

COMMISSION FOR HIGHER EDUCATION

Friday, September 11, 2009

DECISION ITEM A-4:

Technical Certificate and Associate of Applied Science in Manufacturing Production and Operations To Be Offered by Ivy Tech Community College of Indiana Statewide via Distance Education Technology

Staff Recommendation

That the Commission for Higher Education approve the Technical Certificate (T.C.) and Associate of Applied Science (A.A.S.) in Manufacturing Production and Operations to be offered by Ivy Tech Community College of Indiana Statewide via Distance Education Technology, in accordance with the background discussion in this agenda item and the *Abstract*, August 28, 2009; and

That the Commission recommend no new state funds, in accordance with the supporting document, *New Academic Degree Program Proposal Summary*, August 28, 2009.

Background

Ivy Tech Community College currently offers, in all 14 regions, Technical Certificate and Associate of Applied Science programs in two areas related to manufacturing: Industrial Technology and Advanced Manufacturing. In Fall 2009, these programs enrolled a total of 3,045 headcount or 1,831 FTE students.

The Industrial Technology program is geared toward developing foundational skills for use in manufacturing environments with stable product lines. By contrast, the Advanced Manufacturing program prepares students to function in manufacturing environments characterized by implementation of quality systems, lean concepts, and production change requirements – all of which call for workers with advanced skill levels and the ability to work in team settings with production engineers. The proposed Manufacturing Production and Operations program occupies a middle ground between these two programs.

More specifically, the Manufacturing Production and Operations program is focused on preparing workers who set up and operate machines, especially those in computer-controlled networks, which allow operators to tend a number of machines simultaneously, and those that employ robots to load and unload parts from machines. There is some curricular overlap between the Industrial Technology and Advanced

Manufacturing programs. Seven of the 14 new courses required for the Manufacturing Production and Operations program can also count toward meeting the degree requirements of the Industrial Technology and Advanced Manufacturing programs. The other seven new courses have been developed to address the unique objectives of the Manufacturing Production and Operations program.

While manufacturing jobs will likely decline in Indiana, the manufacturing industry will continue to be important to the state's economy and those jobs that remain will require higher skill levels appropriate to more automated and higher productivity companies. The proposed program is intended to provide replacements for the many Baby Boomers in manufacturing positions, who are expected to retire over the next decade. Students who already have some experience working with machines, but need to upgrade their skills to stay competitive, will likely constitute the clientele for this program.

The College has proposed this new program only as a distance education option, and at this point the College has no plans to deliver the program in a traditional classroom setting. While this is unusual, it is not unprecedented and is consistent with the Commission's distance education policy. Another notable feature of the proposed program is the use of instructional material developed by an Indiana-based company, Oxygen, whose software will support delivery of most of the new courses. The partnership with Oxygen will enable the College to deliver all of the new coursework over the next two years, beginning in January 2010.

The associate degree program is proposed as an Associate of Applied Science program because its primary objective is workforce development, as opposed to transfer. There may be opportunities further down the line to develop transfer options for students pursuing an associate degree.

Supporting Documents

- (1) *Abstract – Technical Certificate and Associate of Applied Science in Manufacturing Production and Operations To Be Offered by Ivy Tech Community College of Indiana Statewide via Distance Education Technology, August 28, 2009.*
- (2) *New Academic Degree Program Proposal Summary – T.C./A.A.S. in Manufacturing Production and Operations, August 28, 2009.*

Abstract

Technical Certificate and Associate of Applied Science in
Manufacturing Production and Operations
To Be Offered by
Ivy Tech Community College of Indiana
Statewide via Distance Education Technology

August 28, 2009

Objectives: To address needs for skilled production operators who can function as fully proficient manufacturing system employees in manufacturing environments. Graduates will be skilled in gauging and inspection equipment, CNC machine operations, metrology, tooling, quality systems, inspection techniques, lean manufacturing, and automation.

Clientele to be Served: High school graduates wishing to continue their education, individuals wishing to re-enter the workforce with new skills, currently employed people wishing to continue or supplement their education for the purpose of career advancement and academic enrichment, and individuals already engaged in a manufacturing industry who are looking to upgrade their current position or move into new positions with their current employer or new employers.

Curriculum: A total of 31 semester credit hours are required to complete the Technical Certificate program (identified by an asterisk), and 61–64 semester credit hours are required to complete the Associate of Applied Science program, distributed as follows:

General Education (TC – 3-4 credit hours; AAS – 19-22 credit hours)

- Fundamentals of Public Speaking (3) **or**
- Introduction to Interpersonal Communication (3)

- English Composition (3)*
- Life Skills Elective (1)*
- Mathematics Elective
- Science Elective (3-4)
- Humanities/Social/Behavioral Science Elective (6-8)*

Professional/Technical Coursework (TC – 24 credit hours; AAS – 42 credit hours)

- Introduction to Plant Floor & CNC Principles (3)*
- Shop Mathematics (3)*
- Introduction to Print Reading (3)*
- Manufacturing Automation (3)*
- Introduction to Workplace and Safety (3)*
- CNC Operations (3)*
- Metrology (3)*
- Quality Control Concepts and Techniques I (3)*
- Lean Manufacturing (3)
- Production Technology (3)
- Manufacturing Metals (3)
- Production Machine Tooling (3)

- Geometric Dimensioning and Tolerancing (3)
- Advanced Lean Manufacturing (3)

Employment Possibilities: The program will prepare graduates for a number of operating, production , and first-line supervisory positions within manufacturing industries.

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

August 28, 2009

I. Prepared by Institution

Institution/Location: Ivy Tech Community College of Indiana to be offered statewide via distance education technology

Program: T.C. in Manufacturing Production and Operations

	Year 1 FY2010	Year 2 FY2011	Year 3 FY2012	Year 4 FY2013	Year 5 FY2014
Enrollment Projections (Headcount)					
Full-Time	20	32	39	41	41
Part-Time	55	88	106	112	112
Total	75	120	145	153	153
Enrollment Projections (FTE)					
Full-Time	20	32	39	41	41
Part-Time	28	41	50	53	53
Total	48	73	89	94	94
Degree Completions Projection	0	2	18	24	36
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: 09-28

Campus Code: 9917

County: All 92 counties

Degree Level: 02

CIP Code: Federal – 150699; State – 150699

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

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

August 28, 2009

I. Prepared by Institution

Institution/Location: Ivy Tech Community College of Indiana to be offered statewide via distance education technology

Program: Associate of Applied Science in Manufacturing Production and Operations

	Year 1 FY2010	Year 2 FY2011	Year 3 FY2012	Year 4 FY2013	Year 5 FY2014
Enrollment Projections (Headcount)					
Full-Time	20	32	39	41	41
Part-Time	55	88	106	112	112
Total	75	120	145	153	153
Enrollment Projections (FTE)					
Full-Time	20	32	39	41	41
Part-Time	28	41	50	53	53
Total	48	73	89	94	94
Degree Completions Projection	0	16	18	24	36
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: 09-28

Campus Code: 9917

County: All 92 counties

Degree Level: 03

CIP Code: Federal – 150699; State – 150699

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