Republic of the Philippines
BATANGAS STATE UNIVERSITY
BatStateU Alangilan
Alangilan, Batangas City
College of Engineering, Architecture and Fine Arts
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CURRICULUM
Master of Science in Construction Management (MSCM)

Academic Year 2021-2022
Reference CMOs: 15 Series of 2019: Policies, Standards and Guidelines for Graduate Programs

Curriculum Description

The Master of Science in Construction Management is designed to produce graduates with extensive and comprehensive knowledge of construction methods and technology, as well as improved managerial skills and knowledge needed to oversee the project planning, design and construction from pre-design to closeout. The graduates of the program will have advanced learnings in the use of modern tools, like the Building Information Modeling (BIM), will gear them toward more productive careers in construction. Moreover, with the balance of technical and management backgrounds, graduates are expected to be competent in handling, analyzing, and solving practical problems related to construction and in addressing issues arising from the 4th Industrial Revolution.

Program Educational Objectives of Construction Management (PEO)

The MS Construction Management alumni three to five years after graduation shall:

1. **Specialist.** Practiced as a high-level in solving complex construction management problems leading to improvements and innovations, while taking into consideration the environmental, social, and economical requirements.

2. **Professionalism and Leadership.** Assumed leadership position in industry, academe, government, or private sector with consideration to social and ethical responsibility.

3. **Lifelong Learning.** Engaged in lifelong learning through further studies, research, certifications, promotions, and other personal and professional development activities.

Institutional Graduate Attributes (IGA)

The student should achieve at least 75% for each IGA upon graduation

1. **Knowledge Competence.** Demonstrate a mastery of the fundamental knowledge and skills required for functioning effectively as a professional in the discipline, and an ability to integrate and apply them effectively to practice in the workplace.

2. **Creativity and Innovation.** Experiment with new approaches, challenge existing knowledge boundaries and design novel solutions to solve problems.

3. **Critical and Systems Thinking.** Identify, define, and deal with complex problems pertinent to the future professional practice or daily life through logical, analytical and critical thinking.

4. **Communication.** Communicate effectively (both orally and in writing) with a wide range of audiences, across a range of professional and personal contexts, in English and Pilipino.

5. **Lifelong Learning.** Identify own learning needs for professional or personal development; demonstrate an eagerness to take up opportunities for learning new things as well as the ability to learn effectively on their own.

6. **Leadership, teamwork, and Interpersonal Skills.** Function effectively both as a leader and as a member of a team; motivate and lead a team to work towards goal; work collaboratively with other team members; as well as connect and interact socially and effectively with diverse culture.

7. **Global Outlook.** Demonstrate an awareness and understanding of global issues and willingness to work, interact effectively and show sensitivity to cultural diversity.

8. **Social and National Responsibility.** Demonstrate an awareness of their social and national responsibility; engage in activities that contribute to the betterment of the society; and behave ethically and responsibly in social, professional and work environments.

Students Outcomes

The following skills, knowledge, and behaviors are expected to be attained by the students as they progress through the program:

1. **Knowledge Competence.** Demonstrate a comprehensive and broad understanding of construction management principles and apply advanced knowledge in the specific engineering discipline;

2. **Critical and System Thinking.** Analyze, synthesize, create and evaluate the challenges in construction management practice;

3. **Design and Analysis.** Design components, devices, and systems to meet specified engineering needs under real–world constraints;

4. **Communication.** Communicate effectively the technical knowledge, both orally and in writing, on complex construction management activities;

5. **Leadership and Teamwork.** Function effectively as an individual, a team member, or as a leader in diverse work environments;

6. **Creativity and Innovation.** Contribute to the generation, dissemination and preservation of knowledge, methodologies, techniques, and processes;

7. **Lifelong Learning.** Engage in continuous professional development and lifelong learning endeavors;

8. **Ethics and Professionalism.** Conduct oneself within professional and ethical standards; and

9. **Research.** Perform independent scientific research that results in innovation with application.

CURRICULUM COMPONENTS

A. CORE COURSES (9 units)		
Course Code	**Course Title**	**Credit Unit**
MSCM 501	Special Topics in Mathematics with Applications to Construction Management	3
MSCM 502	Optimization Methods on Construction Management	3
RMCM 503	Research Methods in Construction Management	3
B. SPECIALIZATION COURSES (9 units)		
Course Code	**Course Title**	**Credit Unit**
MSCM 504	Construction Operations and Engineering Management	3
MSCM 505	Project Cost Management and Estimating	3
MSCM 506	Construction Scheduling and Resource Optimization	3
C. THESIS COURSES (6 units)		
Course Code	**Course Title**	**Credit Unit**
MSCM 520	Thesis Proposal Writing with Oral Defense	3
MSCM 521	Final Oral Defense	3
D. ELECTIVE COURSES (6 units)		
Course Code	**Course Title**	**Credit Unit**
MSCME 501	Building Information Modeling	3
MSCME 502	Safety Management Construction Projects	3
MSCME 503	Information and Sensing Technology in Construction	3
MSCME 504	Heavy Construction Equipment & Methods	3
MSCME 505	Risk Management in Construction Projects	3