CONSTRUCTION MANAGEMENT PROGRAM

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

101 Principles of Construction Management
Fall. 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. 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
Spring. 3(3-0) P: CMP 124 or concurrently SA: BCM 211 C: CMP 210 concurrently.
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 163 or PHY 231) SA: BCM 222

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
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. Past instructions, 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 CS 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 251 H or EC 252 H 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 Modeling
Fall. 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 Modeling software.

351 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 and open to juniors or seniors in the Interior Design Major or in the Bachelor of Landscape Architecture or approval of department. SA: BCM 385

401 Construction Safety Management
Fall. 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 lifesaving equipment. Economic impact of safety program.

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 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. 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.

479 Wood and Engineered Composites Science and Technologies
Spring. 3(2-2) Interdepartmental with Forestry. P: FOR 414 or concurrently
Sciences and technologies governing industrial and manufacturing processes for lumber, engineered wood, and composite wood products.
Independent Study
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 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.

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. 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, Building, and Energy Systems
Fall. 3(3-0) R: Open to graduate students in the School of Planning, Design and Construction or in the Civil Engineering Major or approval of department.
Construction, building, and energy systems in the U.S. including steel and wood construction and mechanical, electrical, and plumbing systems.

Advanced Project Scheduling
Fall. 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. Relationships of project costs and resources to the schedule. Effective communication of schedule information.

Advanced Cost Estimating and Analysis
Fall. 3(2-2)

Construction Project Management and 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 master’s 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.

Advanced Virtual Design and Construction
Fall. 3(2-2) RB: Computer application background in architecture, civil and construction engineering R: Open to graduate students in the School of Planning, Design and Construction or approval of department.
Advanced mechanisms, applications, and practices of virtual design and construction (VDC) in the construction management using Building Information Modeling (BIM) technology.

Lean Construction Principles and Methods
Spring. 3(2-2) RB: Some aspects of project management (scheduling, estimating), statistics, and probabilities.

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 Civil Engineering Major or in the School of Planning, Design and Construction or approval of department.
Application of Michigan and federal case law to construction and development claims and litigation.

Advanced Topics in Building Construction Management
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to master’s students in the Construction Management major. SA: BCM 892
Current areas and topics of research in built environment. Responsible conduct of research. Techniques to search for, analyze, and synthesize published literature. Critical analysis of existing research. Development of a preliminary proposal. Verbal and written communication of technical information.

Master’s Research
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 master’s students in the Construction Management major. SA: BCM 898
Master’s degree research paper.

Master’s Thesis Research
Fall, Spring. Summer. 1 to 10 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Open only to master’s students in the Construction Management major. SA: BCM 899
Master’s thesis research.