

Proposed CM Master Program

1.0 Prerequisites

The following courses are prerequisites designed to prepare students who have not earned their undergraduate degree from an ACCE-accredited construction management program for their CM graduate study.

- MBA212. Financial Management
- CM127. Construction Soils and Foundation
- CM170. Construction Project Control

Please note that the following courses are also required in the current Fresno State CM BS curriculum: ACCT4A, BA18, Econ 40/50, DS73, BA104 (or MKTG100S), MGT104, and two upper division business electives.

2.0 Proposed New Construction Management Courses at the Graduate Level

1. **CM210 Data Science (Optional)**

This course introduces the fundamental topics in data science such as data acquisition, cleaning, and aggregation, exploratory data analysis and visualization. Students will learn how to apply these concepts to construction project management.

2. **CM220 Advanced Planning and Preconstruction**

Advanced study of preconstruction planning and organizing methods and procedures for defining a project, identifying potential issues, preventing project delays, avoiding cost overruns, and achieving successful project outcomes. This course covers concept, scope, team assembly, budget and schedule development, constructability, and construction documentation review.

3. **CM230 Advanced Construction Operations Management**

This course provides students with concepts, techniques and tools to design, analyze, and improve core construction operational capabilities. Topics covered include project control, risk pooling, quality management, and revenue management.

4. **CM277 Advanced Business Strategy**

This course describes a variety of activities that affect profitability on construction projects and within a construction company. Students learn in an interactive setting about issues that directly contribute to business strategy and company profits. The construction business includes many inherent risks, which are discussed in detail. Case studies are used to identify potential risks and to apply methods to mitigate those risks.

5. **CM290 Independent Study**

Prerequisite: graduate status in construction management and permission of the graduate program director. Creative projects that fall outside the scope of formal courses, once approved, will be supervised on individual basis. Only one independent study may count toward the graduation requirements.

6. **CM293 Internship**

Prerequisite: permission of the internship coordinator and the graduate program director. Requires at least 150 hours of work at a prequalified, academically related work site. Final report and presentation of findings also required. Only one internship may count toward the graduation requirements.

7. **CM 298 Project**

Prerequisite: graduate status in construction management. Independent investigation of advanced character such as analysis and/or design of special engineering systems or projects; critical review of state of the art of special topics, as the culminating requirement for the master's degree. Abstract required.

3.0 Proposed Construction Management Master Program

The CM Master Program would consist of 30 units of coursework and a culminating experience as indicated below. **The curriculum represents our current thinking and is subject to modification following receipt and evaluation of stakeholder input.**

Proposed Curriculum for the CM Master Program

General Core Course (required for all students): (15 units)

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|---|---|
| CE 210 Research Methods (or <i>CM210 Data Science*</i>) | 3 |
| MBA210 Leadership and Organizational Behavior | 3 |
| <i>CM220 Advanced Planning and Preconstruction*</i> | 3 |
| <i>CM230 Advanced Construction Operations Management*</i> | 3 |
| <i>CM240 Advanced Business Strategy*</i> | 3 |

Electives: (9 units)

Outside of CM: 3

Select one from the following courses offered by the Craig School of Business:

- FIN123 Business Forecasting
- FIN131 Entrepreneurial Finance
- FIN186 Business and Real Estate Economics
- MBA232 Seminar in Investments and Portfolio Management

Within CM: 6

Select 2 courses from the following CM courses:

- CM144 Construction Site Planning and Development
- CM150 Building Construction
- CM151 Heavy Civil Construction
- CM177 Sustainable Construction
- CM191T BIM for CM

Culminating Experience (6 unit)

| | |
|---|---|
| <i>CM 290 Independent Study (Optional)*</i> | 3 |
| <i>CM 293 Internship (Optional)*</i> | 3 |
| <i>CM 298 Project*</i> | 3 |

Total: 30 units

* Proposed new construction management courses at the graduate level (see 2.0 above)

Advising Notes: For electives, a minimum grade of B is required. Similar courses previously taken and counted towards another degree are excluded.