SDSU's Strategic Plan Pathway to Premier 2030 Goal 1: Achieve Excellence

consortium among the regional companies that would benefit from this training with the effort being spearheaded by Daktronics. There were over 25 people in attendance representing 8 regional companies and the national Surface Mount Technology Association with additional companies noting that they support the idea but were unable to attend the meeting on short notice. From this meeting, there was an estimate of at least 50 employees needed among the regional industries to meet their present needs. With the current move in the United States to domesticate circuit board and semiconductor manufacturing through the CHIPS act, there will be an increase in need.

- 5. Who is the intended audience for the certificate program (including but not limited to the majors/degree programs from which students are expected)?**

prerequisite courses. In addition, certificates typically involve existing courses. If the

Demonstrate quality control methods and processes used in Printed Circuit board manufacture.

Identify different types of machines used in manufacturing printed circuit boards.

B. Complete the table below to list specific learning outcomes knowledge and competencies for courses in the proposed program in each row.

Individual Student Outcome	Program Courses that Address the Outcomes			
	MNET 567	MNET 568	MNET 569	OM 562
Students will be able to describe the Institute of Printed Circuits (IPC) standards and printed circuit board structure and materials.	x			
Students will be able to describe manufacturing processes and methods including LEAN, Screen Printing, Component Pick and Place, Soldering and Test procedures.	x	x		x
Students will be able to demonstrate quality control methods and processes used in Printed Circuit board manufacture.			x	
Students will be able to identify different types of machines used in manufacturing printed circuit boards.	x		x	

9. Delivery Location.

*Note: The accreditation requirements of the Higher Learning Commission (HLC) require Board approval for a university to offer programs off-campus and f t n Span ~~087~~mG(e)1(r)8)1(1)1G(c)1(a)6m)11(p)6(s)99(n9.96*nBTF0.96f1 01 24*

(e.g., as an on-line program)? *This question responds to HLC definitions for distance delivery.*

**Distance Delivery
(online/other distance
delivery methods)**

Yes/No	<i>If Yes, identify delivery methods</i>	<i>Intended Start Date</i>
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Certificate, Surface Mount Technology Minor

3.3. Proposed instructional method by university (as defined by [AAC Guideline 5.4](#)): R - Lecture

3.4. Proposed delivery method by university (as defined by [AAC Guideline 5.5](#)): 001 – Face to Face

3.5. Term change will be effective: fall 2024

3.6. Can students repeat the course for additional credit? Yes, total credit limit: No

3.7. Will grade for this course be limited to S/U (pass/fail)? Yes No

3.8. Will section enrollment be capped? Yes, max per section: 20 No

3.9. Will this course equate (i.e., be considered the same course for degree completion) with any other unique or common courses in the common course system database in Colleague and the Course Inventory Report? Yes No

3.10. Is this prefix approved for your university? Yes No

Section 4. Department and Course Codes (Completed by University Academic Affairs)

4.1. University Department: Construction and Concrete Industry Management

4.2. Banner Department Code: SCCM

4.3. Proposed CIP Code: 15.0616

Is this a new CIP code for the university? Yes

10. If this course may be offered for variable credit, explain how the amount of credit at each offering is to be determined.

N/A



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Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

No. Schedule Management, explain below: The Surface Mount Technology Education consortium will be providing guest speakers and access to an industrial manufacturing process line for course activities. SDSU will provide an instructor to coordinate the course.

3.2. Existing program(s) in which course will be offered: Surface Mount Technology Graduate Certificate, Surface Mount Technology Minor

3.3. Proposed instructional method by university (as defined by [AAC Guideline 5.4](#)): L - Laboratory

3.4. Proposed delivery method by university (as defined by [AAC Guideline 5.5](#)): 001 – Face to Face

3.5. Term change will be effective: fall 2024

3.6. Can students repeat the course for additional credit? Yes, total credit limit: No

3.7. Will grade for this course be limited to S/U (pass/fail)? Yes No

3.8. Will section enrollment be capped? Yes, max per section: 20 No

3.9. Will this course equate (i.e., be considered the same course for degree completion) with any other unique or common courses in the common course system database in Colleague and the Course Inventory Report? Yes No

3.10. Is this prefix approved for your university? Yes No

Section 4. Department and Course Codes (Completed by University Academic Affairs)

4.1. University Department: Construction and Concrete Industry Management

4.2. Banner Department Code: SCCM

4.3. Proposed CIP Code: 15.0616

Is this a new CIP code for the university? YesSe

7. Note whether adequate facilities are available and list any special equipment needed for the course.
Surface Mount Technology requires access to industrial equipment not at SDSU. Given the cost and rapidly changing technology, SDSU will partner with the Surface Mount Technology Education Consortium to use equipment at operating surface mount facilities. Daktronics has pledged to provide access to an operating manufacturing line at least one day per week for course activities.
8. Note whether adequate library and media support are available for the course.
Library and media support is adequate for this course as the topic is contained in IEEE journals and other journals presently available through the library.
9. Will the new course duplicate courses currently being offered on this campus? Yes No
10. If this course may be offered for variable credit, explain how the amount of credit at each offering is to be determined.