# GRADUATION CHECKSHEET FOR THE BACHELOR OF SCIENCE IN CONSTRUCTION ENGINEERING AND MANAGEMENT

**College of Engineering**  
The Myers-Lawson School of Construction at Virginia Tech  
For Students Graduating in Calendar Year 2016

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman</strong></td>
<td><strong>Fall</strong></td>
</tr>
<tr>
<td>Chem 1035</td>
<td>Chemistry for Engineers</td>
</tr>
<tr>
<td>Chem 1045</td>
<td>Chemistry for Engineers Lab</td>
</tr>
<tr>
<td>Math 1205</td>
<td>Calculus</td>
</tr>
<tr>
<td>Math 1114</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>Engl 1105</td>
<td>Freshman English</td>
</tr>
<tr>
<td>*EngE 1024</td>
<td>Engr. Exploration</td>
</tr>
<tr>
<td>Elective</td>
<td>Area 6</td>
</tr>
</tbody>
</table>

**Total 15**

<table>
<thead>
<tr>
<th><strong>Sophomore</strong></th>
<th><strong>Fall</strong></th>
<th><strong>Spring</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Phys 2306</td>
<td>Foundations of Physics I</td>
<td>(4)</td>
</tr>
<tr>
<td>Math 2224</td>
<td>Multi-variable Calculus</td>
<td>(3)</td>
</tr>
<tr>
<td>ESM 2104</td>
<td>Statics</td>
<td>(3)</td>
</tr>
<tr>
<td>Geos 2104</td>
<td>Elements of Geology</td>
<td>(3)</td>
</tr>
<tr>
<td>CNST 2104</td>
<td>Intro to CEM</td>
<td>(2)</td>
</tr>
<tr>
<td>EngE 2824</td>
<td>CEE Drawing &amp; CAD</td>
<td>(1)</td>
</tr>
</tbody>
</table>

**Total 16**

<table>
<thead>
<tr>
<th><strong>Junior</strong></th>
<th><strong>Fall</strong></th>
<th><strong>Spring</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 3404</td>
<td>Theory of Structures</td>
<td>(3)</td>
</tr>
<tr>
<td>CEE 3014</td>
<td>Construction Management</td>
<td>(3)</td>
</tr>
<tr>
<td>BC 4014</td>
<td>Building Systems Tech I</td>
<td>(3)</td>
</tr>
<tr>
<td>BC 3064</td>
<td>Building Systems Tech Lab</td>
<td>(2)</td>
</tr>
<tr>
<td>CEE 3804</td>
<td>Computer Applications in CEE</td>
<td>(3)</td>
</tr>
<tr>
<td>CEE 3684</td>
<td>CEE Materials</td>
<td>(3)</td>
</tr>
</tbody>
</table>

**Total 17**

<table>
<thead>
<tr>
<th><strong>Senior</strong></th>
<th><strong>Fall</strong></th>
<th><strong>Spring</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 4024</td>
<td>Constr Control Techniques</td>
<td>(3)</td>
</tr>
<tr>
<td>CEE 3424</td>
<td>Reinforced Concrete Design</td>
<td>(3)</td>
</tr>
<tr>
<td>BC 4444</td>
<td>Construction Practice II</td>
<td>(4)</td>
</tr>
<tr>
<td>ECON 2006</td>
<td>Princ of Economics – Area 3</td>
<td>(3)</td>
</tr>
<tr>
<td>Engl 3764</td>
<td>Technical Writing</td>
<td>(3)</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

**Total 16**

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**Foreign Language Requirement:** Any student who did not complete two years of one foreign language in high school must earn six credits in one language in college-level courses, or equivalent; such credits do not count toward minimum graduation requirements.

**Graduation Requirements:** Each student must complete 133 semester credit hours, as delineated on this checksheet, with a minimum overall GPA of 2.00 and a minimum in-major GPA of 2.00. In-major GPA calculated using all classes with a CEE or BC designation.

**Satisfactory Progress Toward Degree Policy:** Upon the completion of 70 hours, students must have completed CNST2104 and CEE 2814 and have a minimum of a 2.0 in-major and a 2.0 overall GPA as well as credit for MATH 1205, 1206, 1114, 1224; CHEM 1074/1035, 1084/1045; ENGL 1105, 1106; PHYS 2305 and a Min grade of C- or better in ENGE 1024 and ENGE 1104/1114 as required by degree program.

**Requirements to enter CEM:** In order to enter this restricted major, students must have: 1) A competitive GPA of at least 2.0 or higher; 2) A minimum grade of C- or better in ENGE 1024 and ENGE 1104/1114 (or ENGE 1434); 3) Credit for MATH 1205, 1206, 1114, 1224; CHEM 1035/1045; ENGL 1105, 1106; PHYS 2305; 4) complete a Statement of Intent; and, 5) Faculty Interview. Program has an enrollment capacity limit of 40 students in a cohort.

**Prerequisites:** This checksheet contains no hidden prerequisites  
*or EngE 1434

**133 TOTAL CREDITS**
Elective Requirements for the Construction Engineering & Management Degree (2016 Graduates)

**LIBERAL EDUCATION REQUIREMENTS** (Consult University Liberal Education Requirements guide for courses to meet Areas 2 & 6).

Area 1 (Writing & Discourse) – 6 cr.

(1) __________________________
(1) __________________________

Please note: The viEWS requirement is satisfied by the completion of the following required courses: ENGL 3764, CNST 2104, CEE 3434, CEE 3514, CEE 3684, and CEE 4014.

Area 2 (Ideas, cultural traditions, and values) – 6 cr.

(1) __________________________
(1) __________________________

Area 4 (Scientific reasoning and discovery) – 6 cr.
Satisfied by Chem1035, Chem1045, Phys 2305, and Phys 2306

Area 6 (Creativity and aesthetic experience) – 1 cr.

(1) __________________________

**TECHNICAL ELECTIVE (SEE ATTACHED LIST):**
*Technical elective within the CEE Department – Select one from the attached list:*

(1) __________________________

CEE design-project courses – 6 cr.
Satisfied by CEE 3434 and CEE 4014

**BUSINESS/ MANAGEMENT ELECTIVES (SEE ATTACHED LIST)**

Electives within the Colleges of Business or Architecture and Urban Studies – 6 cr.;
Select two from the attached list

(1) __________________________
(2) __________________________

**HUMANITIES & SOCIAL SCIENCE REQUIREMENT:** All BS CEM students must complete 12 credits of humanities & social sciences. Students required to complete 6 credits of Area 2 & 6 credits of Area 3 for the University Liberal Education Requirements will meet this requirement using the Area 2 & 3 courses.
CEM TECHNICAL ELECTIVES (3 credits)
CEE 3274 – Introduction to Land Development Design (C- or better in CEE 2814 & Junior Standing)
CEE 3304- Fluid Mechanics for Civil and Environmental Engineering (pre- C- or better in ESM 2104)
CEE 3604- Introduction to Transportation Engineering (Junior Standing)
CEE 4064 – Design for Hazard Control in Construction
CEE 4514- Methods in Geotechnical Engineering (pre- C – or better in CEE3514)
CEE 4534 – Earth Pressures and Foundation Structures (pre- C- or better in CEE3514)
CEE 4544 – Geotechnics for Land Development (pre-CEE3514)
CEE 4974 – Undergraduate Independent Study (minimum overall and in-major QCAs of 2.0)
CEE 4994 – Undergraduate Research (minimum overall and in-major QCAs of 2.0)
CNST 4974 – Undergraduate Independent Study (minimum overall and in-major QCAs of 2.0)
CNST 4994 – Undergraduate Research (minimum overall and in-major QCAs of 2.0)
BC 4974 – Undergraduate Independent Study (minimum overall and in-major QCAs of 2.0)
BC 4994 – Undergraduate Research (minimum overall and in-major QCAs of 2.0)
SBIO 4314 – Design of Wood Structures

CEM BUSINESS ELECTIVES (6 credits)
ACIS 2115 – Principles of Accounting
ACIS 2116 – Principles of Accounting
BIT 2405 – Quantitative Methods (pre-ACIS 1504, Math 1525, & Math 1526)
BIT 2406 – Quantitative Methods (pre-BIT 2405)
BIT 3414 – Operations and Supply Chain Management (pre-BIT 2406)
ECON 3104 – Microeconomic Theory (pre-see undergraduate catalog)
ECON 3214 – Money and Banking (pre ECON 2005 or 2023H) & 2006
ECON 4074 – Labor Economics (pre – (ECON 2005 or 2116 or 2126 or 2025H) & ECON 3254)
ECON 4084 – Industry Structure (pre-ECON 3104 or 4924)
ECON 4124 – Growth and Development (pre-ECON 2006& (2025H or 3104)
ECON 4704 – Urban Economy (pre- ECON 2005)
ECON 4924 – Managerial Economics (pre-ECON 2005 and MATH 1526 or 1206 or 2015)
FIN 3055 – Legal Environment of Business
FIN 3104 – Introduction to Finance (pre- ACIS 2004 or 2115)
MG 3304 – Management Theory and Leadership Practice (Junior Standing)
MG 3324 – Organization Behavior (pre MGT 3304)
MG 3334 – Introduction to Human Resource Management (Junior Standing co-MGT 3304)
MG 4334 – Ethical Leadership (pre-MGT 3304)
MKTG 3104 – Marketing Management (Junior Standing)
UAP 4714 – Economics and Financing of State and Local Governments (pre- B- in UAP 3024, C or better in ECON 2005 & 2006 – only offered in fall semesters)
UAP 4724 – Capital Budgeting & Strategic Facility Planning
UAP 2004 – Principles of Real Estate
UAP 4754 – Legal Foundations of Planning
To: Engineering Undergraduates  
From: Bevlee Watford, Associate Dean, Academic Affairs
Subject: Non-degree credit

Please be aware that not all courses at Virginia Tech will count toward an undergraduate engineering degree. Such courses may not be used to satisfy any graduation requirement, including free electives. Listed below are courses which do not count toward an undergraduate engineering degree. This list is not exhaustive, so if you have any questions, you should check with your engineering department about additional non-credit courses. This list is updated periodically. Be sure to review the list each semester at: http://www.eng.vt.edu/overview/acad_affairs_whattowd.php

CS 1004 (Computer Literacy), (no credit awarded to CS majors for these courses: CS 4004, 4014)
UNIV or EDCI 1004 (College Success Strategies), 1014 (Cadet Success Seminar), 1704 (First Year Seminar Course), 2004 (Exploring Careers), 4874 (Independent Study), 2864 (Special Study: Any Subtitle), 4864 (Special Study: Any Subtitle)
EF/ENGE 2984 (Engineering Success Seminar)
ENGL 1004, 0014 (English as a Second Language)
ENGR 3004 Mentoring Seminar; ENGR 4984 (CEED Team Leader Seminar)
ESM 2984 (ESP Stats, Prof Dev Sem for ESM), ESM 4404 (Fundamentals of Professional Engineering)
FCD 2984 (Success Project)
HD 2984 (Healthy Living, Success Project)
MaSc 1024, 1025, 1026 (Mathematics, A Liberal Arts Approach), 1034 (Statistics, A Liberal Arts Approach), 1044 (Computer Science, A Liberal Arts Approach)
MATH 1504 (PreCalc), 2984 (Emerging Scholar), 1015 (Elem Calc with Trig. CS majors may receive 1015 credit if taken before 1205), 1016 (Elementary Calc with Trig), 1525-1526 (Elementary Calc with Matrices), 2015-2016 (Elementary Calc with Trig II)
ME 4984 (SAE Automotive Essentials)
PHYS 2205-2206 (General Physics, not Calc-based)
PSYC 2984 (First Year Experience, Athletic Transitions)

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