CIM 1360. Introduction to the Concrete Industry.
This course provides students with an overview of the concrete industry, exploring its history, diverse applications, and vast array of career opportunities. Students will gain insights into the various sectors within the industry, from construction to manufacturing, and familiarize themselves with key industry players and organizations. By examining the past, present, and future of the industry, students will be well-prepared to navigate and contribute to this essential industry.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

CIM 2090. Concrete Industry Internship.
This course is a supervised experiential learning course in various technical disciplines as appropriate to a student's degree program. It helps the student link theory with practice. This course will be a concrete industry internship consisting of a minimum of 10 weeks/400 hours of work experience in the concrete/construction industry. Prerequisite: CIM 3420 with a grade of "C" or better.
0 Credit Hours. 0 Lecture Contact Hours. 40 Lab Contact Hours.
Grade Mode: Credit/No Credit

CIM 3330. Fundamentals of Concrete Construction.
This course introduces the principles, practices, and applications of concrete in construction projects. Students will be introduced to the fundamental uses of concrete in construction including foundations, pavements, structures, precast, and concrete masonry products. Through theoretical study and practical exercises, students will explore topics such as reinforcement methods, formwork, curing techniques, transporting, placing, consolidating, finishing, and waterproofing concrete. Prerequisite: CIM 3420 with a grade of "C" or better.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering
Grade Mode: Standard Letter

CIM 3340. Project Management for Concrete Contractors.
This course offers a comprehensive exploration of the essential principles and practices necessary for effective project management within the concrete construction industry. Students will study topics including building codes, regulations, and compliance standards, understanding the roles of building officials and regulatory bodies. They will also interpret concrete industry codes and standards, understanding the nuances of material specification and best practices for quality assurance. Fundamentals of project and plant scheduling, contract document interpretation, and material pricing strategies specific to concrete construction will be emphasized. Prerequisite: CIM 3420 with a grade of "C" or better.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering
Grade Mode: Standard Letter

CIM 3350. Precast and Prestressed Management.
This course provides students with an opportunity to further develop their technical and laboratory knowledge in precast/prestressed concrete topics to include common shapes and uses, materials and methods, mix designs and batching in precast/prestressed, reinforcing and formwork in precast/prestressed, plant management, layout and processes, logistics and supply chain, quality control, technical sales, and cost estimating. Prerequisite: CIM 3420 with a grade of "C" or better.
3 Credit Hours. 1 Lecture Contact Hour. 3 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering
Grade Mode: Standard Letter

CIM 3366. Applications of Concrete in Construction.
This course provides an in-depth examination of the diverse uses of concrete in the building, pavement, and infrastructure sectors. Students will gain a detailed knowledge of the analysis of concrete's application, considering its advantages and disadvantages in various contexts, while also exploring unique challenges faced by material suppliers, concrete contractors, and design professionals. Topics include detailing the various types of concrete construction projects, preparing and safeguarding excavations, understanding groundwater and moisture control techniques, addressing concrete pumpability and workability issues and implementing solutions for optimal performance, analyzing anchorages and embedments in concrete, and understanding the array of concrete tools and equipment. Prerequisite: CIM 3330 with a grade of "C" or better.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering
Grade Mode: Standard Letter

CIM 3420. Fundamentals of Concrete Materials: Properties and Testing.
This course offers an introduction to the key components and characteristics of concrete materials. Through an in-depth study of aggregates, cements, and admixtures, students will gain insight into the factors influencing the properties of fresh and hardened concrete. The course covers essential topics such as mix proportioning techniques and statistical analysis of strength tests, providing students with the analytical tools to assess concrete performance effectively. Emphasis is placed on understanding the relationship between materials properties and testing methodologies to ensure the production of durable and high-quality concrete. Prerequisite: MATH 2328 with a grade of "C" or better.
4 Credit Hours. 3 Lecture Contact Hours. 2 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering|Lab Required
Grade Mode: Standard Letter

CIM 4290. Capstone.
This course serves as the pinnacle of the student's undergraduate academic journey, consolidating their comprehensive understanding of the concrete industry. Through the lens of developing a business plan, students will integrate and apply knowledge acquired throughout their undergraduate coursework, spanning concrete materials, construction techniques, project management, and business fundamentals. This capstone experience empowers students to synthesize theoretical concepts into actionable strategies, preparing them for leadership roles in the concrete industry. Prerequisite: CIM 4330 and CSM 3368 both with a grade of "C" or better.
2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering
Grade Mode: Standard Letter

CIM 4310. Concrete Research.
This course offers students the opportunity to deepen their technical expertise and laboratory skills while pursuing individual research projects of interest within the concrete industry. Through hands-on experimentation and analysis, students will explore advanced topics such as concrete materials testing, quality control measures, and innovative construction technologies. Under the guidance of faculty mentors, students will design and execute their own research project, exploring emerging trends or addressing challenges in the concrete industry. Prerequisites: CIM 4350 with a grade of "C" or better.
3 Credit Hours. 1 Lecture Contact Hour. 4 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering
Grade Mode: Standard Letter

CIM 4330. Management of Concrete Industry Operations.
This course teaches students the operational principles and strategic considerations essential for effective management within the concrete industry. Students will learn industry best practices for optimizing production processes through in-depth examinations of aggregate plant, cement plant, and ready-mix plant production and management. The course covers crucial aspects such as production cost control, operating budgets, and capital expenditures, equipping students with the financial acumen necessary for efficient resource allocation. Strategic planning, legislative issues, environmental sustainability, and compliance are also explored, emphasizing the importance of responsible and ethical practices in the modern concrete industry. Prerequisite: CIM 3340 with grade of "C" or better.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering
Grade Mode: Standard Letter

CIM 4340. Concrete Problems: Diagnosis, Prevention and Dispute Resolution.
This course provides real-world investigation of problems in concrete construction projects, with a focus on identifying, diagnosing, and preventing common issues such as fast and slow setting, air content variations, low strength, cracking, and scaling. Students will learn to recognize the factors contributing to these problems and explore preventative measures and mitigation strategies. Emphasis is placed on diagnostic techniques such as non-destructive testing and analysis of material properties to identify the root causes of issues. Additionally, students will examine the impact of environmental conditions, construction practices, and material properties on concrete performance. Prerequisite: CIM 4350 with a grade of "C" or better.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering
Grade Mode: Standard Letter

CIM 4350. Advanced Concrete Technology.
This course provides students with an opportunity to further develop their technical and laboratory knowledge in advanced concrete properties, test methods and mix designs. Topics include high-performance concrete (HPC), self-consolidating concrete (SCC), roller compacted concrete (RCC), mass concrete, concrete repair, advanced fiber reinforcing, and chemical admixtures. Emphasis is placed on sustainable practices, safety considerations, and the integration of innovative technologies in concrete construction. Prerequisite: CIM 3420 with a grade of a "C" or better.
3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering
Grade Mode: Standard Letter

CIM 4360. Sustainability Management for the Concrete Industry.
This course explores the principles and practices of sustainability management tailored specifically for the concrete industry. With the growing emphasis on environmental responsibility and resource efficiency, this course equips students with the knowledge and skills necessary to navigate the complex landscape of sustainability within the concrete sector. Prerequisite: CIM 3366 with grade of "C" or better.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

CIM 4398. Capstone.
This course covers the business aspects of the concrete industry with appropriate application to the student's career interests and builds upon the technical and practical industry components learned in previous courses. The final project will be presented to an industry committee. (WI) Prerequisites: ACC 2362 with a grade of "D" or better and CIM 4330 with a grade of "C" or better.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Dif Tui- Science & Engineering|Writing Intensive
Grade Mode: Standard Letter