


Master of Science - Construction Management

2 Graduate Program Change 2021-22

I. General Information

The faculty member originating this proposal is to complete sections I and II.

TURN ON help text before starting this proposal by clicking  in the top right corner of the heading. You will need to turn on help text again after any actions that refresh the page including after saving proposals, importing information, or running impact reports.

IMPORT curriculum data from the Catalog by clicking  in the top left corner.

Do not make any changes to any information until the proposal has been launched in Step 4.

Department (s) (if Dual or Interdisciplinary please add all departments)*

Civil and Environmental Engineering and Construction

Degree/ Certificate Name*

Master of Science - Construction Management

Plan Code

Degree Type*

Master of Science

Program Type*

Master's

II. Program Changes

FILL IN ONLY fields required marked with an * after importing data. You will not be able to launch the proposal without completing required fields. Do not make proposed changes to the information that was imported until after the proposal has been launched in Step 4. Changes will only be tracked after the proposal is launched

Are you changing admission

Yes No

requirements?*

Are you changing course requirements? Yes No

Are you changing degree completion requirements? Yes No

Are you changing the primary instructional mode? Yes No

Are you changing program learning objectives? Yes No

Are you changing the culminating experience? Yes No

If not a Dual itself, is this program also available as part of a Dual-Degree offering? Yes No

Other (e.g. subplan titles,...) Yes No

If yes, describe changes to learning objectives:

Graduates will meet the expectations of employers seeking management professionals with expertise in construction and infrastructure management with advanced expertise in the planning, management, and operations of construction and infrastructure projects. Our graduates should have abilities to:

- Demonstrate advanced analytical and integrative skills in analysis and operation of construction and infrastructure projects,
- Acquire and apply advanced knowledge and technical skills to the planning and execution of complex construction and infrastructure projects,
- Lead or coordinate the efforts of professionals in construction and infrastructure project planning, analysis, and operations,
- Demonstrate advanced knowledge and technical skills in the management of construction and infrastructure planning, analysis and operations,
- Apply advanced knowledge and skills to planning and solving construction and infrastructure problems.

Provide a Brief Summary of Proposed Changes

1. Learning Outcomes
2. Plan Descriptions
3. Admission Requirements
4. Creating two concentrations
5. Plan Requirements
6. Degree Requirements
7. Graduation Requirements




Provide a rationale for each proposed change

As the name of the degree is changed and we added infrastructure management part in this degree, so the learning outcomes need to be fixed to reflect the change in the degree name.

We also added two concentration under this degree, so the plan description, admission, plan, degree, and graduation requirements should be adjusted to reflect these changes.

Do not make any changes to any information until the proposal has been launched in Step 4.

Follow these steps to change the program curriculum:

1. Click on  "View Curriculum Schema." Edit existing cores or click 'Add Core' and name your core (please use a comparable degree program in the current graduate catalog as a template). Edit or add any descriptive text (do not add courses until Step 2). Descriptive text is generally used in the following cores: Plan Description, Plan Admission Requirements, Plan Requirements, Plan Graduation Requirements.
2. There are two options for adding courses (see Step 3 to remove courses): "Add Course" and "Import Course." For courses already in the catalog, click on "Import Course" and find the courses needed. For new classes going through a Curriculog Approval Process click on "Add Course"-- a box will open asking you for the Prefix, Course Number and Course Title.
3. Click on  "View Curriculum Schema." Click on the area/header of the program where you would like to add courses. When you click on "Add Courses" it will bring up the list of courses available from Step 2. Select the courses you wish to add. For removing courses click on the  and proceed.

After you have launched proposal, update prospective curriculum here*

Plan Description

The Master of Science in Construction and Infrastructure Management (MSCIM) degree is for individuals interested in the management of construction and transportation infrastructure. It is intended for applicants with all backgrounds, especially those in areas other than engineering, and who either presently work for or aspire to work for construction companies, transportation agencies, public agencies, or private companies who provide professional services in the transportation and construction management fields. The degree provides graduate-level study for those seeking mid- and upper-level management positions in the construction and transportation industries. Students with degrees in construction management, engineering, science, architecture, business, economics, public administration, quantitative geography, computer science, mathematics, operations research, statistics, political science, physical science, psychology, health sciences, urban or regional planning, as well as related disciplines are invited to apply. Applications for admission to the program are evaluated on an individual basis by the Civil and Environmental Engineering and Construction (CEEC) faculty. Two concentrations: Construction Management (CM) and Transportation Infrastructure Management (TIM), are available in MSCIM degree program. For more information about your program, including your graduate program handbook and learning outcomes please visit the Degree Directory.

Plan Admission Requirements

Application deadlines Applications available on the UNLV Graduate College website. Admission to the program leading to the MS CIM degree in thesis and project subplans is open to those students completing the following requirements: 1. Applications must be submitted in the Grad Rebel Gateway system. Applicants must have an earned baccalaureate degree from a regionally accredited four-year college or university. The CEEC Graduate Program Committee (GPC) and Graduate Coordinator make all the final decisions after review of each applicant's records and admissions information. 2. Overall undergraduate GPA should be at least 2.75 (4.00=A) for the bachelor's degree or at least 3.00 (4.00=A) for the last 60 credits of undergraduate work. 3. Students interested in the Construction Management concentration must have earned credits in the following subjects or their equivalents with a C (2.00 out of 4) or better grade: MATH 181 - Calculus I PHYS 151/151 L - General Physics I CEM 250/250L - Construction Materials & Methods CEM 270 - Construction Engineering Mechanics A course in construction or engineering graphics. 4. Students interested in Transportation Infrastructure Management concentration must have earned credits in the following subjects or their equivalents with a C (2.00 out of 4) or better grade: MATH 181 - Calculus I PHYS 151/151L or 152/152L - General Physics I or II STA 152 - Statistics. The above-mentioned deficiency courses required of a student before entering the MSCIM program will be determined on an individual basis.

The student will be notified in writing of any deficiencies prior to admission to the program. Students with deficiencies exceeding two courses may need to

satisfactorily complete them before admission to the graduate program. A minimum grade of C is required in the deficiency courses. The CEEC Graduate Program Committee (GPC) and Graduate Coordinator make all the final decisions after review of each applicant's records and admissions information. 5. The applicant must submit a Statement of Intent (SOI) with no more than two pages describing the reasons why they wish to earn a MSCIM degree. Furthermore, the applicant must submit a recent resume (no more than 2 pages). In addition, two letters of recommendation (LOR) must be submitted by individuals familiar with applicant's knowledge, skills and abilities. It is highly recommended that LOR documents are created using official letterheads (e.g. academic advisor, academic faculty, professional supervisor). Also, applicants must enter official email addresses of those sending an LOR. 6. All applicants are required to take GRE General Test and submit the scores to the University of Las Vegas, Nevada (code 4861). 7. International applicants must meet English proficiency requirements established in the UNLV Graduate English proficiency page (add link). All domestic and international applicants must review and follow the Graduate College Admission and Registration Requirements. Students are accepted into a degree program as described in the Graduate Catalog. The faculty and corresponding sub-disciplines and sub-plans within the described programs are subject to change at any time.

Plan Requirements

See Subplan Requirements below. Subplan 1: Construction Management - Thesis Track Subplan 2: Construction Management - Project Track Subplan 3: Transportation Infrastructure Management - Thesis Track Subplan 4: Transportation Infrastructure Management - Project Track

Subplan 1 Requirements: Construction Management - Thesis Track

Total Credits Required: 30

Course Requirements

Required Courses – Credits: 16

Complete 16 credits by completing all of the following courses.

CEM 651 Construction Estimating	4
CEM 653 Construction Scheduling and Resource Optimization	3
CEE 700 Research Methods in Civil and Environmental Engineering	3
CEM 730 Foundations of Big Data Analytics for Construction Management	3
CEE 609 Engineering Project Management	3

Elective Courses – Credits: 5

Complete at least two of the following courses:

CEM 680 Sustainable Construction	3
CEM 685 Construction Law and Contracts	3
CEM 705 Construction Engineering Management	3
CEM 710 Modular Construction	3
CEM 720 Information and Sensing Technology in Construction	3
CEE 667 Computer Applications in Transportation Engineering	3
CEE 668 GIS Applications in Civil Engineering	3

(Optional) Graduate Internship Course-Credit: Maximum up to 1

Students engaged in Curricular Practical Training (CPT) must take CEM 792. The course can be taken maximum one time during their study. However, the credit will not be counted towards the degree.

CEM 792 Graduate Internship for Master in Construction Management	1
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Thesis – Credits: 9

CEM 797 Research Thesis in Construction Engineering and Management	1 - 9
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Degree Requirements

1. A Thesis Advisory Committee composed of at least four members of the UNLV graduate faculty is to be formed for the student. At least two of the committee members must be from tenured or tenure-track Construction

Engineering Management (CEM) faculty and the third member from CEEC Department. The fourth faculty member, the Graduate College Representative, is recommended by advisor/advisee and appointed by the Graduate College. It is recommended that the Thesis Advisory Committee collective expertise reflects the thesis topic. The committee chair must be a CEM faculty from the area of expertise chosen for thesis topic. 2. Students who have credit in CEM 651 and CEM 653 or equivalent courses will select two other courses from the elective courses list. 3. In addition to the coursework requirements, 9 credits of research work associated with the master's level thesis (CEM 797) with the outcome being a manuscript written for a specific indexed conference or journal. 4. At least 50% of the courses (600 and 700 level) within the total coursework must be from the College of Engineering. 5. At least 50% of the courses within the total coursework must be 700 level. 6. Students must maintain a minimum grade point average of 3.00. A course in which a grade of less than C was earned will not be considered for use toward the degree. 7. All requirements for the degree are met upon the satisfactory completion of the proposed research, the submission of a satisfactory thesis, and the successful oral defense of the thesis before the Thesis Advisory Committee.

Graduation Requirements

1. The student must submit all required forms to the Graduate College as well as apply for graduation up to two semesters prior to completing their degree requirements. 2. The student must submit and successfully defend their thesis by the posted deadline. The defense must be advertised and is open to the public. 3. After the thesis defense, the student must electronically submit a properly formatted pdf copy of their thesis to the Graduate College for format check. Once the thesis format has been approved by the Graduate College, the student will submit the approved electronic version to ProQuest. Deadlines for thesis defenses, format check submissions, and the final ProQuest submission can be found here.

Subplan 2 Requirements: Construction Management - Project Track

Total Credits Required: 30

Course Requirements

Required Courses – Credits: 13

Complete 13 credits by completing all of the following courses.

CEM 651 Construction Estimating	4
CEM 653 Construction Scheduling and Resource Optimization	3
CEE 609 Engineering Project Management	3
CEM 730 Foundations of Big Data Analytics for Construction Management	3

Elective Courses – Credits: 14

Complete five of the following courses:

CEM 680 Sustainable Construction	3
CEM 685 Construction Law and Contracts	3
CEM 705 Construction Engineering Management	3
CEM 710 Modular Construction	3
CEM 720 Information and Sensing Technology in Construction	3
CEE 667 Computer Applications in Transportation Engineering	3
CEE 668 GIS Applications in Civil Engineering	3

(Optional) Graduate Internship Course - Credit: Maximum up to 1

Students engaged in Curricular Practical Training (CPT) must take CEM 792. The course can be taken maximum one time during their study. However, the credit will not be counted towards the degree.

CEM 792 Graduate Internship for Master in Construction Management	1
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Special Project – Credits: 3

CEM 796 Special Project in Construction Engineering and Management	1 – 3
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Degree Requirements

1. The student's Advisor should be tenured or a tenure track Construction Engineering Management faculty member of the CEEC Department. An advisory committee is not required. 2. In addition to the coursework requirement 3 credits of master's level project (CEM 796) with the outcome

requirement, 6 credits of master's level project (CEM 700) with the outcome being a paper written for a specific indexed conference or journal. 3. Students who have credit in CEM 651 and CEM 653 or equivalent courses will select two other courses from the elective courses list. 4. At least 50% of the courses (600 and 700 level) within the total coursework must be from the College of Engineering. 5. At least 50% of the courses within the total coursework must be 700 level. 6. Students must maintain a minimum grade point average of 3.00. A course in which a grade of less than C was earned will not be considered for use toward the degree.

Graduation Requirements

1. The student must submit all required forms to the Graduate College as well as apply for graduation up to two semesters prior to completing their degree requirements. 2. The student must successfully complete a project and submit a project report.

Subplan 3 Requirements: Transportation Infrastructure Management - Thesis Track

Total Credits Required: 30

Course Requirements

Required Courses – Credits: 9

Complete 9 credits by completing all of the following courses.

CEE 609 Engineering Project Management	3
CEE 700 Research Methods in Civil and Environmental Engineering	3
CEE 730 Foundations of Big Data Analytics for Infrastructure Applications	3

Elective Courses – Credits: 12

Complete 12 credits of advisor-approved elective coursework including a minimum of 3 courses from the following list (with at least two 700 level course).

CEE 661 Introduction to Railroad

3

CEE 601 Introduction to Railroad Transportation	3
CEE 662 Railroad Engineering	3
CEE 663 Traffic Engineering	3
CEE 664 Airport Design	3
CEE 666 Geometric Design of Highways	3
CEE 667 Computer Applications in Transportation Engineering	3
CEE 668 GIS Applications in Civil Engineering	3
CEE 671 Public Transportation Systems	3
CEE 725 Freight Transportation	3
CEE 726 Railroad Operations	3
CEE 727 Transportation Safety	3
CEE 760 Transportation Planning	3
CEE 761 Transportation Demand Analysis	3
CEE 762 Operations Research Applications in Civil Engineering	3
CEE 763 Advanced Traffic Engineering	3
CEE 764 Air Transportation	3

(Optional) Graduate Internship Course-Credit: Maximum up to 1

Students engaged in Curricular Practical Training (CPT) must take CEE 792. The course can be taken maximum one time during their study. However, the credit will not be counted towards the degree.

CEE 792 Graduate Internship for Master in Civil Engineering and Transportation	1
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Thesis – Credits: 9

CEM 797 Research Thesis in Construction Engineering and Management	1 - 9
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Degree Requirements

1. A Thesis Advisory Committee composed of at least four members of the UNLV graduate faculty is to be formed for the student. At least two of the committee members must be from tenured or tenure-track faculty of the CEEC Department and the third member can be from a related field. The fourth faculty member, the Graduate College Representative, is recommended by advisor/advisee and appointed by the Graduate College. It is recommended that the Thesis Advisory Committee collective expertise reflects the thesis topic. The committee chair must be a tenured or tenure-track faculty from the area of expertise chosen for thesis topic. 2. In addition to CEE 700, CEE 609, and CEE 730, all students must successfully complete a minimum of 12 credit

hours of approved graduate courses. 3. In addition to the coursework requirements, 9 credits of research work associated with the master's level thesis (CEE 797) with the outcome being a manuscript written for a specific indexed conference or journal. 4. At least 50% of the courses (600 and 700 level) within the total coursework must be from the College of Engineering. 5. At least 50% of the courses within the total coursework must be 700 level. 6. Students must maintain a minimum grade point average of 3.00. A course in which a grade of less than C was earned will not be considered for use toward the degree.

Graduation Requirements

1. The student must submit all required forms to the Graduate College as well as apply for graduation up to two semesters prior to completing their degree requirements. 2. The student must submit and successfully defend their thesis by the posted deadline. The defense must be advertised and is open to the public. 3. After the thesis defense, the student must electronically submit a properly formatted pdf copy of their thesis to the Graduate College for format check. Once the thesis format has been approved by the Graduate College, the student will submit the approved electronic version to ProQuest. Deadlines for thesis defenses, format check submissions, and the final ProQuest submission can be found here.

Subplan 4 Requirements: Transportation Infrastructure Management - Project Track

Total Credits Required: 30

Course Requirements

Required Courses - Credits: 6

Complete 6 credits by completing all of the following courses.

CEE 609 Engineering Project Management	3
CEE 730 Foundations of Big Data Analytics for Infrastructure Applications	3

Elective Courses - Credits: 21

Complete 21 credits of advisor-approved elective coursework including a minimum of 3 courses from the following list (with at least two 700 level course).

CEE 661 Introduction to Railroad Transportation	3
CEE 662 Railroad Engineering	3
CEE 663 Traffic Engineering	3
CEE 664 Airport Design	3
CEE 666 Geometric Design of Highways	3
CEE 667 Computer Applications in Transportation Engineering	3
CEE 668 GIS Applications in Civil Engineering	3
CEE 671 Public Transportation Systems	3
CEE 725 Freight Transportation	3
CEE 726 Railroad Operations	3
CEE 727 Transportation Safety	3
CEE 760 Transportation Planning	3
CEE 761 Transportation Demand Analysis	3
CEE 762 Operations Research Applications in Civil Engineering	3
CEE 763 Advanced Traffic Engineering	3
CEE 764 Air Transportation	3

(Optional) Graduate Internship Course-Credit: Maximum up to 1

Students engaged in Curricular Practical Training (CPT) must take CEE 792. The course can be taken maximum one time during their study. However, the credit will not be counted towards the degree.

CEM 792 Graduate Internship for Master in Construction Management	1
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Special Project - Credits: 3

CEE 796 Design Project in Civil Engineering	1 – 3
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Degree Requirements

1.The student's Advisor should be tenured or a tenure-track -faculty member of the CEEC Department. An advisory committee is not required. 2. In addition to CEE 609 and CEE 730, students must complete a minimum of 21 credit hours

of approved graduate courses, and 3 credits of project work associated with the master's level project (CEE 796) with the outcome being a paper written for a specific indexed conference or journal. 3. At least 50% of the courses (600 and 700 level) within the total coursework must be from the College of Engineering. 5. At least 50% of the courses within the total coursework must be 700 level. 5. Students must maintain a minimum grade point average of 3.00. A course in which a grade of less than C was received will not be considered for use toward the degree.

Graduation Requirements

1. The student must submit all required forms to the Graduate College as well as apply for graduation up to two semesters prior to completing their degree requirements. 2. The student must successfully complete a project and submit a project report.

Plan Graduation Requirements

Refer to your subplan for Graduation Requirements Subplan 1: Construction Management - Thesis Track Subplan 2: Construction Management - Project Track Subplan 3: Transportation Infrastructure Management - Thesis Track Subplan 4: Transportation Infrastructure Management - Project Track

The [Degrees Directory](#) provides current and consistent degree information. Submission of this form indicates acknowledgment and understanding that every department is responsible creating and maintaining accurate and updated program information on the UNLV Degrees Directory.

If the changes included on this form impact the program handbook attach the updated handbook before submitting this form. If you need a Word version of the most recent handbook please email GradCurriculum@unlv.edu.

If new courses are added as placeholders within this proposal, new courses must be created using a Course Create form simultaneously to the process of this proposal.

Degrees Directory Program Entry*

Check this box to acknowledge the above statement.

Changes will be applicable to*

- Current Students
 New Students
 Both Current and New Students

If applicable to current students, changes are


Mandatory Optional

Effective Date*

Fall 2021

4. LAUNCH proposal by clicking  in the top left corner.

5. After launching the proposal, make all changes and fill in all additional fields.

6. Finish the launch of your proposal by clicking the icon  located in the Proposal Toolbox on left side at top. Make your decision, comment is optional, and click on "Make decision".

You can check the status of the proposal by clicking  in Proposal Toolbox to verify that the proposal has gone to the next step.


III. Department Vote Information

Note: This section is to be filled out by the Department Chair on behalf of the committee.

(The role has been assigned to the corresponding person on this step. If incorrect, please notify GradCurriculum@unlv.edu)

1. Review the proposal. Discuss and make appropriate revisions.

2. Fill in vote information.

3. Then go to the proposal toolbox at the top right side. Click on  and select the corresponding decision for the committee. This will enable the proposal to go to the next person on the workflow.

You can check the status of the proposal by clicking  in Proposal Toolbox to verify that the proposal has gone to the next step.

If Dual or Interdisciplinary: add votes from all departments/colleges involved

(e.g. "Dpt A: / Dpt. B")

Date faculty voted on proposal 3/23/2021


Result of vote 16-0-0

Manner of vote Online meeting

IV. Unit Vote Information

Note: This section is to be filled out by the College Committee Chair on behalf of the committee.

(The role has been assigned to the corresponding person on this step. If incorrect, please notify GradCurriculum@unlv.edu)

1. Review the proposal. Discuss and make appropriate revisions.
2. Fill in vote information.
3. Then go to the proposal toolbox at the top right side. Click on  and select the corresponding decision for the committee. This will enable the proposal to go to the next person on the workflow.

You can check the status of the proposal by clicking  in Proposal Toolbox to verify that the proposal has gone to the next step.

If Dual or Interdisciplinary: add votes from all departments/colleges involved

(e.g. "College A: / College B")

Date faculty voted on proposal 4/13/2021

Result of vote 4-0-0

Manner of vote online

V. Processing Notes (Graduate College/Registrar Use Only)

Program Alerts (E.g. This program is no longer accepting applications)

PS Processing Notes

PS Processing Date

Initials

Aalog Processing Notes

Aalog Processing Date

Initials

Comments for Master of Science - Construction Management

Curriculog	5/7/2021 3:32 pm Reply
Emily Lin has approved this proposal on Graduate College Dean.	
Curriculog	5/7/2021 8:30 am Reply
Gregory Moody has approved this proposal on behalf of Graduate Programs Committee. See Graduate Programs Committee Agenda - May 4, 2021 for more information.	
Curriculog	5/6/2021 4:36 pm Reply
Graduate Curriculum has approved this proposal on Graduate Programs Committee.	
Curriculog	4/26/2021 9:32 pm Reply
Mohamed Trabia has approved this proposal on School/College Associate Dean/ Dean.	
Melissa Morris	4/26/2021 6:24 pm Reply
The college committee approved this decision	
Curriculog	4/26/2021 6:24 pm Reply
Melissa Morris has approved this proposal on School/College Committee.	
Curriculog	4/26/2021 1:03 pm Reply
CEEC Chair has approved this proposal on Department Chair.	
Curriculog	4/26/2021 9:29 am Reply
CEEC Graduate Coordinator has approved this proposal on Graduate Coordinator.	
Curriculog	4/26/2021 8:29 am Reply
Graduate Curriculum has approved this proposal on Technical Review.	
Curriculog	4/22/2021 0:15 am Reply
This proposal has passed its deadline and has been approved.	
Curriculog	4/21/2021 9:12 am Reply
CEEC Graduate Coordinator has approved this proposal on Originator.	

Curriculog

4/19/2021 11:47 am [Reply](#)

CEEC Graduate Coordinator has launched this proposal.

Curriculog

4/19/2021 11:40 am [Reply](#)

CEEC Graduate Coordinator imported from the map 2021-2022 Working Graduate Catalog into the following proposal fields: I. General Information: Degree/ Certificate Name, I. General Information: Degree Type, I. General Information: Program Type, II. Program Changes: After you have launched proposal, update prospective curriculum here.