Agenda

• Task Force Background
• Definition of Surveying
• Public Outreach
• Surveying Education & Experience
• Updates
• Questions
Survey Licensure Task Force

• Joint initiative with the State Board of Registration for Professional Engineers and Professional Surveyors and the Professional Land Surveyors of Ohio.

• The focus is to identify areas within the surveying profession that can be improved in terms of its definition, public knowledge and perception, and the education of future surveyors, with the ultimate goal of increasing the number of qualified licensed surveyors in Ohio.

• Our goal is not to lower the bar for the pathway to surveying licensure but rather to broaden it.
Task Force Subcommittees

• Definition of Surveying

• Public Outreach

• Surveying Education and Experience
Survey Licensure Task Force Members

• Definition of Surveying
  • Charlie Harkness, P.S. (Chair)
  • Ray Foos, P.S.
  • Burt Dawson, P.E., P.S.
  • Dean Ringle, P.E., P.S.
  • Dave Cox, P.E. & P.S.
Survey Licensure Task Force Members

• Public Outreach
  • Melinda Gilpin (Chair)
  • Stephen McCall, P.S.
  • Pat Ginnetti, P.E., P.S.
  • Brian Bingham, P.S.
Survey Licensure Task Force Members

- **Surveying Education & Experience**
  - Jon Link, P.S. (Co-Chair)
  - Mike Pniewski, P.E., P.S. (Co-Chair)
  - Charlie Harkness, P.S.
  - John Greenhalge
  - Dean Ringle, P.E., P.S.
Definition of Surveying

• Should the Board expand the definition of surveying to include other aspects of surveying?

• What should be included in the definition of surveying that’s currently missing?
Definition of Surveying

4733.01 Professional engineer and professional surveyor definitions.
(F) "Professional surveyor" means a person who is registered as a professional surveyor under this chapter.

NCEES 2018 Model Law

“Professional Surveyor,” as used in this Act, shall mean an individual who has been duly licensed as a professional surveyor by the board established under this Act and who is a professional specialist in the technique of measuring land, educated in the basic principles of mathematics, the related physical and applied sciences, and the relevant requirements of law for adequate evidence and all requisite to surveying of real property, and engaged in the practice of surveying as herein defined.
Definition of Surveying

4733.01 Professional engineer and professional surveyor definitions.

(G) "Practice of surveying" means any professional service that requires the application of special knowledge of the principles of mathematics, the related physical and applied sciences, and the relevant requirements of law for the adequate performance of the art of surveying, including, but not limited to, measuring the area or the contours of any portion of the earth's surface, the lengths and directions of the bounding lines, and the contour of the surface, for their correct determination and description and for conveyancing for recording, or for the establishment or re-establishment of land boundaries and the platting of lands and subdivisions; and like measurements and operations involved in the surveying of mines, commonly known as "mine surveying."
Definition of Surveying

NCEES 2018 Model Law

“Practice of Surveying,” as used in this Act, shall mean providing, or offering to provide, professional services using such sciences as mathematics, geodesy, and photogrammetry, and involving both (1) the making of geometric measurements and gathering related information pertaining to the physical or legal features of the earth, improvements on the earth, the space above, on, or below the earth and (2) providing, utilizing, or developing the same into survey products such as graphics, data, maps, plans, reports, descriptions, or projects. Professional services include acts of consultation, investigation, testimony evaluation, expert technical testimony, planning, mapping, assembling, and interpreting gathered measurements and information related to any one or more of the following:
Definition of Surveying

NCEES 2018 Model Law Practice of Surveying

a. Determining by measurement the configuration or contour of the earth’s surface or the position of fixed objects thereon
b. Determining by performing geodetic surveys the size and shape of the earth or the position of any point on the earth
c. Locating, relocating, establishing, reestablishing, or retracing property lines or boundaries of any tract of land, road, right of way, or easement
Definition of Surveying

NCEES 2018 Model Law Practice of Surveying

d. Making any survey for the division, subdivision, or consolidation of any tract(s) of land

e. Locating or laying out alignments, positions, or elevations for the construction of fixed works

f. Determining, by the use of principles of surveying, the position for any survey monument (boundary or nonboundary) or reference point; establishing or replacing any such monument or reference point

g. Creating, preparing, or modifying electronic, computerized, or other data, relative to the performance of the activities in items a–f above
Public Outreach

• How do we increase the public’s understanding of what surveyors do?
• How do we increase interest in the surveying profession?
• How do we increase the number of students enrolled in Ohio’s surveying programs?
• How can we reach out to qualified technicians and two-year graduates to pursue surveying licensure?
• How can we create/improve surveying internships?
Surveying Education & Experience

• Item 1: Should the Board expand the number of majors acceptable to take the surveying exams with additional education like the Civil Engineering graduates? [Ex. Geology, Geography, GIS, Engineering/Construction Technology]

• Item 2: Is 16 semester hours of approved surveying courses enough hours to cover required surveying course work?

• Item 3: Should the Board allow part-time experience?

• If so, how should the Board track part-time experience?

• Item 4: Should some engineering experience be considered towards the surveying experience requirement?

• Item 5: Like the requirement for two years of boundary surveying experience, should the Board require experience in other areas [GIS, topography, photogrammetry, mapping]?
Surveying Education & Experience

• Item 1: Should the Board expand the number of majors acceptable to take the surveying exams with additional education like the Civil Engineering graduates? [Ex. Geology, Geography, GIS, Engineering/Construction Technology]

• The Task Force findings is to allowing all 4 year B.A. & B.S. degrees and use Item 2 to put everyone on the same plane.
Surveying Education & Experience

• Item 2: Is 16 semester hours of approved surveying courses enough hours to cover required surveying course work?

• Current B.S. Civil Engineering degree requirements: 16 semesters of surveying courses from 5 of 6 fields (Boundary, Control, Historic Development of Ohio, Route or Construction, Ohio Min Standards and Laws and Ethics, Upper-Level surveying courses)

• Task Force findings adopting a modified version of the NCEES surveying education requirements for all degrees including ABET B.S. Civil Engineering degrees.
Surveying Education & Experience

- NCEES Surveying education requirements
  A. 18 college semester credit hours of mathematics and basic sciences.
    1. A minimum of 12 credits in mathematics must be beyond basic mathematics, but the credits include college algebra or higher mathematics.
    2. A minimum of 6 credits must be in basic sciences. Computer skills and/or programming courses may not be used to satisfy mathematics or basic science requirements

- Most B.S. degrees would satisfy these requirement and some B.A. degrees
Surveying Education & Experience

• NCEES Surveying education requirements

B. 16 college semester credit hours in a general education component that complements the technical content of the curriculum. No more than 6 credit hours of languages other than English or other than the applicant’s native language are acceptable for credit.

• All (B.S. & B.A.) degrees would satisfy this requirement
• NCEES Surveying education requirements

C. 30 college semester credit hours of surveying science and surveying practice courses shall be taught by qualified surveying faculty. Examples of surveying courses are basic surveying, route surveying, geodesy, geographic information systems, land development design and planning, global positioning systems, photogrammetry, mapping, legal principles of land surveying, boundary law, professional surveying and mapping, and remote sensing. Graduate-level surveying courses can be included to fulfill curricular requirements in this area.
Surveying Education & Experience

• *Task Force findings we are keeping the 30 credit hours of Surveying courses but limit the GIS courses to a max of 6 hrs.*

• *These education requirements would put the four year degrees/pathways on the same level as far as requirements.*
Surveying Education & Experience

• Item 3: Should the Board allow part-time experience?
• *Task Force findings is to allow part-time experience to be accepted.*
• *It needs to be documented experience/employment.*

• If so, how should the Board track part-time experience?
• *We are looking into other states that currently allow part-time experience and even Canada as a guideline to follow.*
Surveying Education & Experience

• Item 4: Should some engineering experience be considered towards the surveying experience requirement?

• Task Force findings is to allow up to 2 years to overlapping Engineering and Surveying experience so it could only take a minimum of 6 years to become duel registered versus the 8 years now?

• There’s already other states (Kentucky) allowing an overlap in the experience.

• We are looking at the guidelines of the other states
Surveying Education & Experience

• Item 5: Like the requirement for two years of boundary surveying experience, should the Board require experience in other areas [GIS, topography, photogrammetry, mapping]?

• The Task Force was in agreement that we should not require any addition special experience because not every company performs topo, photogrammetry or mapping.
Task Force Update

• December 03, 2019 Ohio State Board of Registration for Professional Engineers and Surveyors Board Meeting
  • Task Force findings presented to the Board
  • Voted to Accept the following
    • Definition of Surveying as presented
    • Education open to all B.A. & B.S. Degrees (NCEES Requirements)
      • 30 hours of Board Approved Surveying Courses
      • Max of 6 hours GIS Course work
      • 12 hours of Math College Algebra and higher
Task Force Update

• December 03, 2019 Ohio State Board of Registration for Professional Engineers and Surveyors Board Meeting
  • Task Force findings presented to the Board
  • Voted to Accept the following
    • Allow Part-Time Experience (Min hours)
      • Properly Documented Experience
    • Allow Up 2 years Overlap for Duel
      • Work with Task Force to Provide Guidelines
Task Force Update

• December 03, 2019 Ohio State Board of Registration for Professional Engineers and Surveyors Board Meeting
  • Task Force findings presented to the Board
  • Voted not to Accept the following
    • 30 hours for ABET B.S. Civil Engineering Degree
    • Keeping the 16 hours of Board Approved Courses
Law vs. Rule Changes

Law Changes

• Definition of Surveying
• Needs to find Sponsor for Legislation
• Find a Bill to Attach Changes
• Table until Later Time
Law vs. Rule Changes

Rule Changes

• The Board has a Rules Review scheduled to be completed in May 2020
• Adding Third option for Education path
  • Allowing all B.S. & B.A. Degrees (NCEES Modified Requirements)
• Allowing Part-Time Experience
• Allowing 2 years Overlap for Duels (6-8 years)
Rule Changes

• How soon could the Rule Changes go into affect?

• May 2020 Rules Review to be Completed

• Earliest for New Rules Changes Potentially Summer 2020
Surveying Education & Experience

• Youngstown State B.S.A.S. Civil & Construction Engineering Technology Degree
  • https://catalog.ysu.edu/undergraduate/colleges-programs/college-science-technology-engineering-mathematics/department-engineering-technology/bs-civil-construction-engineering-technology/#fouryearplantext
# YSU Civil & Construction Engineering Technology Degree

## YEAR 1

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>COURSE CODE</th>
<th>COURSE NAME</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALL</td>
<td>FNTC 1501</td>
<td>Introduction to Engineering Technology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>FNTC 1505</td>
<td>Engineering Technology Concepts</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CCT 1502</td>
<td>CAD Technology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CCT 1504</td>
<td>Drafting and Plan Reading</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MATH 1513</td>
<td>Algebra and Transcendental Functions</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>ENGL 1550</td>
<td>Writing 1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Semester Hours</td>
<td>18</td>
</tr>
<tr>
<td>SPRING</td>
<td>MFT 1515</td>
<td>Mechanics 1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CCT 2604</td>
<td>Properties and Strength of Materials</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CCT 2614L</td>
<td>Materials Laboratory 1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>PHYS 1501</td>
<td>Fundamentals of Physics 1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENGL 1561</td>
<td>Writing 2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Semester Hours</td>
<td>18</td>
</tr>
</tbody>
</table>

## YEAR 2

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>COURSE CODE</th>
<th>COURSE NAME</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALL</td>
<td>CEE 2610</td>
<td>Surveying and Surveying Laboratory</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>&amp; 2610L</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MFT 2616</td>
<td>Mechanics 2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CCT 3709</td>
<td>Structural Analysis 1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CCT 2620</td>
<td>Transportation Technology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHIL 2626</td>
<td>Engineering Ethics (Arts &amp; Humanities GER)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CCT 2607</td>
<td>Civil 3D</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Semester Hours</td>
<td>19</td>
</tr>
<tr>
<td>SPRING</td>
<td>MATH 1670</td>
<td>Applied Calculus 1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CEE 2674</td>
<td>Hydraulics and Land Development</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CEE 2706</td>
<td>Structural Design</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CEE 2711</td>
<td>Specifications and Estimating</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CMST 1545</td>
<td>Communication Foundations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Semester Hours</td>
<td>17</td>
</tr>
</tbody>
</table>
YSU Civil & Construction Engineering Technology Degree

<table>
<thead>
<tr>
<th>YEAR 3</th>
<th>FALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Elective</td>
<td>3</td>
</tr>
<tr>
<td>CCET 3205</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2670</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 1515</td>
<td>4</td>
</tr>
<tr>
<td>CHFM 1515L</td>
<td>0</td>
</tr>
<tr>
<td>EET 3726 &lt;br&gt; &amp; 3726L</td>
<td>4</td>
</tr>
<tr>
<td>Electromechanical Systems &lt;br&gt; and Electromechanical Systems Lab</td>
<td>19</td>
</tr>
<tr>
<td>SPRING</td>
<td></td>
</tr>
<tr>
<td>Design Elective</td>
<td>3</td>
</tr>
<tr>
<td>CCET 3735</td>
<td>3</td>
</tr>
<tr>
<td>CCET 3740</td>
<td>3</td>
</tr>
<tr>
<td>CCET 3703 &lt;br&gt; &amp; 3703L</td>
<td>3</td>
</tr>
<tr>
<td>Building Information Modeling &lt;br&gt; and Building Information Modeling Laboratory</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YEAR 4</th>
<th>FALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Elective</td>
<td>3</td>
</tr>
<tr>
<td>CCET 3714</td>
<td>3</td>
</tr>
<tr>
<td>&amp; 3714L</td>
<td>3</td>
</tr>
<tr>
<td>Soil Mechanics &lt;br&gt; and Soil Mechanics Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>CCET Elective</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>Social &amp; Personal Awareness GER</td>
<td>3</td>
</tr>
<tr>
<td>Social &amp; Personal Awareness GER</td>
<td>3</td>
</tr>
<tr>
<td>Social Science GER</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities GER</td>
<td>3</td>
</tr>
<tr>
<td>Semester Hours</td>
<td>15</td>
</tr>
<tr>
<td>Total Semester Hours</td>
<td>156</td>
</tr>
</tbody>
</table>

| SPRING |
| CCET 4864 | 3 |
| Civil/Structural Facilities Design | 3 |
| EET 4810 | 3 |
| Electrical System Design | 3 |
| Social & Personal Awareness GER | 3 |
| Social Science GER | 3 |
| Arts & Humanities GER | 3 |
| Semester Hours | 15 |
| Total Semester Hours | 156 |
YSU Civil & Construction Engineering Technology Degree

NCEES Requirements

• General Education (16 hrs)
• Math (12 hrs)
• Science (6 hrs)
• Surveying (30 hrs)

YSU Civil & Construction Eng Tech

• General Education  18 hrs ★
• Math 14 hrs ★
• Science 8 hrs ★
• Surveying 4 (7 Technical Elective)
• Needs 23-26 hrs Surveying Courses
Questions?
Points of Contacts

• John Greenhalge Executive Director of Professional Engineers & Surveyors
  • john.greenhalge@pes.ohio.gov

• Paula Hammer Executive Director of Profession Land Surveyors of Ohio
  • director@ohiosurveyor.org