

COMMISSION FOR HIGHER EDUCATION

Friday, March 9, 2012

DECISION ITEM A-1:

Bachelor of Science in Civil Engineering Technology To Be Offered by Indiana State University at Terre Haute

Staff Recommendation

That the Commission for Higher Education approve the Bachelor of Science (B.S.) in Civil Engineering Technology to be offered by Indiana State University at Terre Haute, in accordance with the background discussion in this agenda item and the *Abstract*, February 24, 2012.

Background

While the original proposal for this program included a curriculum that required 127 credit hours of coursework, Indiana State has submitted a revised curriculum that now requires 120 credit hours. However, this revised curriculum has not yet been approved by the Board of Trustees. Hence, the recommendation to approve this program is made with the understanding that the ISU Board will approve the revised curriculum. The University has indicated that the revised 120-hour curriculum should not jeopardize its desire to achieve accreditation for the program by ABET (formerly known as the Accreditation Board for Engineering and Technology).

Indiana presently has no ABET-accredited baccalaureate programs in Civil Engineering Technology. The proposed program is intended to produce graduates who can analyze and design systems, specify project methods and materials, perform cost estimates and analyses, and manage technical activities in support of civil engineering projects. While graduates of civil engineering programs can perform these duties, there are also positions in the workforce that call for these skills but do not require graduates of civil engineering programs. Data from the Indiana Department of Workforce Development indicates the following projected increases in occupational categories, for which graduates of the program will be qualified:

Occupation	Number of Jobs		Employment Increase 2008-2018 (%)	Job Openings 2008-2018
	2008	2018		
Civil Engineers	3,232	3,964	22.6	1,278
Environmental Engineers	587	780	32.9	315
Civil Engineering Technicians	710	851	19.9	275
Architectural and Civil Drafters	1,922	2,073	7.9	564
Surveyors	1,136	1,297	14.2	451

Among other potential employers, the Indiana Department of Transportation has voiced strong support for approval of the program.

The University has developed a statewide articulation agreement with the Ivy Tech for the College's A.S. in Design Technology (Construction Engineering concentration).

Supporting Documents

- (1) *Abstract – Bachelor of Science in Civil Engineering Technology To Be Offered by Indiana State University at Terre Haute, February 24, 2012*
- (2) *New Academic Degree Program Proposal Summary – B.S. in Civil Engineering Technology, February 24, 2012*

Abstract

Bachelor of Science in Civil Engineering Technology
To Be Offered by
Indiana State University at Terre Haute

February 24, 2012

Objectives: To prepare graduates with the technical and managerial skills necessary to enter careers in the planning, design, construction, operation, or maintenance of the built environment and global infrastructure.

Clientele to be Served: High school graduates who want to pursue a career in the area of civil engineering; two-year community college graduates; current technology students pursuing a construction management degree; students currently enrolled in other programs or those undecided about majors, who desire or may desire a career in the area of civil engineering technology; individuals currently employed in related positions who desire to further their education; out-of-state and international students.

Curriculum: A total of 120 semester credit hours are required to complete the program, distributed as follows:

General Education (47 credit hours)

- Fundamentals of Writing (3)
- Introduction to Speech (3)
- Introduction to Speech Communications (3)
- Freshman Writing II (3)
- Social or Behavioral Sciences (3)
- Historical Studies (3)
- Global Perspectives and Cultural Diversity (3)
- Technical Writing (3)
- Foreign Language course (3)
- Literary Studies course (3)
- Fine and Performing Arts (3)
- Ethics and Social Responsibility (3)
- Fitness for Life (2)
- Upper Division Integrative Electives (9)

Core Courses (53 credit hours)

- Introduction to Technical Graphics with CAD (3)
- Introduction to Engineering and Technology (2)
- Applied Statics (3)
- Engineering Analysis (3)
- Fluid Power Technology (3)
- Economic Analysis for Engineering and Technology (3)
- Strength of Materials (3)
- Senior Project in Industrial Technology (3)
- CAD-Based Applications in Civil Engineering Technology and Surveying (3)
- Structural Analysis and Reinforced Concrete Design (3)

- Highway Design (3)
- Waste Water System Design (3)
- Construction Materials, Methods, and Equipment (3)
- Construction Contract Documents (3)
- Soil Analysis and Testing (3)
- Plane Surveying (3)
- Geographic Information Systems: Applications (3)
- Introduction to Hydrology (3)

Science with Laboratory (8 credits)

- Earth Science/Laboratory (4)
- General Physics/Laboratory (4)

Mathematics (9 credits)

- College Algebra (3) or Graphic Analysis (3)
- Analytic Geometry and Linear Algebra for Engineers (3)
- Fundamental and Applications of Calculus (3)

Electives (3 credits)

3 credit hours from:

- Construction Safety (3)
- Construction Quality Control and Assurance (3)
- Thermo Systems (3)
- Cooperative Industrial Practice (3)
- Quality Systems and Tools (3)
- Research and Development of Technology (3)
- Workplace Law for the Technical Manager (3)
- Introduction to Risk and Insurance (3)
- Other course(s) approved by the advisor

Employment Possibilities: Graduates will be able to seek employment in a wide range of civil engineering specialties including bridge and highway design, construction management, geotechnical engineering, hydraulic systems design, land development, pollution control, and structural design. Employment opportunities will exist with private consulting firms, design/construction businesses, and government agencies, and local municipality planning and engineering agencies.

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

February 24, 2012

I. Prepared by Institution

Institution/Location: Indiana State University to be offered at Terre Haute

Program: B.S. in Civil Engineering Technology

	Year 1 FY2012	Year 2 FY2013	Year 3 FY2014	Year 4 FY2015	Year 5 FY2016
Enrollment Projections (Headcount)					
Full-Time	10	18	30	46	70
Part-Time	4	6	10	20	30
Total	14	24	40	66	100
Enrollment Projections (FTE)					
Full-Time	10	18	30	46	70
Part-Time	4	6	10	12	15
Total	14	24	40	58	85
Degree Completions Projection	0	0	2	10	15
New State Funds Requested (Actual) *	-0-	-0-	-0-	-0-	-0-
New State Funds Requested (Increases) *	-0-	-0-	-0-	-0-	-0-

II. Prepared by CHE

New State Funds To Be Considered For Recommendation (Actual) *	-0-	-0-	-0-	-0-	-0-
New State Funds To Be Considered For Recommendation (Increases) *	-0-	-0-	-0-	-0-	-0-

CHE Code: 11-20

Campus Code: 9563

County: Vigo

Degree Level: Bachelor's

CIP Code: Federal – 150201; State – 150201

* Excludes new state dollars that may be provided through enrollment change funding.