Notification of Request for Authorization under the Degree-Granting Institutions Act

Date posted: July 13, 2012

Institution: Washington Engineering Institute

Nature of request: Initial authorization to offer two degree programs at its Bellingham campus

Proposed programs:

Associate of Applied Science in Civil Engineering Technology
Baccalaureate of Science in Civil Engineering Technology

Washington site where the programs will be offered:

Washington Engineering Institute
1301 Fraser Street, Suite A3
Bellingham, WA 98229

Background:

Washington Engineering Institute is a private institution that has offered seven certificate programs, primarily in the area of engineering technology, since 2009 as licensed through the Workforce Training and Education Coordinating Board. It would now like to begin offering two degree programs in civil engineering technology.

Nature of the review:

Prior to granting initial authorization to offer degree programs in Washington State, the Washington Student Achievement Council/Degree Authorization reviews elements such as institutional infrastructure, financial solvency, administrative staff qualifications, program outcomes, course requirements, method of course delivery, faculty credentials, and student services.

A curriculum review of the two programs was conducted by subject matter expert, Dr. Zella Kahn-Jetter, School of Engineering, St. Martin's University. The institute implemented a number of recommendations made by Dr. Kahn-Jetter.

The programs to be offered by Washington Engineering Institute appear to meet the requirements of the Degree-Granting Institutions Act.

Information on the two programs can be found at the end of this notice.

Timeline:

The Council will accept comments on this application until July 27, 2012.

Any individuals with knowledge that may indicate the institution and/or the program does not meet the authorization requirements of WAC 250-61 are requested to submit comments to: Degree Authorization.

If you would like to know more about the current law and regulations that govern the program, they can be found at the following links: the statute is RCW 28B.85 and the regulation is WAC 250-61.

Program Title:
Associate of Applied Science in Civil Engineering Technology

Program Description:
Graduates of the proposed Associates of Applied Science in Civil Engineering Technology degree program will have the skills to work as a civil engineering technician. Typical entry level job titles for this program include: CAAD drafter, CADD designer, civil engineering technician, mapping technician, surveying technician, DTM modeling technician, public works permit technician, stormwater/erosion control technician, and construction materials inspector/tester.

Specific Program Outcomes:
1. Productive ability to utilize modern surveying tools and methods
2. Productive ability to work in teams for field measurement, office design, and construction staking
3. Prepare, analyze, interpret, and creatively design in 2D drawings
4. Prepare, analyze, interpret, and creatively design in 3D drawings
5. Plan and prepare construction drawings under the direction of a Professional Engineer
6. Prepare storm and water system reports under the direction of a Professional Engineer
7. Ability to communicate complex design concepts effectively through technical documents, logical spreadsheets models, and technical presentations
8. Prepare utilities and roadway materials estimates

Number of Credits: 90 quarter credits

General Education Courses: (12 credits total)
ENGL 205 Technical Writing....3
MATH 111 Precalculus I – Algebra....5
MATH 112 Precalculus II – Trigonometry....4
Core courses: (78 credits)
CADD 111 Civil/Survey CAD Level I....4
CADD 112 Civil/Survey CAD Level II....4
CADD 211 Civil 3D Level I....4
CADD 212 Civil 3D Level II....4
CADD 213 Civil 3D Advanced Grading....3
COMP 151 Documents, Presentations & Spreadsheets....3
ENGR 101 Civil/Survey Industry Introduction....3
ENGR 201 Roadway Geometry and Design....4
ENGR 202 Storm Design and Modeling....4
ENGR 203 Water System Design and Modeling....4
GIS 121 ArcGIS Level 1....3
HCON 121 Heavy Construction Estimation....5
HCON 222 Earthmoving Fundamentals....3
PLAN 121 Zoning, Permitting, and Government Agencies....3
SURV 131 Traditional Surveying Equipment with Lab....5
SURV 132 Robotics and GPS Surveying Equipment with Lab....6
SURV 234 Construction Surveying Lab....4

PHYS 121 Physics I with Lab 4
ENGR 221 Statics for Building Construction 4
ENGR 222 Civil Engineering Materials Lab 4

Program Title:
Baccalaureate of Science in Civil Engineering Technology

Program Description:
"Graduates of the proposed Baccalaureate of Science in Civil Engineering Technology degree program will have the skills to work as a civil engineer designer (aka technologies). Typical job titles for this program include; civil engineering designer, construction engineer, construction estimator/planner/scheduler, engineering manager, and development engineers.
This program includes all of the hands-on technical job skills coursework of the associates degree program, along with (2) full years of calculus level mathematics, statics, dynamics, chemistry, engineering physics curriculum that is critical to pass the Fundamentals of Engineering (FE) licensing exam.

Specific Program Outcomes:
All eight associate degree outcomes plus:
1. Develop critical thinking and a logical thought process through mathematics and engineering physics calculations
2. Develop a structure engineering thought process
3. Perform economic analysis and cost estimating
4. Ability to prepare complex technical writing documents
5. Demonstrate engineering professionalism, ethics, quality performance, and professional development.

Number of Credits: 180 quarter credits total, of which 90 are required for admission

Admission Requirements:
An Associate of Applied Science in Civil Engineering Technology degree; interview with admissions department

General Education Requirements: (35 credits)
CHEM 161 General Chemistry with Lab I* 5
CHEM 162 General Chemistry with Lab II* 5
ECON 301 Macro Economics 5
ENGL 301 Applied English Composition I 5
ENGL 302 Applied Technical Writing 5
MATH 301 Calculus I with Engineering Physics Applications 5
MATH 302 Calculus II with Engineering Physics Applications 5

*These courses are not offered by the institute, but are available at Whatcom Community College, Skagit Valley Community College, and Everett Community College.

Core courses: (55 credits)

COMP 301 C for Engineers 5
ENGR 401 Applied Statics 5
ENGR 402 Applied Dynamics 5
ENGR 403 Applied Mechanics of Materials 5
MATH 303 Calculus III with Engineering Physics Applications 5
MATH 401 Calculus IV with Engineering Applications 5
MATH 402 Linear Algebra with Engineering Applications 5
MATH 403 Differential Equations with Engineering Applications 5
Technical Elective I* 5
Technical Elective II* 5
Technical Elective III 5

*Students may take any of the following three routes for electives:

1. Structures:

ENGR 441 Concrete Design 5
ENGR 442 Steel Design 5
ENGR 443 Structural Analysis 5

2. Construction Engineering:

HCON 421 Contracts and Construction Law 5
HCON 422 Construction Project Controls 5
HCON 423 Construction Resource Accounting 5

3. Geotechnical Engineering:

ENGR 451 Soil Mechanics 5
ENGR 452 Foundation Engineering 5
ENGR 453 Earth Retaining Structures 5