How Innovative Programs Can Allow Students Opportunities to Continue Past the AAS

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WASTC Winter ICT Educators' Conference – January 2019

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Planning to Better Meet the Needs of the Cybersecurity Workforce in North Texas

Background – Texas Governor Signs Senate Bill

On June 12, 2017

Texas Gov. Greg Abbott signed Senate Bill 2118 which allows the Texas Higher Education Coordinating Board to authorize certain public junior colleges to offer baccalaureate degree programs in the fields of applied science, applied technology and nursing.

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Key Points

- Does not alter the existing mission(s) of the community colleges
- Focuses on applied programs and nursing to meet well-documented workforce need, not bachelor's degrees in general
- Requires employer support and strong involvement in the efforts
- Requires thoughtful consideration of what curriculum is needed to meet workforce demand
- Requires state approval
- Requires SACS approval

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Background in North Texas Region

- In Spring 2018, there were 3000 open positions, unduplicated, requiring cybersecurity skills
- Annual graduates from ALL community colleges and ALL universities (with cybersecurity emphasis) total only about 600

Result:

Businesses must primarily steal from one another and use H1-B workers

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First Steps - Spring 2018

- Research

- Recruitment of a Cybersecurity BILT focused on the BAT

- Thought-leader meeting to establish general need

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Next Step

- Plan for Knowledge, Skills, and Abilities evaluations by the Cybersecurity BILT
- Used Knowledge Units from CAECD
  - Looked for continuity between AAS in Cybersecurity and possibilities for BAT in Cybersecurity
  - Ultimately asked BILT members via structured, voting process which KU's should be included
  - Goal was to align new BAT curriculum so that it can easily position the college to apply for CAECD
- Held KSA analysis in August, 2018 to determine workforce need

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After the KSA analysis

- Cross-reference to existing AAS curriculum

- Formation of new courses to align with the remainder

- Determination of specific General Education courses to be included

Current Status

- Working on all the details for both the State of Texas and SACS requirement

BAIT – IT Bachelors in Partnership with community colleges

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Historical Background

- Lots of Meetings!!
  - CC faculty
  - Business Leaders
  - Faculty
  - Students
  - ABET
  - Etc
- First offering Fall 2008 42 students
- Fall 2009 90 students
- First Graduate Dec 2010
- Silver Award in 2009 For "Innovation in Curriculum Development" from the National Center for the Study of Transfer Students
- Steady State of 125-160 students and about 30-40 graduates per year

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BA-IT Degree GOALS AND CONSTRAINTS

- Valuable to area industry
- Maximize potential transfer credits
- Eligible for ABET accreditation
- Meets the requirements for College of Engineering programs
- Provides opportunities for transfer of courses and curriculum to community colleges
- Multiple opportunities for hands-on experiences
- Diverse background in IT topics in required courses
- Flexibility for students to design their own specializations

The UNT BAIT Degree

- This unique program was designed from the beginning to meet the special articulation needs of Community College students in technical disciplines
- It was also designed to meet the skills needed by area businesses and to provide flexibility
- Has already won awards for innovative curriculum design
- Has now passed ABET Accreditation twice. Good until 2021

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Components of BAIT

- Texas Core (all transfer –some flexibility for Out-of-State)
- Engineering Core
  - Science, Math and Technical Communications (most transfer)
- CS and IT Core
  - Programming (some transfer)
  - Analysis and Design (System/Business Analyst)
  - Database and Database Admin
  - Networking and Network Admin
  - Security
  - Project Management
  - Project-based Capstone experiences
  - Web development and Administration
- Supporting Area (21 hours) This is where the Magic Happens!!
  - Flexible to apply IT to any relevant area
  - Accepts workforce skills courses

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Program Requirements

- 121 Hours minimum with 42 advanced hours

- 8 hours of science with labs

- 7 hours of Mathematics

- 3 hours of Advanced Oral and Written Communications

- 55 required hours in Computer Science and IT including 9 hours of advanced technical electives

- 21 hours in supporting courses

- University core (27 hrs)

- This degree can also be configured to participate in the Teach North Texas program with teacher certification

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Unique Feature (The Magic!!)

- 21 hour Support area permits further specialization of an interdisciplinary nature
  - Pre-Med
  - Pre-Law
  - Pre-MBA
  - Game Development
  - Criminal Justice / CSI
  - Information Security
  - Communications and Networks
  - Technical Management
  - Computational Life Sciences
  - And many others

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TRANSFERABLE HOURS

- A total of up to 79 hours could be earned at the community college

- Typical transferable hours is about 40 hours

- With some work to revise required course sequences and degree plans, and tailored articulation agreements – more students could transfer more hours into the program

- This is one of our continuous working goals

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The Future

- Offering online cohorts with partner community colleges
  - Limited offerings Spring 2019
  - Larger offerings Fall 2019
  - Full Programs 2020
  - CCN Partners have first priority
  - Faculty mentors will receive support at each partner community college
  - We are also mentoring other 4 year schools to help develop similar degree programs through the CCN-University group

Questions??

National Convergence Technology Center

ALTERNATIVE PATHWAYS TO A HIGH-TECH CAREER

BACHELOR OF APPLIED SCIENCE DEGREES

APPCONNECT NW

- National Science Foundation – Advanced Technological Education Coordination Network

- Four-year, $800,000 project

- Five partner community & technical colleges spanning the greater Seattle area

  - Bachelor of Applied Science in Software/Application Development

- Strategic partnership with the Washington Technology Industry Association

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation. (NSF DUE #1700629)

PROJECT GOALS

- Play a key role in meeting regional workforce needs and high demand for skilled technical workers

- Offer industry-driven curriculum

- AppConnect NW is designed to build awareness of an alternative pathway to a high-tech career among:

  - Potential employers / industry partners

  - Potential students, including working adults, career changers, veterans, women, and others underrepresented in the tech fields

  - High school students, teachers, and counselors

BACHELOR OF APPLIED SCIENCE DEGREES

One of the ways community and technical colleges are growing the state's talent pipeline in high-demand industries.

BACHELOR OF APPLIED SCIENCE DEGREES

When?

First four pilot degrees approved in 2005, enrolled first students in 2007, first graduates 2010;

Now 89 degrees at 27 out of 34 Washington community and technical colleges;

More on the way!

Most common degrees:

Business

Healthcare (Nursing, Dental Hygiene, etc.)

I.T. - related degrees (Networking, Cyber, Software Dev, etc.)

Most unique degrees:

Funeral Services

Digital Gaming & Interactive Media

BENEFITS OF APPCONNECT MODEL

- Collective impact
  - 300+ students
  - More opportunities to impact industry hiring needs
  - Seat at the table
- Shared faculty workload across colleges
- Partnership with WTIA adds relevance
- Central access point for companies
- Additional outreach capacity for each college

EDUCATE EMPLOYERS ABOUT BAS DEGREES

ENGAGE INDUSTRY TO ENHANCE CURRICULUM

CREATE A UNIQUE FACULTY-INDUSTRY NETWORK

HIGH SCHOOL OUTREACH

OUTCOMES FROM YEAR 1

- Curriculum review / industry roundtable

  - 15 industry partners

  - Updated understanding of most vital tech skills & workplace skills

- 30+ new industry contacts

- Cross-college faculty collaboration

  - Curriculum changes

  - Growth Mindset

WHAT'S NEXT IN YEAR TWO

- High school outreach activities

- Deeper partnership with Washington Technology Industry Association

- Regional, shared advisory board

QUESTIONS?

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AppConnect
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