CONSTRUCTION MANAGEMENT PROGRAM

School of Planning, Design and Construction
College of Agriculture and Natural Resources

101 Principles of Construction Management
Fall, Summer. 2(2-0) R: Not open to seniors. SA: BCM 101
Historical developments, current issues and trends in commercial and residential construction industries.

124 Residential Construction Materials and Methods
Spring, Summer. 3(3-0) P: CMP 101 SA: BCM 124
Properties of construction materials and their application in residential construction.

210 Commercial Construction Methods
Fall. 3(3-0) P: CMP 124 or concurrently SA: BCM 210 C: CMP 211 concurrently.
Commercial construction: principles, materials, assemblies, and commercial blueprints.

211 Building Codes
Fall. 3(3-0) P: CMP 124 or concurrently SA: BCM 211 C: CMP 210 concurrently.
Construction codes: structural, mechanical, electrical, and plumbing. Building safety and accessibility.

222 Statics and Strengths of Materials
Spring. 3(3-0) P: (CMP 210 and CMP 211) and (MTH 124 or MTH 132 or LB 118) and (PHY 183 or PHY 231) SA: BCM 222 Not open to students with credit in CE 221.

230 Utility Systems
Spring. 4(4-0) P: CMP 210 SA: BCM 230
Heating, cooling, ventilating, electrical, gas, lighting, water, waste water, telecommunications, fire protection, safety, security, and sound control systems in residential and commercial construction. Applicable codes.

305 Site Construction and Measurement
Fall. 3(2-2) R: Open to juniors or seniors in the Construction Management Major. SA: BCM 305
Site construction methods, materials and equipment for buildings, soil, foundation, erosion, and storm water. Layout, leveling, surveying, and underground utilities.

311 Construction Project Scheduling
Fall, Spring. 3(2-2) P: (STT 200 or STT 201 or STT 315 or STT 421) and (CMP 305 and CMP 322) R: Open to juniors or seniors in the Construction Management Major or in the Civil Engineering Major or approval of school. SA: BCM 411, CMP 411
Basic construction project scheduling procedures. Work breakdown structure, critical path method, and scheduling logic. Activity durations, status reports, resource allocation, and control.

315 Construction Quantity Surveying
Spring. 3(2-2) P: CMP 305 and (CSE 101 or CSE 131 or CSE 231 or CSS 110) R: Open to juniors or seniors in the Construction Management Major or in the Civil Engineering Major or approval of school. SA: BCM 315

322 Structural Systems
Fall. 3(3-0) P: CMP 222 or CE 221 or ME 222 R: Open to juniors or seniors in the Construction Management Major or in the Civil Engineering Major or approval of school. SA: BCM 322
Structural design using wood, steel and concrete. Beams, columns, footings, and foundation walls. Loading, soils.

325 Real Estate Principles and Construction Finance
Fall. 4(4-0) P: EC 201 or EC 202 or EC 251H or EC 252H R: Open to juniors or seniors in the Construction Management Major or approval of department. SA: BCM 325
Financial methods and instruments utilized in construction, rehabilitation, development, and purchase of real estate. Terms, contracts, valuation, brokerage, taxation, risk, and interest rate analysis.

328 Construction Presentation Graphics and Building Information Modelling
Fall, Spring. 2(1-2) P: CMP 210 and CMP 230 R: Open to juniors or seniors in the Construction Management Major or approval of department. SA: BCM 328
Graphic communication methods used in construction organizations. Use of Building Information Modelling software.

385 Construction Documents and Contracts (W)
Spring. 3(3-0) P: (CMP 305) and completion of Tier I writing requirement R: Open to juniors or seniors in the Construction Management Major or in the Civil Engineering Major or approval of department. SA: BCM 385

401 Construction Safety Management
Spring. 3(3-0) P: CMP 305 RB: CMP 385 or (CMP 423 or concurrently) R: Open to juniors or seniors in the Construction Management Major or in the Civil Engineering Major or approval of department. SA: BCM 401
Construction safety with Occupational Safety and Health Administration (OSHA) emphasis. General safety and health provisions, records, and safety management programs. Personnel protection and life saving equipment. Economic impact of safety programs.

415 Cost Estimating and Analysis
Fall. 3(2-2) P: CMP 315 and CMP 385 SA: BCM 415

423 Construction Project Management
Fall, Spring. 3(3-0) P: CMP 385 and (CMP 311 or concurrently) and (CMP 415 or concurrently) R: Open to seniors in the Construction Management Major or in the Civil Engineering Major or approval of department. SA: BCM 423
Construction management principles and practices. Project planning and controls. Students are preparing for and taking a certification exam.

435 Residential Building and Development Projects (W)
Spring. 3(1-4) P: ((ACC 201 and ACC 202) or ACC 230) and ((CMP 423 or concurrently) and completion of Tier I writing requirement) R: Open to seniors in the Construction Management Major. SA: BCM 435
Development of a residential project and business plan.

436 Commercial Building Projects (W)
Spring. 3(1-4) P: ((ACC 201 and ACC 202) or ACC 230) and ((CMP 328 and CMP 423 or concurrently) and completion of Tier I writing requirement) R: Open to seniors in the Construction Management Major. SA: BCM 436
Evaluation, procurement, and management of commercial building projects.

453 Land Development
Fall, Spring. 3(3-0) P: (CMP 305 and CMP 325) or UP 458 R: Open to juniors or seniors in the College of Agriculture and Natural Resources or in the School of Planning, Design and Construction or in the Construction Management Major or in the Civil Engineering Major or in the Urban and Regional Planning Major. SA: BCM 353, CMP 353
Methods and practices of land development, market research, financial feasibility, land use regulations, legal documentation, and site analysis and design. Case studies.

490 Independent Study
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open to undergraduate students in the Construction Management major. Approval of department; application required. SA: BCM 490
Special problems in acquisition and development of residential land, design, construction technology, building materials, finance, marketing, construction management, or land use codes and regulations.

491 Special Topics in Construction Management
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open to undergraduate students in the Construction Management major. Approval of department. SA: BCM 491
Topics such as computer methods in construction management, construction technology, solar energy, special land use codes, or new technology management.
### Capstone Project Competitions

Fall. 3(2-2) A student may earn a maximum of 6 credits in all enrollments for this course. P: CMP 385 and CMP 311 or approval of school R: Open to seniors in the Construction Management major.

Process, evaluation, bidding, procurement, value engineering, and management through simulated construction projects within the context of construction competitions. Field trips may be required.

### Professional Internship in Construction Management

Fall, Spring, Summer. 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. A student may earn a maximum of 6 credits in all enrollments for any or all of these courses: ABM 493, AEE 493, ANR 493, ANS 493, CMP 493, CSS 493, CSUS 493, EEP 493, FIM 493, FSC 493, FW 493, HRT 493, PKG 493, and PLP 493. R: Open to students in the Construction Management major. Approval of department; application required. SA: BCM 493

Supervised professional experiences in agencies and businesses related to a student's major field of study.

### Construction Systems

Fall, Spring. 1(0-2) R: Open only to graduate students in the Construction Management major or Civil Engineering major or Interior Design major and Facilities Management major. SA: BCM 810 Not open to students with credit in CMP 124 or CMP 210. Construction materials and methods in the U.S. Steel and wood construction.

### Advanced Project Scheduling

Fall, Spring, Summer. 3(2-2) SA: BCM 811 Critical path analysis for effective and logical scheduling of construction projects. Identification of project activities and their relationships. Schedule development, analysis, and updating. Relationship of project costs and resources to the schedule. Effective communication of schedule information.

### Advanced Cost Estimating and Analysis

Fall, Summer. 3(2-2) Advanced estimation of construction project costs: direct and indirect, labor, material, quantity surveying, productivity, and equipment. Overhead and profit. Bidding. Role of contractor, owner, and architect or engineer. Computer-based estimating.

### Construction Project Management & Information Systems

Spring. 3(2-2) RB: Background in estimating and scheduling required. SA: BCM 817 Not open to students with credit in CMP 423. Construction project administration, project controls, information generation and utilization for the management of construction projects. Integration of construction management software, and knowledge-based models.

### Contracts and Legal Issues in Construction

Spring. 3(3-0) R: Open to masters students or doctoral students in the Construction Management major or in the Interior Design and Facilities Management major or in the Civil Engineering major or in the Master in Urban and Regional Planning.

Construction contracts and documents. Application of Michigan and federal case law to construction and development claims and litigation.

### Lean Construction Principles and Methods


### Special Problems

Fall, Spring, Summer. 1 to 9 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Open to graduate students in the College of Agriculture and Natural Resources. Approval of department; application required. SA: BCM 890

Individual study in land acquisition and development, design, construction, management, finance, marketing, and structural analysis.

### Advanced Topics in Building Construction Management

Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open only to graduate students in College of Agriculture and Natural Resources. Approval of department, SA: BCM 891

Advanced topics in building construction management.

### Construction Management Research Seminar

Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to masters students in the Construction Management major. SA: BCM 898

Master's degree research paper.

### Master's Thesis

Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open only to masters students in the Construction Management major. SA: BCM 899

Master's thesis research.