COMPSCI 450 PROGRAMMING LANGUAGE TRANSLATION (4-0-4) (S). Theory and practice of formal language translation, experience with compiler construction tools under UNIX. Students work on significant projects. PREREQ: COMPSCI 253 and COMPSCI 342 and COMPSCI 354.

COMPSCI 453 OPERATING SYSTEMS (4-0-4) (F). Process management, concurrency, inter-process communication, synchronization, scheduling, memory management, file systems and security. Case studies of multiple operating systems. PREREQ: COMPSCI 253 and COMPSCI 342 and ECE 332.

COMPSCI 455 DISTRIBUTED SYSTEMS (3-0-3) (S) (Even years). Principles and paradigms of distributed systems. Communication, processes, naming, synchronization, consistency and replication, fault tolerance and security. In-depth coverage of Remote Procedure Call (RPC), Remote Method Invocation (RMI) and socket programming. Survey of major distributed systems. Several software projects. PREREQ: COMPSCI 453.

COMPSCI 464 COMPUTER GRAPHICS I (3-0-3) (F) (Even years). Mathematics and programming techniques for computer graphics emphasizing raster graphics, rasterization algorithms, and scanline rendering. Two- and three-dimensional transformations, homogeneous coordinates, projections; clipping, hidden-surface removal. PREREQ: COMPSCI 342 and MATH 301; MATH 275 recommended.

COMPSCI 465 COMPUTER GRAPHICS II (3-0-3) (S) (Odd years). Polygonal representation of 3D objects, lighting models, shading and shadows, texture mapping, antialiasing, interactive graphics. Nonrecursive and recursive ray tracing. PREREQ: COMPSCI 464.

COMPSCI 471 SOFTWARE ENGINEERING (3-0-3) (F) (Even years). A formal study of the software development process. Topics include: life cycle models, requirements definition, specification, design, implementation, validation, verification, maintenance, and reuse. Students work in small teams on significant projects. PREREQ: COMPSCI 342.

COMPSCI 472 OBJECT-ORIENTED DESIGN PATTERNS (3-0-3) (F) (Even years). Reviews object-oriented design principles, explains the goals and form of design patterns, and examines several well-known patterns. PREREQ: COMPSCI 342.

COMPSCI 488 SENIOR OUTCOME ASSESSMENT (0-0-0) (F,S). Required to graduate. In their last semester, senior students will take an outcome-assessment examination. (Pass/Fail.) PREREQ: Senior Standing.

COMPSCI 498 SEMINAR (1-0-1) (F). Research, writing, and an oral presentation of a current topic in computer science. (Pass/Fail.) PREREQ: COMPSCI 342.

### Department of Construction Management

**College of Engineering**

Engineering Technology Building, Room 201  
Phone: (208) 426-3764  
http://coen.boisestate.edu/cm/home.asp  
Fax: (208) 426-4800  
Chair and Associate Professor: Rebecca Mirsky, Associate Chair and Associate Professor: Songer. Assistant Professors: Cline, Davis. Lecturer: Mincks

**Degrees Offered**

- B.S. and Minor in Construction Management (B.S.C.M.)

**Program Statement**

The vision of the Construction Management program is to be recognized for providing consistent, high quality education for construction management professionals. The mission of the Construction Management program is to provide a comprehensive education for the development of professional constructors who, through innovation, character and ability are prepared to meet the construction needs of society. The Construction Management program is accredited by the American Council for Construction Education (ACCE). Students interested in the Construction Management program should note the following:

1. All construction management majors must complete at least 45 credits, be in Good Academic Standing, and make application to the department chair before being admitted to any upper-division construction management classes. Students will be evaluated based upon departmental policy CMGT04-002 found on the departmental website.
2. All construction management classes take several field trips during the semester (normally scheduled on Friday afternoons).
3. No more than 32 credits may be taken from the College of Business and Economics.
4. Where a class is included in more than one list of electives, it may be used to fulfill only one requirement.

The program in construction management is accredited by the American Council for Construction Education, 1717 North Loop 1604 East, Suite 320; San Antonio, Texas 78232-1570, telephone (210) 455-0161, http://acce-hq.org/

### Degree Requirements

<table>
<thead>
<tr>
<th>Construction Management B.S.C.M.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course Number and Title</strong></td>
<td><strong>Credits</strong></td>
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<tr>
<td>ENGL 101-102 Introduction to College Writing and Research</td>
<td>6</td>
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**Area I** — see page 44 for list of approved courses

- Area I core course in one field | 3 |
- Area I core course in a second field | 3 |
- Area I core course in any field | 3 |

**Area II** — see page 44 for list of approved courses

- COMM 101 Fundamentals of Speech Communication | 3 |
- ECON 202 Principles of Microeconomics | 3 |

**Area III**

- MATH 160 Survey of Calculus OR  
  MATH 170 Calculus I | 4 |
- PHYS 101 General Physics OR  
  PHYS 211, 211L, Physics I with Calculus and Lab | 4.5 |
- PHYS 112 General Physics OR  
  PHYS 212, 212L Physics II with Calculus and Lab | 4.5 |

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Course Offerings

See page 63 for a definition of the course-numbering system.

CMGT—Construction Management

Lower Division

CMGT 110 CONSTRUCTION MATERIALS AND METHODS (3-0-3) (F/S). Introduction to construction vocabulary and knowledge. Identification of construction materials, elements and systems. PREREQ: MATH 108 or equivalent.

CMGT 111 Construction Materials and Methods Lab (0-3-1)(F/S). Introduction to construction safety. Hands-on applications in site layout, formwork and concrete; masonry; steel; wood; and other construction materials. PRE/Coreq: CMGT 110.

CMGT 240 INTRODUCTION TO CONSTRUCTION MANAGEMENT (3-0-3)(F/S). Study of construction management in a global environment. Topics include organizational environments, contract delivery methods, the design and construction process, basic estimating, and basic scheduling. Knowledge of word processing and spreadsheets expected. Occasional Friday field trips required. PREREQ: MATH 108.

CMGT 245 DRAWINGS, SPECIFICATIONS, AND CODES (3-0-3)(F,S). Reading and interpretation of construction drawings. Introduction to and practice in how orthographic views and pictorial drawings are used to represent objects. Organization, vocabulary and meaning of construction specifications and building codes. Occasional Friday field trips required. PREREQ: CMGT 110.

CMGT 246 CONSTRUCTION ENGINEERING GRAPHICS (0-3-1) (F,S). Orthographic projections, graphic communication and 3 dimensional visualization with an awareness of standard drafting tools and techniques, computer aided drafting and free hand sketching.

Upper Division

CMGT 320 CONSTRUCTION EQUIPMENT AND METHODS (3-0-3) (F,S). Characteristics, capabilities, limitations and employment of general building and heavy construction equipment. Friday field trips required. PREREQ: ENGR 205 or ENGR 210.

CMGT 350 MECHANICAL AND ELECTRICAL INSTALLATIONS (4-0-4)(F,S). The fundamentals of mechanical and electrical contracting. Terminology, components, and basic design features of HVAC systems; plumbing systems; and electrical circuits and service equipment. Current mechanical and electrical drawings, specifications and building codes are presented. Occasional Friday field trips required. PREREQ: CMGT 245 and either PHYS 112 or PHYS 212.

CMGT 367 CONSTRUCTION ESTIMATING (3-0-3)(F,S). Extracting quantity take-offs from drawings, classifying the work in accordance with the specifications, compiling and pricing estimates, developing cost estimates using CSI divisions and work breakdown structure, and preparation and evaluation of bids. Occasional Friday field trips required. PREREQ: CMGT 240, CMGT 245, and MATH 147 or equivalent.

CMGT 374 CONSTRUCTION OPERATIONS & IMPROVEMENTS (2-0-2) (S). The use of statistical sampling, time and motion studies, crew balance analysis, and flow and process charts to analyze management methods and improve labor efficiency, equipment and materials usage, safety, and employee motivation. PREREQ: CMGT 240.


Construction Management Minor

<table>
<thead>
<tr>
<th>Course Number and Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CMGT 240 Introduction to Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>CMGT 245 Drawings, Specifications, and Codes</td>
<td>3</td>
</tr>
<tr>
<td>CMGT 246 Construction Engineering Graphics</td>
<td>1</td>
</tr>
<tr>
<td>CMGT 367 Construction Estimating</td>
<td>3</td>
</tr>
<tr>
<td>CMGT 374 Construction Operations and Improvements</td>
<td>2</td>
</tr>
<tr>
<td>CMGT 385 Construction Contracts and Law</td>
<td>3</td>
</tr>
<tr>
<td>CMGT 417 Project Scheduling</td>
<td>3</td>
</tr>
<tr>
<td>Upper-division CMGT courses</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>
CMGT 410 CONCRETE FORMWORK CONSTRUCTION (3-0-3)(F). Introduction to various concrete forming systems. Design and methods of formwork construction, including issues related to safety and quality control. Occasional Friday field trips required. PREREQ: ENGR 306.


CMGT 420 REINFORCED CONCRETE AND STEEL CONSTRUCTION (3-0-3)(F/S). The structural analysis and construction of reinforced concrete and structural steel systems; including vertical and horizontal loads on beams and columns; bending, shear, compressive and tensile stresses and deflection analysis, and construction methods. PREREQ: ENGR 306.

CMGT 460 PROJECT COST CONTROLS (3-0-3)(S). Theory of cost accounting and cost control, with emphasis on cost determination as a tool of management and project cost control. Includes bidding, budgeting, and developing project cost record-keeping system for managing cash, receivable, payroll, and subcontractors. PREREQ: ACCT 206 and CMGT 367.

CMGT 470 LAND DEVELOPMENT (3-0-3)(F/S). Overview of the land development process, including planning, design, construction, and sale of various types of real estate. Topics include key concepts in successful development, feasibility studies, site selection and improvement, government policy and regulation, project planning and master planning, design of public infrastructure, and construction of site improvements. PREREQ: Upper-division standing.

CMGT 475 CONSTRUCTION PROJECT MANAGEMENT (3-0-3)(F/S). Topics related to the procurement of work and the management of construction projects including business development and proposal preparation; contract; risk and change management; safety and quality management; jobsite layout and control; leadership and team building; and sustainability and ethics. Students are required to take the AIC Level 1 Certified Professional Constructor Exam as a culminating activity. PREREQ: CMGT 367, CMGT 385 and senior status. PRE/COREQ: CMGT 417.

CMGT 487 PRINCIPLES OF PROJECT PROPOSAL PREPARATION AND PRESENTATION (1-0-1)(F). Problem analysis, strategic thinking, organization, and communication of a team’s written and oral response to a request for proposal. Typical proposal types: Heavy Civil, Commercial, Residential, Design-Build, or another appropriate construction industry. PREREQ: CMGT 240.

CMGT 488 PROPOSAL SEMINAR (2-0-2)(S). The formation and delivery of a formal construction industry proposal. Includes presentation of a proposal before a group of industry professionals in a competitive setting. PREREQ: CMGT 487.

CMGT 493 INTERNSHIP. Cooperative education/internship in construction management provides practical, on-the-job experience in blueprint reading, material takeoffs, estimating, equipment management, and project planning.

CMGT 496 INDEPENDENT STUDY. Construction studies as supervised by a construction faculty member.

Department of Counselor Education

College of Education
Education Building, Room 643
E-mail: BBIRDSPA@boisestate.edu

Chair and Professor: Bobbie Birdsall. Professor: Cutler, Doumas, Schottelkorb.

Degrees Offered
- Master of Arts in Counseling
- Graduate Certificate in Addiction Studies
- Graduate Certificate in Gerontological Studies

Department Statement
The department houses the graduate counseling programs, offers a variety of undergraduate classes, and provides course work suitable for practicing counselors’ continuing education units.

The master of arts in counseling program is designed to prepare professionals in education and related careers to become professional counselors. Included are extensive practica and internship opportunities to work with a wide variety of clients in schools and other work settings. Graduates are prepared to begin the process for licensure as professional counselors.

Current areas of concentration include school counseling and addiction counseling.

Course Offerings
See page 63 for a definition of the course-numbering system.

COUN — COUNSELING

COUN 458 DEPRESSION (1-0-1)(S). Examines depression as both an academic subject matter and personal expression of mood associated with health and psychological problems. Assesses the symptoms, causes and related treatments for the range of depressive related problems from situational based depression and grief reactions to major clinical depression and bipolar disorder.

COUN 459 FEARS AND PHOBIAS (1-0-1)(F). An overview of the symptoms and underlying casual factors associated with the range of anxiety-based problems. A continuum of severity is presented across the normal impact of stress to severe "anxiety disorders" (panic, phobias, obsessive-compulsive, generalized, post-traumatic, and acute stress). Anxiety based problems are analyzed in terms of the interactions between behavior, affect, somatic, interpersonal and cognitive factors that operated in a cyclical fashion.

Creative Writing — see Department of English