



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

New Undergraduate Degree Program

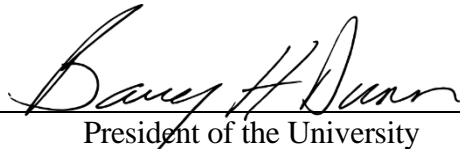
UNIVERSITY:	SDSU
MAJOR:	Concrete Industry Management
EXISTING OR NEW MAJOR(S):	New
DEGREE:	Bachelor of Science (B.S.)
EXISTING OR NEW DEGREE(S):	Existing
INTENDED DATE OF IMPLEMENTATION:	2021-2022 Academic Year
PROPOSED CIP CODE:	15.1501
SPECIALIZATIONS:	N/A
IS A SPECIALIZATION REQUIRED (Y/N):	No
DATE OF INTENT TO PLAN APPROVAL:	3/30/2021
UNIVERSITY DEPARTMENT:	Construction & Operations Management
BANNER DEPARTMENT CODE:	SCOM
UNIVERSITY DIVISION:	Jerome J. Lohr College of Engineering
BANNER DIVISION CODE:	3E

Please check this box to confirm that:

- The individual preparing this request has read [AAC Guideline 2:9](#), which pertains to new undergraduate degree program requests, and that this request meets the requirements outlined in the guidelines.
- This request will not be posted to the university website for review of the Academic Affairs Committee until it is approved by the Executive Director and Chief Academic Officer.

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.



President of the University

3/16/2020

Date

1. What is the nature/purpose of the proposed program? Please include a brief (1-2 sentence) description of the academic field in this program.

South Dakota State University (SDSU) requests authorization to offer a B.S. in Concrete Industry Management. The Concrete Industry Management program will fill a growing need for technical managers in the concrete industry. The program produces graduates grounded in business management who are knowledgeable of concrete applications, properties of materials, are prepared to manage people, finances, and production systems as well as market products and services related to the concrete industry.¹

¹ <https://www.concretedegree.com/the-cim-program/>

The demand for graduates with a B.S. in Concrete Industry Management has outstripped supply as there are currently only four CIM undergraduate programs in the nation: Middle Tennessee State University, New Jersey Institute of Technology, California State University – Chico, and Texas State University. The University does not request new state resources to offer the program. The CIM North Central Region Patrons Group in concert with the National Steering Committee for Concrete Industry Management programs saw the need for a program in the upper Midwest and sent out an RFP to future potential universities to house an expansion program in summer 2020. SDSU was selected as the recipient for over \$1M in targeted funds over five years to launch the next Concrete Industry Management program.

2. How does the proposed program relate to the university’s mission and strategic plan, and to the current Board of Regents Strategic Plan 2014-2020?

South Dakota State University’s mission is to “*provide undergraduate and graduate programs of instruction in the liberal arts and sciences and professional education in agriculture, education, engineering, human science, nursing and pharmacy, and other courses or programs as the Board of Regents may determine.*” (SDCL 13-58-1)²

Furthermore, Board-approved programs currently include “*...programs in the agricultural sciences, aviation, education, engineering and technology, human sciences, humanities and liberal arts, nursing, performing and visual arts, pharmaceutical sciences, physical and biological sciences, and social sciences.*” (Board Policy 1:10:2)³

A Bachelor of Science in Concrete Industry Management supports the South Dakota Board of Regents Strategic Plan 2014-2020⁴ goals and relevant action steps:

Goal 1: Student Success

- Grow the number of undergraduate and graduate degrees awarded.
 - Encourage campuses to create innovative programs to attract and retain in SD, more non-resident students.

Goal 2: Academic Quality and Performance

- Grow the number of students participating in experiential learning.
- Increase the number of accredited programs.⁵

Goal 3: Research and Economic Development

- Increase the number of graduates from STEM programs.
 - Encourage development of academic programs and certificates that align with existing and future state workforce needs.

Goal 4: Affordability and Accountability

- Reduce education and related spending per degree.
 - Identify new and innovative ways to deliver high-quality academic courses and programs that create new markets and reduce cost.

² Retrieved from: https://sdlegislature.gov/Statutes/Codified_Laws/DisplayStatute.aspx?Type=Statute&Statute=13-58-1

³ Retrieved from: <https://www.sdbor.edu/policy/documents/1-10-2.pdf>

⁴ Retrieved from: https://www.sdbor.edu/the-board/agendaitems/Documents/2014/October/16_BOR1014.pdf

⁵ The CIM program outcomes have been designed to meet the requirements for future ATMAE accreditation.

3. Describe the workforce demand for graduates of the program, including national demand and demand within South Dakota.

The demand for graduates with a B.S. in Concrete Industry Management has outstripped supply as there are currently only four CIM undergraduate programs in the nation: Middle Tennessee State University, New Jersey Institute of Technology, California State University – Chico, and Texas State University. The University does not request new state resources to offer the program. The CIM North Central Region Patrons Group in concert with the National Steering Committee for Concrete Industry Management programs saw the need for a program in the upper Midwest and sent out an RFP to future potential universities to house an expansion program in summer 2020. SDSU was selected as the recipient for over \$1M in targeted funds over five years to launch the next Concrete Industry Management program.

Typical career opportunities for a person with a CIM degree include concrete plant manager, precast production manager, precast product sales, product distribution sales manager, field engineer, concrete testing (in-plant and in field), materials quality control, concrete product distribution manager, and project manager. The current CIM degree programs have enjoyed strong recruitment of their graduates and SDSU anticipates similar positive outcomes.

As this new program will primarily serve concrete industry management workforce needs for the North Central Region (South Dakota, North Dakota, Minnesota, Wisconsin, Iowa, Illinois, Michigan, Nebraska, and Missouri), U.S. Bureau of Labor Statistics national data ⁶ is presented here.

Sector	Timeframe	Avg. Change in Demand
Precast Concrete Products	2000 – 2020	+3.1% per year
Concrete Pipe Manufacturing	2000 – 2020 For 2020	+3.6% per year 7.2% per month
Pre-stressed Concrete Bridge Beams	2018 – 2020	8.6% per year
Other Concrete Product Manufacturing	2010 – 2020	3.4% per year

The demand for Concrete Industry Management program graduates is very strong and, based on the most recent CIM Annual Report for 2018-2019⁷ there were 472 students enrolled at the four institutions with the CIM degree, had 69 graduates, and an average 80% industry retention rate in the five years following graduation. The compelling reason for the National Steering Committee to establish a new CIM program at SDSU is current and forecast demand for program graduates in the Midwest region.

4. How will the proposed program benefit students?

The demand for managers in the concrete industry is strong and growing particularly as the current managerial workforce reaches retirement age and replacements are needed. The proposed Concrete Industry Management program will provide a career path for students interested in concrete applications in construction, concrete product manufacturing, industrial sales, and supply chain management. The North Central Region Patrons Group is especially interested in a high-quality learning experience at a reasonable cost and is making a substantial commitment to cover resource needs to launch the new program at SDSU to fund faculty, lab equipment, and scholarships for students in addition to hiring a recruiter to bring students to

⁶ <https://beta.bls.gov/dataQuery/find?q=concrete+industrial-organizational&q=concrete>

⁷ <https://www.concretedegree.com/about/cim-annual-report/>

SDSU for the CIM program. It is anticipated most CIM students will be from South Dakota, consistent with current enrollment trends at SDSU.

5. Program Proposal Rationale:

A. If a new degree is proposed, what is the rationale?

This is not a new degree.

B. What is the rationale for the curriculum?

The overarching objective for this new program is to produce graduates grounded in the basics of concrete material production techniques and their application to construction projects. The Concrete Industry Management curriculum incorporates this technical content with a required management or marketing minor to address the specific needs of the concrete industry.⁸ This program will have a decided technical management emphasis melding mathematics, materials science, design of structures and forms with at least one industry-based internship experience.

C. Demonstrate/provide evidence that the curriculum is consistent with current national standards. Complete the tables below and explain any unusual aspects of the proposed curriculum?

The CIM program curriculum was developed with input from Dr. Heather Brown, CIM Program Director at Middle Tennessee State University, Gene Martineau, National Steering Committee Chair, and Thor Becken, Regional Patrons Group Chair. The core course content is common to all CIM programs and the learning outcomes are aligned with future planned accreditation with the Association of Technology, Management, and Applied Engineering (ATMAE).

D. Summary of the degree program (complete the following tables):

B.S. in Concrete Industry Management	Credit Hours	Credit Hours	Percent
System General Education Requirements	31		
Subtotal, Degree Requirements		31	26%
Supporting Coursework	31		
Major Requirements	58		
Subtotal, Program Requirements		89	74%
Electives		0	0%
Degree Total		120	100%

System General Education Requirements

Prefix	Number	Course Title	Credit Hours	New (yes, no)
ENGL	101	Composition I SGR #1 Written Communication	3	No

⁸ <https://www.concretedegree.com/the-cim-program/>

Prefix	Number	Course Title	Credit Hours	New (yes, no)
ENGL OR ENGL	201	Composition II (3 cr.)	3	No
	277	Technical Writing in Engineering (3 cr.) SGR #1 Written Communication		
CMST	101	Fundamentals of Speech SGR #2 Oral Communication	3	No
ECON	201	Principles of Microeconomics SGR #3 Social Sciences/Diversity	3	No
		SGR #3 Social Sciences/Diversity	3	No
		SGR #4 Humanities and Arts/Diversity	3	No
		SGR #4 Humanities and Arts/Diversity	3	No
MATH	114	College Algebra SGR #5 Mathematics	3	No
CHEM	106-106L	Survey of Chemistry & Lab SGR #6 Natural Sciences	3, 1	No
PS	243	Principles of Geology SGR #6 Natural Sciences	3	No
Subtotal			31	

Supporting Coursework

Prefix	Number	Course Title	Credit Hours	New (yes, no)
GE	101	Introduction to Engineering & Technology Professions	1	No
GE	469	Project Management	3	No
OM	425	Production and Operations Management	3	No
OM	463	Supply Chain Management	3	No
STAT	281	Introduction to Statistics	3	No
Select <u>one</u> of the following minors:			18	
Management Minor:				
ACCT	210	Principles of Accounting I	3	No
ACCT	211	Principles of Accounting II	3	No
BADM / MGMT	360	Organization & Management	3	No
CSC / MGMT	325	Management Information Systems	3	No
FIN	310	Business Finance	3	No
HRM	460	Human Resource Management	3	No
Marketing Minor:				
ADV	314	Digital Promotions	3	No
ADV	370	Advertising Principles	3	No
MKTG	370	Marketing	3	No
MKTG	476	Marketing Research	3	No
MGMT	334	Small Business Management	3	No
MKTG	474	Personal Selling	3	No
Subtotal			31	

Major Requirements

Prefix	Number	Course Title	Credit Hours	New (yes, no)
CIM	101	Introduction to Concrete Industry Management	2	Yes
CIM	125	Plans & Specifications	1	Yes
CIM	210-210L	Fundamentals of Concrete: Properties and Testing & Lab	3, 1	Yes
CIM	216	Concrete Methods and Materials	3	Yes
CIM	230	Concrete Construction Systems	3	Yes
CIM	310	Management of Concrete Facilities	3	Yes
CIM	350	Concrete Applications and Estimating	3	Yes
CIM	370	Concrete Production and Delivery	3	Yes
CIM	440-440L	Advanced Concrete Materials & Lab	3, 1	Yes
CIM	450	Concrete Repair and Restoration	3	Yes
CIM	471	Capstone Experience	3	Yes
CIM	494	Internship	3	Yes
CM	130	Management Tools & Analysis	3	No
CM OR GE	400 425	Risk Management & Construction Safety (3 cr.) Occupational Safety & Health Management (3 cr.)	3	No
CM	460	Sustainable Building Systems & Design	3	No
CM	473	Construction Law & Contracts	3	No
MNET	367-367L	Production Strategy & Lab	3, 0	No
Technical	Elective	Any 200-400 Level CM, OM, GE course or Advisor Approved Technical Elective	8	No
Subtotal			58	

6. Student Outcomes and Demonstration of Individual Achievement

A. What specific knowledge and competencies, including technology competencies, will all students demonstrate before graduation?

Individual Student Outcome	Program Courses that Address the Outcomes																
	CIM 101	CIM 125	CIM 210	CIM 216	CIM 310	CIM 350	CIM 370	CIM 440	CIM 450	CIM 471	CIM 494	CM 130	CM 400 or GE 425	CM 460	CM 473	MNET 367	Tech Electives
An ability to apply knowledge of mathematics, science, and technology to technical problems.	X								X		X						
A knowledge of modern techniques, tools, and concrete construction methods.			X	X			X		X					X			
An ability to conduct standard tests and experiments, to analyze and interpret data.			X					X			X					X	
An understanding of principles of concrete production, efficiency and quality management procedures.					X		X			X							

Individual Student Outcome	Program Courses that Address the Outcomes																	
	CIM 101	CIM 125	CIM 210	CIM 216	CIM 310	CIM 350	CIM 370	CIM 440	CIM 450	CIM 471	CIM 494	CM 130	CM 400 or GE 425	CM 460	CM 473	MNET 367	Tech Electives	
An ability to communicate effectively in oral and written forms and demonstrate effective teamwork skills.		X	X			X				X	X							X
An understanding of the legal, professional and ethical responsibilities of the profession.	X				X								X		X			
An ability to apply basic accounting and management principles applicable to the concrete industry.					X					X	X	X						

B. Are national instruments (i.e., examinations) available to measure individual student achievement in this field? If so, list them.

Students will be expected to earn at least two American Concrete Institute (ACI) certifications⁹ via the required coursework. The ACI Field Concrete Testing and Concrete Flatwork Finishing specialist certifications are externally validated performance outcomes the University will use to measure competence. An additional ACI certification in Concrete Testing will be an option for students.

C. How will individual students demonstrate mastery? Describe the specific examinations and/or processes used, including any external measures (including national exams, externally evaluated portfolios, or student activities, etc.). What are the consequences for students who do not demonstrate mastery?

These certifications have a written and a performance exam. Student must have at least 60% correct on the written portion and score a minimum of 70% overall. The new CIM Program Director will have credentials to cover the Job Task Analysis content and will facilitate the exams. Students who fail to meet the minimum standards will risk earning a lower grade in CM 210 Fundamentals of Concrete and/or CIM 216 Concrete Methods and Materials. This may also have an impact on their post-graduation employability but will not preclude them from graduating with a degree.

7. What instructional approaches and technologies will instructors use to teach courses in the program? This refers to the instructional technologies and approaches used to teach courses and NOT the technology applications and approaches expected of students.

Most courses will be lecture format using active learning and inductive teaching techniques. Some courses will be offered in departmental computer labs for students to use software used in the industry. There are a number of concrete materials labs that will require students learn how to use testing and measuring equipment as well as fabrication processes to build forms and fixtures.

8. Did the University engage any developmental consultants to assist with the development of the curriculum? Did the University consult any professional or accrediting

⁹ American Concrete Institute Certifications: <https://www.concrete.org/certification/certificationprograms.aspx>

associations during the development of the curriculum? What were the contributions of the consultants and associations to the development of curriculum?

No. The University did not use developmental consultants but worked with the CIM National Steering Committee. This group has funded and supported development of four Concrete Industry Management programs across the nation and is the driving force behind the new degree program at SDSU. They have reviewed the draft curriculum, provided constructive feedback and guidance, and will work closely with SDSU as the program is launched and grows. The Department of Construction and Operations Management has contacted ATMAE to verify timelines and any future changes to accreditation standards to assure SDSU has a program that can meet their requirements.

9. Are students enrolling in the program expected to be new to the university or redirected from other existing programs at the university? Complete the table below and explain the methodology used in developing the estimates.

It is expected that students will be both new to the University and redirected from other programs. Starting fall 2021, the CIM Patrons Group in concert with the new Concrete Industry Management program coordinator will launch a regional recruiting drive. It is anticipated the program will start with 7 students in fall 2021 and grow to 151 students by FY25. A retention rate of 85% has been applied between the freshman and sophomore year. At the junior and senior level, retention rates rise to 98%. This is based on historical recruitment and retention data for the department.

	Fiscal Years*			
	1st	2nd	3rd	4th
<i>Estimates</i>	FY 22	FY 23	FY 24	FY 25
Students new to the university	2	25	40	60
Students from other university programs	5	8	8	8
Continuing students	0	6	38	83
=Total students in the program (fall)	7	39	86	151
Program credit hours (major courses)**	49	624	996	1812
Graduates	0	0	2	4

*Do not include current fiscal year.

**This is the total number of credit hours generated by students in the program in the required or elective program courses. Use the same numbers in Appendix B – Budget.

10. Is program accreditation available? If so, identify the accrediting organization and explain whether accreditation is required or optional, the resources required, and the University’s plans concerning the accreditation of this program.

Yes. The Concrete Industry Management program is required to seek accreditation under the Association of Technology, Management, and Applied Engineering (ATMAE). It is anticipated the University could apply for a site visit as early as year six of the program (FY 26) based on ATMAE standards and outcomes assessment data reporting requirements. The external funds provided in the first five years by the Patrons Group will cover faculty, facilities, equipment, technical support, and administrative resources necessary to achieve accreditation.

**11. Does the University request any exceptions to any Board policy for this program?
 Explain any requests for exceptions to Board Policy. If not requesting any exceptions,
 enter "None."**

None.

12. Delivery Location

Note: The accreditation requirements of the Higher Learning Commission (HLC) require Board approval for a university to offer programs off-campus and through distance delivery.

A. Complete the following charts to indicate if the university seeks authorization to deliver the entire program on campus, at any off campus location (e.g., UC Sioux Falls, Capital University Center, Black Hills State University-Rapid City, etc.) or deliver the entire program through distance technology (e.g., as an online program)?

	Yes/No	Intended Start Date
On campus	Yes	2021-2022 Academic Year

	Yes/No	If Yes, list location(s)	Intended Start Date
Off campus	No		

	Yes/No	If Yes, identify delivery methods <i>Delivery methods are defined in AAC Guideline 5.5.</i>	Intended Start Date
Distance Delivery (online/other distance delivery methods)	No		
Does another BOR institution already have authorization to offer the program online?	No	If yes, identify institutions:	

B. Complete the following chart to indicate if the university seeks authorization to deliver more than 50% but less than 100% of the program through distance learning (e.g., as an online program)? This question responds to HLC definitions for distance delivery.

	Yes/No	If Yes, identify delivery methods	Intended Start Date
Distance Delivery (online/other distance delivery methods)	No		

13. Cost, Budget, and Resources: Explain the amount and source(s) of any one-time and continuing investments in personnel, professional development, release time, time redirected from other assignments, instructional technology & software, other operations and maintenance, facilities, etc., needed to implement the proposed major.

Address off-campus or distance delivery separately. Complete Appendix B – Budget and briefly summarize to support Board staff analysis.

The CIM National Steering Committee and the regional concrete industry Patrons Group have formed a 501(c)3 in support of the new program. They have committed to provide \$200,000 per year for five years to SDSU for the program. This will provide funding for program management, faculty and staff, lab equipment, travel, and scholarships for students. It is expected program revenues from tuition and fees will ultimately offset the donor contributions by year five when their support can go to scholarships for students in the program.

14. Is the university requesting or intending to request permission for a new fee or to attach an existing fee to the program? If yes, explain.

Yes No

Explanation: The Concrete Industry Management program is an analog to existing programs in the department and college that levy the \$84.40/credit hour Engineering Discipline fee. While the program will have startup funds from the industry Patrons Group, it is expected to be self-supporting by year 5. The proforma SDSU developed included Engineering Discipline fee demonstrating the University could meet this requirement.

15. New Course Approval: New courses required to implement the new undergraduate degree program may receive approval in conjunction with program approval or receive approval separately. Please check the appropriate statement:

YES, the university is seeking approval of new courses related to the proposed program in conjunction with program approval. All New Course Request forms are included as an Appendix and match those described in section 5D.

NO, the university is not seeking approval of all new courses related to the proposed program in conjunction with program approval; the institution will submit new course approval requests separately or at a later date in accordance with Academic Affairs Guidelines.

Appendix A
Budget

South Dakota State University, B.S. in Concrete Industry Management

1. Assumptions

		1st FY22	2nd FY23	3rd FY24	4th FY25
<i>Headcount & hours from proposal</i>					
Fall headcount (see table in proposal)		7	39	83	151
Program FY cr hrs, On-Campus		49	624	996	1,812
Program FY cr hrs, Off-Campus		0	0	0	0
Faculty, Regular FTE	See p. 3	1.00	2.00	2.50	2.75
Faculty Salary & Benefits, average	See p. 3	\$111,412	\$111,412	\$111,412	\$111,412
Faculty, Adjunct - number of courses	See p. 3	1	2	2	3
Faculty, Adjunct - per course	See p. 3	\$4,000	\$4,000	\$4,000	\$4,000
Other FTE (see next page)	See p. 3	0.33	0.50	0.50	1.00
Other Salary & Benefits, average	See p. 3	\$59,941	\$59,941	\$59,941	\$59,941

2. Budget

<i>Salary & Benefits</i>					
Faculty, Regular		\$111,412	\$222,824	\$278,530	\$306,383
Faculty, Adjunct (rate x number of courses)		\$4,000	\$4,000	\$4,000	\$4,000
Other FTE		\$19,781	\$29,971	\$29,971	\$59,941
	S&B Subtotal	\$135,193	\$256,795	\$312,501	\$370,324
<i>Operating Expenses</i>					
Travel		\$2,400	\$3,000	\$3,500	\$5,000
Contractual Services		\$600	\$600	\$600	\$600
Supplies & materials		\$7,500	\$8,500	\$5,000	\$6,000
Capital equipment		\$10,000	\$15,000	\$75,000	\$50,000
	OE Subtotal	\$20,500	\$27,100	\$84,100	\$61,600
	Total	\$155,693	\$283,895	\$396,601	\$431,924

3. Program Resources

Off-campus support tuition/hr, HEFF net	UG	\$300.94	\$300.94	\$300.94	\$300.94
Off-campus tuition revenue	hrs x amt	\$0	\$0	\$0	\$0
On-campus support tuition/hr, HEFF net	UG	\$219.79	\$219.79	\$219.79	\$219.79
On-campus tuition revenue	hrs x amt	\$10,770	\$137,149	\$218,911	\$398,259
Program fee, per cr hr (if any)	\$84.40	\$4,136	\$52,666	\$84,062	\$152,933
Delivery fee, per cr hr (if any)	\$0.00	\$0	\$0	\$0	\$0
University redirections		\$0	\$0	\$0	\$0
Community/Employers		\$0	\$0	\$0	\$0

Grants/Donations/Other	\$200,000	\$200,000	\$200,000	\$200,000
Total Resources	\$214,905	\$389,814	\$502,973	\$751,192

Resources Over (Under) Budget **\$59,212** **\$105,919** **\$106,372** **\$319,268**
 Provide a summary of the program costs and resources in the new program proposal.

Estimated Salary & Benefits per FTE	Faculty	Other
Estimated salary (average) - explain below	\$90,000	\$45,000
University's variable benefits rate (see below)	0.1438	0.1438
Variable benefits	\$12,942	\$6,471
Health insurance/FTE, FY18	\$8,470	\$8,470
<i>Average S&B</i>	\$111,412	\$59,941

Explain faculty used to develop the average salary & fiscal year salaries used. Enter amount above.

Using the OK Survey for CIP 15.1501 Engineering/Industrial Management faculty, 12 month Asst. Professor at 90%. This will be Professor of Practice rank, currently under review by Provost's Task Force.

Explain adjunct faculty costs used in table:

1-2 courses per year to be taught by adjuncts at \$4000 per course.

Explain other [for example, CSA or exempt] salary & benefits. Enter amount above.

We will need a dedicated lab manager in year 4 of the program. Until then, we will leverage our existing AME Lab Coordinator & hire qualified student helpers.

Summarize the operating expenses shown in the table:

Year 1: 1 FTE Program Director/Faculty Member Salary & Benefits; computer software & lab supplies; travel to industry conference & oversight committee meeting. Year 2: 1 FTE Asst. Professor Tenure Track added; computer lab updates. Year 3: 1 FTE Lecturer Track faculty member added; major purchases of concrete testing and fabrication equipment; Year 4: 1 FTE NFE Lab manager added; additional dedicated concrete lab equipment.

Summarize resources available to support the new program (redirection, donations, grants, etc).

The CIM National Steering Committee and the regional industry Patrons Group have signed an MOU with SDSU to provide at least \$200,000 per year to fund the program.

State-support: Change cell on page 1 to use the UG or GR net amount.

	FY19			
Off-Campus Tuition, HEFF & Net	Rate	HEFF	Net	
Undergraduate	\$340.05	\$39.11	\$300.94	Change cell on page 1
Graduate	\$450.90	\$51.85	\$399.05	to point to your net

Externally Supported \$40.00

State-support: Change cell on page 1 to use the UG or GR net amount for your university.

On-Campus Tuition, HEFF & Net	FY19			
	Rate	HEFF	Net	
UG Resident - DSU, NSU	\$243.30	\$27.98	\$215.32	<i>Change cell on page 1</i>
UG Resident - SDSU, USD	\$248.35	\$28.56	\$219.79	
UG Resident - BHSU	\$254.20	\$29.23	\$224.97	<i>to point to your net</i>
UG Resident - SDSMT	\$249.70	\$28.72	\$220.98	
GR Resident - DSU, NSU	\$319.40	\$36.73	\$282.67	<i>Change cell on page 1</i>
GR Resident - SDSU, USD	\$326.05	\$37.50	\$288.55	
GR Resident - BHSU	\$328.20	\$37.74	\$290.46	<i>to point to your net</i>
GR Resident - SDSMT	\$324.85	\$37.36	\$287.49	
UG Nonresident - DSU, NSU	\$342.40	\$39.38	\$303.02	<i>Change cell on page 1</i>
UG Nonresident - BHSU	\$355.70	\$40.91	\$314.79	<i>to point to your net</i>
UG Nonresident - SDSU, USD	\$360.50	\$41.46	\$319.04	
UG Nonresident - SDSMT	\$391.10	\$44.98	\$346.12	
GR Nonresident - DSU, NSU	\$596.30	\$68.57	\$527.73	<i>Change cell on page 1</i>
GR Nonresident - BHSU	\$612.40	\$70.43	\$541.97	<i>to point to your net</i>
GR Nonresident - SDSU, USD	\$626.85	\$72.09	\$554.76	
GR Nonresident - SDSMT	\$652.00	\$74.98	\$577.02	
UG Sioux Falls Associate Degree	\$275.40	\$31.67	\$243.73	<i>Change cell on page 1 to point to your net</i>

Variable Benefits Rates

University	FY19	
BHSU	14.64%	<i>Change the benefits rate cell in the table on page 2 to point to the rate for your university.</i>
DSU	14.36%	
NSU	14.31%	
SDSM&T	14.20%	
SDSU	14.38%	
USD	14.34%	

Appendix B
New Course Requests



SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

New Course Request

<u>SDSU</u>	<u>Jerome J. Lohr College of Engineering / Construction & Operations Management</u>
Institution	Division/Department
<u>Dennis D. Hedge</u>	<u>2/24/2021</u>
Institutional Approval Signature	Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
CIM 101	Introduction to Concrete Industry Management	2

Course Description	Introduction to the concrete industry, its history, job functions and professional organizations. Covers contemporary practices in precast, ready mix, and related industry sectors.
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Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
None		

Registration Restrictions

None

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
CM 101	Introduction to Construction	1
GE 101	Introduction to Engineering & Technology Professions	1

Provide explanation of differences between proposed course and existing system catalog courses below:
 CIM 101 is limited to concrete industry topics and professional practices. CM 101 targets construction managers – a different career path. GE 101 is a survey of all majors and affiliated career paths in engineering, computer science, mathematics, applied management, and engineering technology.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: R - Lecture

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

**NEW COURSE REQUEST
 Supporting Justification for On-Campus Review**

Teresa Hall Request Originator	Teresa J.K. Hall Signature	1/8/2021 Date
Teresa Hall Department Chair	Teresa J.K. Hall Signature	1/8/2021 Date
Bruce Berdanier School/College Dean	Bruce Berdanier Signature	1/15/2021 Date

- Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.
 This course and accompanying new course requests are to establish the new B.S. in Concrete Industry Management (CIM) at SDSU. The CIM program requirements ultimately will result in an accredited program under the Association of Technology, Management, and Applied Engineering (ATMAE).
- Note whether this course is: Required Elective
- In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?
 None.
- If this will be a dual listed course, indicate how the distinction between the two levels will be made.
 N/A
- Desired section size 35
- Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).
 Search is currently underway for the first CIM faculty member who will teach in the CIM program as well as serve as Program Director. The Department is seeking a person with at least 10 years relevant industry experience, credentials consistent with a Professor of Practice rank.
- Note whether adequate facilities are available and list any special equipment needed for the course.
 The Department of Construction & Operations Management has adequate instructional facilities for this course.
- Note whether adequate library and media support are available for the course.
 There is adequate library and media support available.

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.
 N/A



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

New Course Request

SDSU	Jerome J. Lohr College of Engineering / Construction & Operations Management
Institution	Division/Department
Dennis D. Hedge	2/24/2021
Institutional Approval Signature	Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
CIM 125	Plans and Specifications	1

Course Description	Introduction to reading construction plans to gain an understanding pre-construction build specifications. Commercial, heavy construction, and residential plans are covered.
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Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
None		

Registration Restrictions

None

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
CM 124	Construction Graphics	2
GE 121	Engineering Design Graphics I	1

Provide explanation of differences between proposed course and existing system catalog courses below:

CIM 125 is narrowly focused on concrete elements of the construction project and includes highway projects. CM 124 is an introductory CAD course that covers all building systems from foundation to framework to mechanical/electrical systems. GE 121 is an introductory drawing course to prepare engineers to create component drawings.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: R - Lecture

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

**NEW COURSE REQUEST
 Supporting Justification for On-Campus Review**

Teresa Hall	Teresa J.K. Hall	1/8/2021
Request Originator	Signature	Date
Teresa Hall	Teresa J.K. Hall	1/8/2021
Department Chair	Signature	Date
Bruce Berdanier	Bruce Berdanier	1/15/2021
School/College Dean	Signature	Date

- Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.
 This course and accompanying new course requests are to establish the new B.S. in Concrete Industry Management (CIM) at SDSU. The CIM program requirements ultimately will result in an accredited program under the Association of Technology, Management, and Applied Engineering (ATMAE).
- Note whether this course is: Required Elective
- In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?
 None.
- If this will be a dual listed course, indicate how the distinction between the two levels will be made.
 N/A
- Desired section size 35
- Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).
 Search is currently underway for the first CIM faculty member who will teach in the CIM program as well as serve as Program Director. The Department is seeking a person with at least 10 years relevant industry experience, credentials consistent with a Professor of Practice rank.
- Note whether adequate facilities are available and list any special equipment needed for the course.
 The Department of Construction & Operations Management has adequate instructional facilities for this course. Test equipment in the Crothers Concrete Lab will be used for some lab exercises. Funding to purchase flatwork and forms, etc., will be provided by the external industry group.

8. Note whether adequate library and media support are available for the course.
 There is adequate library and media support available.
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.
 N/A



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

New Course Request

SDSU	Jerome J. Lohr College of Engineering / Construction & Operations Management
Institution	Division/Department
Dennis D. Hedge	2/24/2021
Institutional Approval Signature	Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
CIM 210	Fundamentals of Concrete: Properties & Testing	3
CIM 210L	Fundamentals of Concrete: Properties & Testing Lab	1

CIM 210 Course Description	Concrete testing, admixtures, placing and finishing. Effects of concrete-making processes on properties of fresh and hardened concrete materials. Course and lab includes preparatory for ACI Field Technician Certification exam.
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CIM 210L Course Description	Lab to accompany CIM 210.
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Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
CHEM 106	Chemistry Survey	Pre-requisite
CIM 125	Plans and Specifications	Pre-requisite
CIM 210-210L	Fundamentals of Concrete: Properties & Testing/ Lab	Co-requisite

Registration Restrictions

None

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
CEE 216-216L	Civil Engineering Materials & Lab	2, 1
CEE 456	Concrete Theory & Design	3

Provide explanation of differences between proposed course and existing system catalog courses below:

CIM 210-210L are limited to concrete materials and testing in the field as well as in labs.
 CEE 216-216L covers the gamut of metallic and non-metallic building materials, one

module on concrete. CEE 456 is an engineering design course with a focus on structural design and in-lab materials testing.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: CIM 210: R – Lecture; CIM 210L: L - Laboratory

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

**NEW COURSE REQUEST
 Supporting Justification for On-Campus Review**

Teresa Hall	Teresa J.K. Hall	1/8/2021
Request Originator	Signature	Date
Teresa Hall	Teresa J.K. Hall	1/8/2021
Department Chair	Signature	Date
Bruce Berdanier	Bruce Berdanier	1/15/2021
School/College Dean	Signature	Date

- Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.
 This course and accompanying new course requests are to establish the new B.S. in Concrete Industry Management (CIM) at SDSU. The CIM program requirements ultimately will result in an accredited program under the Association of Technology, Management, and Applied Engineering (ATMAE).
- Note whether this course is: Required Elective
- In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?
 None.
- If this will be a dual listed course, indicate how the distinction between the two levels will be made.
 N/A
- Desired section size 35

6. Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s). Search is currently underway for the first CIM faculty member who will teach in the CIM program as well as serve as Program Director. The Department is seeking a person with at least 10 years relevant industry experience, credentials consistent with a Professor of Practice rank.
7. Note whether adequate facilities are available and list any special equipment needed for the course. The Department of Construction & Operations Management has adequate instructional facilities for this course. Test equipment in the Crothers Concrete Lab will be used for some lab exercises. Funding to purchase flatwork and forms, etc., will be provided by the external industry group.
8. Note whether adequate library and media support are available for the course.
 There is adequate library and media support available.
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.
 N/A



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

New Course Request

<u>SDSU</u>	<u>Jerome J. Lohr College of Engineering / Construction & Operations Management</u>
Institution	Division/Department
<u>Dennis D. Hedge</u>	<u>2/24/2021</u>
Institutional Approval Signature	Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
CIM 216	Concrete Methods and Materials	3

Course Description	Methods of concrete production, placement, and finishing. Field applications including foundations, pavements, structural elements. Overview of precast manufacturing processes including continuous and discrete systems; ASTM concrete material properties, specifications and testing are covered.
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Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
CIM 101	Introduction to Concrete Industry Management	Pre-requisite

Registration Restrictions

None

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
CEE 216	Civil Engineering Materials	2

Prefix & No.	Course Title	Credits
CM 216	Construction Methods and Materials	3

Provide explanation of differences between proposed course and existing system catalog courses below:

CIM 216 content is limited to concrete materials and placement methods. CEE 216 covers the gamut of metallic and non-metallic materials, only one module on concrete. CM 216 is focused on commercial building processes and all material types used in construction.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: R - Lecture

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

**NEW COURSE REQUEST
 Supporting Justification for On-Campus Review**

Teresa Hall	Teresa J.K. Hall	1/8/2021
Request Originator	Signature	Date
Teresa Hall	Teresa J.K. Hall	1/8/2021
Department Chair	Signature	Date
Bruce Berdanier	Bruce Berdanier	1/15/2021
School/College Dean	Signature	Date

1. Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.

This course and accompanying new course requests are to establish the new B.S. in Concrete Industry Management (CIM) at SDSU. The CIM program requirements ultimately will result in an accredited program under the Association of Technology, Management, and Applied Engineering (ATMAE).

2. Note whether this course is: Required Elective

3. In addition to the major/program in which this course is offered, what other majors/programs will be

affected by this course?

None.

4. If this will be a dual listed course, indicate how the distinction between the two levels will be made.
N/A
5. Desired section size 35
6. Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).
Search is currently underway for the first CIM faculty member who will teach in the CIM program as well as serve as Program Director. The Department is seeking a person with at least 10 years relevant industry experience, credentials consistent with a Professor of Practice rank.
7. Note whether adequate facilities are available and list any special equipment needed for the course.
The Department of Construction & Operations Management has adequate instructional facilities for this course.
8. Note whether adequate library and media support are available for the course.
There is adequate library and media support available.
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.
N/A



**SOUTH DAKOTA BOARD OF REGENTS
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New Course Request

SDSU	Jerome J. Lohr College of Engineering / Construction & Operations Management
Institution	Division/Department
Dennis D. Hedge	2/24/2021
Institutional Approval Signature	Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
CIM 230	Concrete Construction Systems	3

Course Description	In-depth examination of how the concrete construction industry functions. Building codes, permits and standards; contracts and competitive bidding; quality assurance, customer relations, and regional markets.
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Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
CIM 216	Concrete Methods and Materials	Pre-requisite
CM 216	Construction Methods and Materials	Pre-requisite

Registration Restrictions

None

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
CM 332	Building Construction Methods and Systems	3
ARCH 434	Technology of Systems	3

Provide explanation of differences between proposed course and existing system catalog courses below:

CIM 230 is focused on regulatory issues and practices in the concrete industry. CM 332 covers commercial building practices including structure and finishes. ARCH 434 encompasses building system, design, performance, and sustainability.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: R - Lecture

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

**NEW COURSE REQUEST
 Supporting Justification for On-Campus Review**

<u>Teresa Hall</u>	<u>Teresa J.K. Hall</u>	<u>1/8/2021</u>
Request Originator	Signature	Date
<u>Teresa Hall</u>	<u>Teresa J.K. Hall</u>	<u>1/8/2021</u>
Department Chair	Signature	Date
<u>Bruce Berdanier</u>	<u>Bruce Berdanier</u>	<u>1/15/2021</u>
School/College Dean	Signature	Date

1. Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.

This course and accompanying new course requests are to establish the new B.S. in Concrete Industry Management (CIM) at SDSU. The CIM program requirements ultimately will result in an accredited program under the Association of Technology, Management, and Applied Engineering (ATMAE).

2. Note whether this course is: Required Elective
3. In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?
None.
4. If this will be a dual listed course, indicate how the distinction between the two levels will be made.
N/A
5. Desired section size 35
6. Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).
Search is currently underway for the first CIM faculty member who will teach in the CIM program as well as serve as Program Director. The Department is seeking a person with at least 10 years relevant industry experience, credentials consistent with a Professor of Practice rank.
7. Note whether adequate facilities are available and list any special equipment needed for the course.
The Department of Construction & Operations Management has adequate instructional facilities for this course.
8. Note whether adequate library and media support are available for the course.
There is adequate library and media support available.
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.
N/A



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

New Course Request

SDSU	Jerome J. Lohr College of Engineering / Construction & Operations Management
Institution	Division/Department
Dennis D. Hedge	2/24/2021
Institutional Approval Signature	Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
CIM 310	Management of Concrete Facilities	3

Course Description
Overview of the manufacturing process common to all concrete production facilities. Emphasis on the first-line supervisor and/or plant manager role. Ready mix, masonry, precast, prestress, and concrete pipe manufacturing covered.

Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
CIM 230	Concrete Construction Systems	Pre-requisite

Registration Restrictions

None

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
MNET 367-367L	Production Strategy & Lab	3, 0
OM 425	Production & Operations Management	3

Provide explanation of differences between proposed course and existing system catalog courses below:

CIM 310 is limited to concrete production facilities which tend to be continuous production operations. MNET 367-367L addresses all types of manufacturing facilities with an emphasis on process improvement. OM 425 includes production planning and inventory control but is framed for generic manufacturing and/or service operations.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: R - Lecture

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

**NEW COURSE REQUEST
 Supporting Justification for On-Campus Review**

<u>Teresa Hall</u>	<u>Teresa J.K. Hall</u>	<u>1/8/2021</u>
Request Originator	Signature	Date
<u>Teresa Hall</u>	<u>Teresa J.K. Hall</u>	<u>1/8/2021</u>
Department Chair	Signature	Date
<u>Bruce Berdanier</u>	<u>Bruce Berdanier</u>	<u>1/15/2021</u>
School/College Dean	Signature	Date

1. Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.

This course and accompanying new course requests are to establish the new B.S. in Concrete Industry

Management (CIM) at SDSU. The CIM program requirements ultimately will result in an accredited program under the Association of Technology, Management, and Applied Engineering (ATMAE).

2. Note whether this course is: Required Elective
3. In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?
None.
4. If this will be a dual listed course, indicate how the distinction between the two levels will be made.
N/A
5. Desired section size 35
6. Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).
Search is currently underway for the first CIM faculty member who will teach in the CIM program as well as serve as Program Director. The Department is seeking a person with at least 10 years relevant industry experience, credentials consistent with a Professor of Practice rank.
7. Note whether adequate facilities are available and list any special equipment needed for the course.
The Department of Construction & Operations Management has adequate instructional facilities for this course.
8. Note whether adequate library and media support are available for the course.
There is adequate library and media support available.
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.
N/A



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

New Course Request

<u>SDSU</u>	<u>Jerome J. Lohr College of Engineering / Construction & Operations Management</u>
Institution	Division/Department
<u>Dennis D. Hedge</u>	<u>2/24/2021</u>
Institutional Approval Signature	Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
CIM 350	Concrete Applications and Estimating	3

Course Description
Uses of concrete in construction of buildings, pavement, and other facilities. Site plans, formwork selection and design, material performance, and project requirements are used to develop the cost estimate and delivery schedule.

Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
CIM 216	Concrete Methods and Materials	Pre-requisite

Registration Restrictions

None

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
CM 232	Cost Estimating	3
CM 352	Advanced Cost Estimating with BIM	3

Provide explanation of differences between proposed course and existing system catalog courses below:

CIM 350 is limited to concrete products used in commercial and heavy construction projects. CM 232 develops the pre-construction bid estimate that includes all materials and labor for a commercial build project. CM 352 covers commercial construction project estimates using building systems modeling and analysis.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: R - Lecture

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

**NEW COURSE REQUEST
 Supporting Justification for On-Campus Review**

Teresa Hall	Teresa J.K. Hall	1/8/2021
Request Originator	Signature	Date
Teresa Hall	Teresa J.K. Hall	1/8/2021
Department Chair	Signature	Date
Bruce Berdanier	Bruce Berdanier	1/15/2021
School/College Dean	Signature	Date

1. Provide specific reasons for the proposal of this course and explain how the changes enhance the

curriculum.

This course and accompanying new course requests are to establish the new B.S. in Concrete Industry Management (CIM) at SDSU. The CIM program requirements ultimately will result in an accredited program under the Association of Technology, Management, and Applied Engineering (ATMAE).

2. Note whether this course is: Required Elective
3. In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?
None.
4. If this will be a dual listed course, indicate how the distinction between the two levels will be made.
N/A
5. Desired section size 35
6. Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).
Search is currently underway for the first CIM faculty member who will teach in the CIM program as well as serve as Program Director. The Department is seeking a person with at least 10 years relevant industry experience, credentials consistent with a Professor of Practice rank.
7. Note whether adequate facilities are available and list any special equipment needed for the course.
The Department of Construction & Operations Management has adequate instructional facilities for this course.
8. Note whether adequate library and media support are available for the course.
There is adequate library and media support available.
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.
N/A



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

New Course Request

SDSU	Jerome J. Lohr College of Engineering / Construction & Operations Management
Institution	Division/Department
Dennis D. Hedge	2/24/2021
Institutional Approval Signature	Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
CIM 370	Concrete Production and Strategy	3

Course Description
Managing concrete production systems in the ready mix and precast industry sectors. Concrete manufacturing facility operation, production equipment systems, delivery scheduling, and managing the concrete product supply chain.

Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
CIM 230	Concrete Construction Systems	Pre-requisite

Registration Restrictions

None

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
MNET 367	Production Strategy	3
CM 443	Construction Planning and Scheduling	3

Provide explanation of differences between proposed course and existing system catalog courses below:

CIM 370 is focused on concrete manufacturing facilities, scheduling, delivery of ready mix product, and precast supply chains. MNET 367 seeks to optimize all manufacturing sector processes with an emphasis on lean manufacturing. CM 443 encompasses the entire construction build project from foundation to finish and uses specialized software to track the project.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: R - Lecture

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

**NEW COURSE REQUEST
 Supporting Justification for On-Campus Review**

Teresa Hall	Teresa J.K. Hall	1/8/2021
Request Originator	Signature	Date
Teresa Hall	Teresa J.K. Hall	1/8/2021
Department Chair	Signature	Date

CIM 440 Course Description
Concrete mix designs and procedures using ASTM and ACI standards. Material properties, admixture differences and behaviors, testing and analysis, and quality control of concrete products will be covered.

CIM 440L Course Description
Lab to accompany CIM 440.

Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
CIM 370	Concrete Production and Delivery	Pre-requisite
CIM 440/440L	Advanced Concrete Materials / Lab	Co-requisite

Registration Restrictions

None

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
CEE 216-216L	Civil Engineering Materials & Lab	2, 1
CEE 456	Concrete Theory & Design	3

Provide explanation of differences between proposed course and existing system catalog courses below:

CIM 210-210L are limited to concrete materials and testing in the field as well as in labs. CEE 216-216L covers the gamut of metallic and non-metallic building materials, one module on concrete. CEE 456 is an engineering design course with a focus on structural design and in-lab materials testing.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: CIM 440: R – Lecture; CIM 440L: L - Laboratory

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

NEW COURSE REQUEST Supporting Justification for On-Campus Review

<u>Teresa Hall</u>	<u>Teresa J.K. Hall</u>	<u>1/8/2021</u>
Request Originator	Signature	Date
<u>Teresa Hall</u>	<u>Teresa J.K. Hall</u>	<u>1/8/2021</u>
Department Chair	Signature	Date
<u>Bruce Berdanier</u>	<u>Bruce Berdanier</u>	<u>1/15/2021</u>
School/College Dean	Signature	Date

1. Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.
 This course and accompanying new course requests are to establish the new B.S. in Concrete Industry Management (CIM) at SDSU. The CIM program requirements ultimately will result in an accredited program under the Association of Technology, Management, and Applied Engineering (ATMAE).
2. Note whether this course is: Required Elective
3. In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?
 None.
4. If this will be a dual listed course, indicate how the distinction between the two levels will be made.
 N/A
5. Desired section size 35
6. Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).
 Search is currently underway for the first CIM faculty member who will teach in the CIM program as well as serve as Program Director. The Department is seeking a person with at least 10 years relevant industry experience, credentials consistent with a Professor of Practice rank.
7. Note whether adequate facilities are available and list any special equipment needed for the course.
 The Department of Construction & Operations Management has adequate instructional facilities for this course. Test equipment in the Crothers Concrete Lab will be used for some lab exercises. Funding to purchase flatwork and forms, etc., will be provided by the external industry group.
8. Note whether adequate library and media support are available for the course.
 There is adequate library and media support available.
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.
 N/A



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

New Course Request

SDSU	Jerome J. Lohr College of Engineering / Construction & Operations Management
Institution	Division/Department
Dennis D. Hedge	2/24/2021
Institutional Approval Signature	Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
CIM 450	Concrete Restoration and Repair	3

Course Description
Overview of the causes of deterioration and failure in fresh and hardened concrete. Identification of damage patterns and methods to control problems in concrete. Repair materials and methods to strengthen and restore concrete structures.

Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
None		

Registration Restrictions

Senior standing or instructor approval.

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
MNET 243-243L	Introduction to Materials Science & Lab	3, 0
MET 450	Forensic Engineering	3

Provide explanation of differences between proposed course and existing system catalog courses below:

CIM 450 prepares students to identify and remediate damage and failures in concrete (composite) materials. MNET 243-243L is a survey course on various engineering materials and how they are produced. MET 450 covers failure analysis in metallic, non-metallic, and composite materials using specialized lab equipment including scanning electron microscopy.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: R - Lecture

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

**NEW COURSE REQUEST
 Supporting Justification for On-Campus Review**

Teresa Hall Request Originator	Teresa J.K. Hall Signature	1/8/2021 Date
Teresa Hall Department Chair	Teresa J.K. Hall Signature	1/8/2021 Date
Bruce Berdanier School/College Dean	Bruce Berdanier Signature	1/15/2021 Date

- Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.
 This course and accompanying new course requests are to establish the new B.S. in Concrete Industry Management (CIM) at SDSU. The CIM program requirements ultimately will result in an accredited program under the Association of Technology, Management, and Applied Engineering (ATMAE).
- Note whether this course is: Required Elective
- In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?
 None.
- If this will be a dual listed course, indicate how the distinction between the two levels will be made.
 N/A
- Desired section size 35
- Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).
 Search is currently underway for the first CIM faculty member who will teach in the CIM program as well as serve as Program Director. The Department is seeking a person with at least 10 years relevant industry experience, credentials consistent with a Professor of Practice rank.
- Note whether adequate facilities are available and list any special equipment needed for the course.
 The Department of Construction & Operations Management has adequate instructional facilities for this course.
- Note whether adequate library and media support are available for the course.
 There is adequate library and media support available.

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.
 N/A



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

New Course Request

SDSU	Jerome J. Lohr College of Engineering / Construction & Operations Management
Institution	Division/Department
Dennis D. Hedge	2/24/2021
Institutional Approval Signature	Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
CIM 471	Capstone Experience	3

Course Description	This course is an in-depth study of an industry-based problem to demonstrate technical and professional competence. Results are presented in a seminar-style formal review in collaboration with industry stakeholders.
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Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre-Req/Co-Req?
None		

Registration Restrictions

Senior standing or instructor approval.

Section 2. Review of Course

2.1. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
CM 471	Capstone Experience	2
OM 471	Capstone Experience	2

Provide explanation of differences between proposed course and existing system catalog courses below:

CIM 471 is a demonstration of competence prior to graduation with the CIM degree. The problem or project may be individual or a team assignment and is limited to the concrete industry applications. CM 471 is a team-based project within the commercial construction industry sector. OM 471 is a team-based project conceptualized in the fall semester in OM 470 Project Management and implemented in spring semester. Projects tend to come from the manufacturing or services sector.

Section 3. Other Course Information

3.1. Are there instructional staffing impacts?

Yes. Specify below: Concrete industry patrons will cover salary and benefits to hire new faculty for the CIM program.

3.2. Existing program(s) in which course will be offered: Concrete Industry Management (B.S.)

3.3. Proposed instructional method by university: R - Lecture

3.4. Proposed delivery method by university: 001 – Face to Face Term Based Instruction

3.5. Term change will be effective: Fall 2021

3.6. Can students repeat the course for additional credit? Yes 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: 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 - Request for new CIM prefix included in this curriculum proposal.

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

4.1. University Department Code: SCOM

4.2. Proposed CIP Code: 15.1501

Is this a new CIP code for the university? Yes No

**NEW COURSE REQUEST
 Supporting Justification for On-Campus Review**

Teresa Hall	Teresa J.K. Hall	1/8/2021
Request Originator	Signature	Date
Teresa Hall	Teresa J.K. Hall	1/8/2021
Department Chair	Signature	Date
Bruce Berdanier	Bruce Berdanier	1/15/2021
School/College Dean	Signature	Date

- Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.
 This course and accompanying new course requests are to establish the new B.S. in Concrete Industry Management (CIM) at SDSU. The CIM program requirements ultimately will result in an accredited program under the Association of Technology, Management, and Applied Engineering (ATMAE).
- Note whether this course is: Required Elective
- In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?
 None.
- If this will be a dual listed course, indicate how the distinction between the two levels will be made.
 N/A
- Desired section size 35
- Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).
 Search is currently underway for the first CIM faculty member who will teach in the CIM program as well as serve as Program Director. The Department is seeking a person with at least 10 years relevant industry experience, credentials consistent with a Professor of Practice rank.
- Note whether adequate facilities are available and list any special equipment needed for the course.

The Department of Construction & Operations Management has adequate instructional facilities for this course.

8. Note whether adequate library and media support are available for the course.
There is adequate library and media support available.
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.
N/A