### REQUIREMENTS FOR THE BACHELOR OF SCIENCE IN CONSTRUCTION SCIENCE

**COLLEGE OF ARCHITECTURE**

**THE UNIVERSITY OF OKLAHOMA**

#### For Students Entering the Oklahoma State System for Higher Education

**Summer 2015 through Spring 2016**

<table>
<thead>
<tr>
<th>Year</th>
<th>FIRST SEMESTER</th>
<th>Hours</th>
<th>SECOND SEMESTER</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td><strong>CNS 1112, Cultures of Collaborating, Creating &amp; Constructing</strong></td>
<td>2</td>
<td>ENGL 1213, Principles of English Composition (Core I), or 1214, Expository Writing (Core I)</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>COMM 1113, Principles of Communication</strong></td>
<td>3</td>
<td><strong>EXPO 1213, Expository Writing (Core I)</strong></td>
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<tr>
<td></td>
<td><strong>ENGL 1113, Principles of English Composition (Core I)</strong></td>
<td>3</td>
<td><strong>MATH 1823, Calculus I (Core I)</strong></td>
<td>3</td>
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<tr>
<td></td>
<td><strong>HIST 1483 or 1493, U.S. History (Core IV)</strong></td>
<td>3</td>
<td><strong>P SC 1113, American Federal Government (Core III)</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>PHIL 1213, Introduction to Ethics</strong></td>
<td>3</td>
<td><strong>GEOL 1114, Physical Geology (Core II)</strong></td>
<td>4</td>
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<td></td>
<td></td>
<td></td>
<td><strong>CNS 1212, Computers in Construction</strong></td>
<td>2</td>
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<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>14</td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>15</td>
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</tbody>
</table>

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A minimum 2.50 OU and combined retention GPA is required for admission to Construction Science program. Admission is limited to the top 40 students with the required GPAs based on all courses listed above. All courses listed above must be completed before applying for admission to the junior year.

<table>
<thead>
<tr>
<th>Year</th>
<th>FIRST SEMESTER</th>
<th>Hours</th>
<th>SECOND SEMESTER</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOPHOMORE</strong></td>
<td><strong>CNS 3103, Construction Surveying</strong></td>
<td>3</td>
<td><strong>CNS 3223, Structures I</strong></td>
<td>3</td>
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<tr>
<td></td>
<td><strong>CNS 3123, Statics &amp; Strengths of Materials</strong></td>
<td>3</td>
<td><strong>CNS 3443, Mechanical, Electrical &amp; Plumbing Systems I</strong></td>
<td>3</td>
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<tr>
<td></td>
<td><strong>CNS 3433, Mechanical, Electrical &amp; Plumbing Systems I</strong></td>
<td>3</td>
<td><strong>CNS 3824, Project Controls Management</strong></td>
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<tr>
<td></td>
<td><strong>CNS 3512, Cost Estimating</strong></td>
<td>2</td>
<td><strong>CNS 3821, Project Controls Lab II</strong></td>
<td>1</td>
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<tr>
<td></td>
<td><strong>CNS 3612, Project Controls Lab I</strong></td>
<td>2</td>
<td><strong>CNS 2843, Elements of Statistics (Core I)</strong></td>
<td>3</td>
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<tr>
<td></td>
<td><strong>CNS 3812, Project Planning &amp; Scheduling</strong></td>
<td>2</td>
<td><strong>LS 3323, Legal Environment of Business</strong></td>
<td>3</td>
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<tr>
<td></td>
<td><strong>MGT 3013, Principles of Organization &amp; Management</strong></td>
<td>3</td>
<td></td>
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<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>16</td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>18</td>
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#### SUMMER

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<thead>
<tr>
<th>Year</th>
<th>FIRST SEMESTER</th>
<th>Hours</th>
<th>SECOND SEMESTER</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SENIOR</strong></td>
<td><strong>CNS 4112, Understanding Design Services</strong></td>
<td>2</td>
<td><strong>CNS 4153, Legal Issues in Construction</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>CNS 4113, Structures II</strong></td>
<td>3</td>
<td><strong>CNS 4881, Construction Safety Management</strong></td>
<td>1</td>
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<tr>
<td></td>
<td><strong>CNS 4122, Building Information Modeling for Construction</strong></td>
<td>2</td>
<td><strong>CNS 4993, Construction Science Capstone (Capstone)</strong></td>
<td>3</td>
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<tr>
<td></td>
<td><strong>CNS 4523, Pre-Construction Services</strong></td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>CNS 4613, Soils and Foundations</strong></td>
<td>3</td>
<td>Construction Science Elective (upper-division)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Understanding Artistic Forms Elective (Core IV)</td>
<td>3</td>
<td><strong>Non-Western Culture Elective (Core IV)—Upper-Division</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>16</td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>12</td>
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9 May substitute MATH 1914 for MATH 1823.

A minimum grade of C is required in all CNS courses.

**CNS students are strongly encouraged to obtain a minor in Architecture, Business, or Communication.**

#### University-Wide General Education Requirements (minimum 40 hours)

Courses designated as Core I, II, III, IV, or Capstone are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list, including at least one upper-division Gen. Ed. course outside of the student’s major. Courses graded S/U or P/NP will not apply.

**Core I**
- Symbolic and Oral Communication (9–19 hours, 3–5 courses)
  - English Composition–6 hours, 2 courses
  - Mathematics–3 hours, 1 course
  - Foreign Language–6–10 hours, 2 courses in the same language, (which can be met by successfully completing two years of the same foreign language in high school)
  - Other (courses such as communication, logic or public speaking)

**Core II**
- Natural Science (7 hours, 2 courses)
  - Courses must be taken from different disciplines in the biological and/or physical sciences; one of which must include a laboratory.

**Core III**
- Social Science (6 hours, 2 courses)
  - One course must be P SC 1113, "American Federal Government"

**Core IV**
- Humanities (12 hours, 4 courses)
  - Understanding Artistic Forms–3 hours, 1 course
  - Western Civilization and Culture–6 hours, 2 courses, including HIST 1483 or HIST 1493
  - Non-Western Cultures–3 hours, 1 course

**Senior Capstone Experience (3 hours, 1 course)**

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2-14
3812 Project Planning and Scheduling. Prerequisite: 2813. Corequisites: 3512 and 3612. Application of scheduling techniques in an integrated construction planning, scheduling, and control system. Students will gain knowledge of schedule theory scheduling options, legal implications and practical applications of scheduling software. Students will schedule a building project using computer software. (F)

3834 Project Controls Management. Prerequisites: 3512 and 3812; Corequisite: 3824. Examines how basic accounting principles and procedures relate to the construction project budget and cost reporting after the contract is awarded. Focus on project cost classification, cost control and the technical skills required to maintain a cost control system. Students prepare required project communication documentation, and set-up and use of a system to track and manage the project including field productivity, work sequence, cost and variance, earned value and profitability, payment and cash flow, schedule compression, change and closeout. (Sp)

3943 Field Work. Prerequisite: junior standing and permission. Utilize a construction work experience in preparation for construction management functions. Student is responsible for finding the construction related activity and proposing a work-related project. Written and oral presentation is required. (F, Sp, Su)

4112 Understanding Design Services. Prerequisite: 3824. Course explores the roles and responsibilities of the owner, designer, and contractor and their collaboration with the constructor from project conception to completion. (F)

4113 Structures II. Prerequisite: 3223. Extension of the study of building structures through structural design of continuous building frameworks; loads, concrete structural systems, foundations, connections, and structural detailing. (F)

4122 Building Information Modeling for Construction. Prerequisite: 3824. Emphasizes the skills and knowledge required by the constructor to participate in the creation, projection, and execution of a project using BIM. Students combine knowledge of materials, methods, drafting, estimating and scheduling with BIM computer applications. (F)

4523 Legal Issues in Construction. Prerequisite: 4523 and Legal Studies 3323. An examination of current construction law as it pertains to the day-to-day management of the construction contract. Includes legal ramifications of construction building, contracts, changes, delays and dispute resolution. Emphasis is on the reduction of dispute through knowledge. (Sp)

4523 Pre-Construction Services. Prerequisite: 4523. Explores the role of the constructor, the services they offer during the design process, and their collaboration with design professionals during the pre-construction phase of a project. (F)

4613 Soils and Foundations. Prerequisite: 3223. Content includes identification and classification of soil properties as they pertain to a construction project, the role of the geotechnical engineer, soils reports, soil preparation, foundation design, soil testing, and the causes of building damage. (F)

4881 Construction Safety Management. Prerequisite: 4523. Emphasizes the importance of safety in the construction industry through guest speakers, readings, and other safety implications. Safety will be placed on safety as it relates to entry-level management positions and the professional's responsibility in creating a safe job site. (Sp)

4993 Construction Science Capstone. Prerequisite: 4112, 4113, 4122, 4523, 4613. All CNS classes in the CNS curriculum prior to the final semester of the senior year must be successfully completed before enrolling in the CNS capstone class. The capstone course is the culmination of the construction science undergraduate experience. Students apply all aspects of the construction project management process to an individual project, manage the construction process, and their collaboration with design professionals during the pre-construction phase of a project. (F)

5113 Principles of Economics—Macro. Prerequisite: SAT, Take the Placement Test, or, for incoming freshmen direct from high school, satisfactory score on the ACT/SAT. The functioning and current problems of the aggregate economy: determination and analysis of national income, employment, income distribution and price levels; monetary and fiscal policy; and aspects of international interdependence. Laboratory (F, Sp, Su) [III-SS]

5123 Principles of Economics—Micro. Prerequisite: SAT, Take the Placement Test, or, for incoming freshmen direct from high school, satisfactory score on the ACT/SAT. Goals, incentives and allocation of resources resulting from economic behavior with applications and illustrations from current issues: market failure, theories of management of goods and services, factors of production: the behavior of firms and industries in different types of competition and income distribution. Laboratory (F, Sp, Su) [III-SS]

2843 Elements of Statistics. Prerequisite: a grade of C or better in Mathematics 1530 or 1743 or 1813. An introduction to statistical techniques emphasizing business and economic applications. Topics covered include data summary techniques, elementary probability theory, estimation, hypothesis testing, single regression, time-series and index numbers. Laboratory (F, Sp, Su) [I-M]

COURSES IN GEOLOGY (GEOL)

1114 Physical Geology for Science and Engineering Majors. Prerequisite: equivalent knowledge of high school chemistry, physics and trigonometry. Laboratory included. Plate tectonics, the makeup of continents and mountain building. Heat flow, magnetism, gravity, rock testing, mineral identification, surface processes, including weathering, erosion, transport and deposition. Landforms, rivers, groundwater, glaciers, ocean processes, and volcanoes. Minerals and rocks. Application of geology to land-use, groundwater, mineral and fossil fuel exploration. Laboratory (F, Sp, Su) [II-LAB]

COURSES IN LEGAL STUDIES (L S)

3323 Legal Environment of Business. Prerequisite: junior standing. The legal environment of business organizations with ethical considerations and the social and political influences affecting such environments. (F, Sp, Su)

3013 Principles of Organization and Management. Prerequisite: junior standing. An introductory course presenting the basic concepts and practices of management, both private and public. Hrzn. Humanistic, behavioral, and administrative theories. Managerial functions, including planning, organizing, staffing, directing, and controlling; a survey approach to quantification in organizational life; current trends in management; possible future developments in organization and administration. (F, Sp, Su)

COURSES IN MANAGEMENT (MGT)

3013 Principles of Organization and Management. Prerequisite: junior standing. An introductory course presenting the basic concepts and practices of management, both private and public. Hrzn. Humanistic, behavioral, and administrative theories. Managerial functions, including planning, organizing, staffing, directing, and controlling; a survey approach to quantification in organizational life; current trends in management; possible future developments in organization and administration. (F, Sp, Su)

COURSES IN ACCOUNTING (ACCT)

2113 Fundamental Financial Accounting. Prerequisite: Business Administration 1001 or concurrent enrollment. Basic principles of financial accounting. Emphasis on the preparation and use of the income statement and balance sheet. Fundamental accounting concepts. Analysis of financial information. Coverage includes the analysis and recording of transactions involving cash, investments, fixed assets, bonds and capital stock as well as closing, adjusting and reversing entries for revenue and expense items. (F, Sp, Su)

2123 Fundamental Managerial Accounting. Prerequisite: 2113. Introduction to managerial accounting, analysis of cost behavior and the use of this knowledge for both short- and long-term decision. An introduction to budgeting and the accumulation of product costs for planning and performance evaluation. Specific coverage includes cost-volume-profit analysis, capital budgeting, allocations, variances from standard costs and the measurement of divisional performance. (F, Sp, Su)

COURSES IN ARCHITECTURE (ARCH)

2243 History of Architecture I. Prerequisite: majors only or permission of instructor. Corequisites: ARCH 2323, ARCH 2354; for Interior Design majors: completion of A HI 2213 and A HI 2223. A theoretical investigation of the development of architectural, political and aesthetic values of diverse Western and non-Western cultures and how these affect the built environment from prehistoric through the Renaissance. This course continues the development of critical writing skills and further develops analytic skills that act to inform design decisions related to studio projects. (F, IV-WC)

2343 History of Architecture II. Prerequisites: ARCH 2213, 2354, 2454. An investigation of the cultural, political, and aesthetic values of diverse Western and non-Western cultures and how these have affected the built environment from the Renaissance through the 19th Century. A continuation of the development of critical writing skills and analytic skills that act to inform design decisions related to studio projects. (Sp)

COURSES IN BUSINESS COMMUNICATION (BC)

2813 Business Writing. Prerequisite: English 1213 or EXPO 1213 or equivalent; COMM 1113 or 2714, and Business Administration 1001. Emphasis on effective business writing, planning, drafting, and using computer software for use in the construction industry. (Sp)

COURSES IN CONSTRUCTION SCIENCE (CNS)

1112 Cultures of Collaborating, Creating and Constructing. Prerequisite: Construction Science major. Introduction to the foundations of the various planning, design, and construction disciplines. Focus on the collaborative process for creating and constructing the built environment. Histories of expertise areas related to the planning, design, and construction of buildings. (F)

1212 Computers in Construction. Introductory course providing students with basic computer application knowledge in the construction environment. Emphasis on strategic processes, and resources necessary for writers in business and professional contexts. Students practice informative and analytical business genres while gaining expertise in research, writing, and revision. (F, Sp, Su)

COURSES IN ECONOMICS (ECON)

1113 Principles of Economics—Macro. Prerequisite: SAT, Take the Placement Test, or, for incoming freshmen direct from high school, satisfactory score on the ACT/SAT. The functioning and current problems of the aggregate economy: determination and analysis of national income, employment, income distribution and price levels; monetary and fiscal policy; and aspects of international interdependence. Laboratory (F, Sp, Su) [III-SS]

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