CONSTRUCTION MANAGEMENT PROGRAM

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

101 Principles of Building Construction
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) RB: CMP 101 SA: BCM 124
Properties of construction materials and their application in residential construction.

210 Commercial Construction Methods
Fall. 3(3-0) P-M: (CMP 101 or concurrently) and CMP 124 SA: BCM 211 C: CMP 211 concurrently.
Commercial construction: principles, materials, assemblies, and commercial blueprints.

211 Building Codes
Fall. 3(3-0) P-M: (CMP 101 or concurrently) and CMP 124 SA: BCM 211 C: CMP 211 concurrently.
Construction codes: structural, mechanical, electrical, and plumbing. Building safety and accessibility.

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

230 Utility Systems
Spring. 4(4-0) P-M: CMP 210 and CMP 211 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) P-M: CMP 230 R: Open only 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.

315 Construction Quantity Surveying
Spring. 3(2-2) P-M: CMP 305 and (CSE 101 or CSE 131 or CSE 231 or CSS 110 or LBS 126) R: Open only to juniors and seniors in the Construction Management or Civil Engineering major. SA: BCM 315 Measurement of quantities for construction projects. Work breakdown structure. Industry standards.

322 Structural Systems
Fall. 3(3-0) P-M: CMP 222 or (ME 221 or ME 222) R: Open only to juniors or seniors in the Construction Management or Civil Engineering majors. SA: BCM 322 Not open to students with credit in CE 408 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-M: (EC 201 or EC 202 or EC 251H or EC 252H) and (MTH 124 or MTH 132 or LBS 118) R: Open only 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
Fall, Spring. 2(1-2) P-M: CMP 230 and (CSE 101 or CSE 131 or CSE 231 or CSS 110 or LBS 126) R: Open only to juniors or seniors in the Construction Management major. SA: BCM 328 Graphic communication methods used in construction organizations.

353 Land Development
Spring. 3(3-0) P-M: (CMP 211 and CMP 305) and (CMP 325 or UP 458) R: Open only to juniors or seniors in the Construction Management or Civil Engineering or Landscape Architecture or Urban and Regional Planning major. SA: BCM 353 Methods and practices of land development. Market research. Financial feasibility. Land use regulations. Legal documentation. Site analysis and design. Case studies.

385 Construction Documents and Contracts (W)
Spring. 3(3-0) P-M: (CMP 305) and completion of Tier I writing requirement R: Open only to juniors or seniors in the Construction Management or Civil Engineering or Landscape Architecture major. SA: BCM 385 Construction contracts for commercial and residential projects. Contract procedures, bidding, changes, substitutions, specifications. Insurance, bonding, claims, disputes, and payments. Responsibilities of owners and contractors.

401 Construction Safety Management
Spring. 3(3-0) P-M: CMP 305 RB: CMP 385 or (CMP 423 or concurrently) R: Open only to juniors or seniors in the Construction Management or Civil Engineering major. 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 program.

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

415 Cost Estimating and Analysis

423 Construction Project Management
Fall. Spring. 3(3-0) P-M: CMP 385 and (CMP 411 or concurrently) and (CMP 415 or concurrently) R: Open only to seniors in the Construction Management or Civil Engineering major. SA: BCM 423 Construction management principles and practices. Project planning and controls.

435 Residential Building Projects (W)
Spring. 3(1-4) P-M: (ACC 201 and ACC 202) or ACC 230) and (CMP 328 and CMP 353 and (CMP 423 or concurrently)) and completion of Tier I writing requirement R: Open only 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-M: (ACC 201 and ACC 202) or ACC 230) and (CMP 328 and CMP 353 and (CMP 423 or concurrently)) and completion of Tier I writing requirement R: Open only to seniors in the Construction Management major. SA: BCM 436 Evaluation, procurement, and management of commercial building projects.

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 only to Construction Management majors. 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 Building Construction Management
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. P-M: CMP 210 R: Open only to Construction Management majors. Approval of department. SA: BCM 491 Topics such as computer methods in building construction management, construction technology, solar energy, special land use codes, or new technology management.

CMP—Construction Management Program
Professional Internship in Building 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, EEP 493, FIM 493, FSC 493, FW 493, HRT 493, PKG 493, PRR 493, and RD 493. R: Open only to juniors or seniors 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. 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.

Advanced Construction Project Management
Fall, Spring. 3(3-0) RB: CMP 411 and CMP 415 R: Open only to graduate students in the Construction Management major. SA: BCM 823
Project management issues, services, and documentation. Bidding, cost accounting, scheduling, project planning and controlling.

Lean Construction Principles and Methods
Spring. 3(3-0) RB: Some aspects of project management (scheduling, estimating), statistics, and probabilities. Origins and elements of lean production. Lean-based productivity improvement.

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 the College of Agriculture and Natural Resources. Approval of department; application required. SA: BCM 891
Advanced topics in building construction management.

Construction Management Research Seminar
Fall. 2(2-0) R: Open only to graduate students in the College of Agriculture and Natural Resources or College of Engineering or College of Human Ecology. SA: BCM 892
Current areas and topics of research in construction management. Resources of research results, analysis of existing research, and development of preliminary proposal.

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 99 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.