Showcasing IT for High School Students

May 15, 2019
Agenda

- Statistics from CTC
- High school perspective
  Debi Crawford, Ed.D; Executive Director of Technology and HIRE Education; Melissa ISD
- Community college perspective
  Lauren Potterfield; CTE Instructional Designer; Collin College
- Four-year university perspective
  Kathryn Beasley; Assistant Director of Recruitment and Admissions; College of Engineering - University of North Texas

Send your questions to the Zoom chat box. Also use chat box to send us your school name so we know who attended.
Overview

- Suggestion of the National CTC’s NSF grant review panel
- Asked that we create a tool to help strengthen high school faculty and staff awareness of...
  - Career paths/job opportunities in IT
  - Technical school (and university) degrees/certificates in IT
State of the IT Workforce

- February 2019 data from Burning Glass Technologies

<table>
<thead>
<tr>
<th>Job category</th>
<th>Postings last six months</th>
<th>Unfilled jobs last six months</th>
<th>Projected change through 2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Support</td>
<td>108,500</td>
<td>&gt;40%</td>
<td>+11%</td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>71,935</td>
<td>&gt;45%</td>
<td>+28.5%</td>
</tr>
<tr>
<td>IT Project Management</td>
<td>93,092</td>
<td>&gt;40%</td>
<td>+9.3%</td>
</tr>
<tr>
<td>Network Administration</td>
<td>56,892</td>
<td>&gt;60%</td>
<td>+6.1%</td>
</tr>
<tr>
<td>Network Engineering</td>
<td>76,707</td>
<td>&gt;40%</td>
<td>+6.5%</td>
</tr>
<tr>
<td>Software Development</td>
<td>429,119</td>
<td>&gt;50%</td>
<td>+30.7%</td>
</tr>
</tbody>
</table>
State of the IT Workforce

- May 2019 data from Bureau of Labor Statistics

<table>
<thead>
<tr>
<th>Job category</th>
<th>Annual mean salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer and Information Systems Managers</td>
<td>$152,860</td>
</tr>
<tr>
<td>Computer Network Support Specialist</td>
<td>$68,050</td>
</tr>
<tr>
<td>Computer User Support Specialist</td>
<td>$55,050</td>
</tr>
<tr>
<td>Network and Computer Systems Administrators</td>
<td>$87,070</td>
</tr>
<tr>
<td>Software Developers, Applications</td>
<td>$108,080</td>
</tr>
</tbody>
</table>
State of the IT Workforce

- April 2019 data from Indeed.com

<table>
<thead>
<tr>
<th>Job category</th>
<th>Average salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help Desk Analyst</td>
<td>$47,360</td>
</tr>
<tr>
<td>IT Manager</td>
<td>$83,464</td>
</tr>
<tr>
<td>IT Security Specialist</td>
<td>$117,086</td>
</tr>
<tr>
<td>IT Technician</td>
<td>$73,095</td>
</tr>
<tr>
<td>Network Administrator</td>
<td>$68,256</td>
</tr>
<tr>
<td>Systems Administrator</td>
<td>$82,763</td>
</tr>
<tr>
<td>Systems Analyst</td>
<td>$76,398</td>
</tr>
</tbody>
</table>
HIGH SCHOOL GUIDANCE
STEERING STUDENTS TOWARD IT SUCCESS
Occupation Gaps

Potential Average Annual Occupation Gaps over 10 Years in Collin County, Texas, Two-Year Degree or Higher Only

Software Developers, Applications ($109,600)
Registered Nurses ($76,100)
General and Operations Managers ($144,900)
Computer Systems Analysts ($97,700)
Accountants and Auditors ($83,700)
Managers, All Other ($134,800)
Management Analysts ($93,000)
Financial Managers ($154,700)
Software Developers, Systems Software ($111,100)
Physical Therapists ($97,900)
Adult Basic and Secondary Education and Literacy Teachers and Instructors ($62,300)
Directors, Religious Activities and Education ($68,800)
Religious Workers, All Other ($45,200)
Human Resources Assistants, Except Payroll and Timekeeping ($42,100)
Computer Programmers ($86,000)
Kindergarten Teachers, Except Special Education ($56,300)
Coaches and Scouts ($45,600)
Middle School Teachers, Except Special and Career/Technical Education ($61,200)
Substitute Teachers ($25,100)
Elementary School Teachers, Except Special Education ($61,600)

Source: JobsEQ Data as of 2018Q3 except wages which are as of 2017
Counselors stay up to date on the latest technology uses/career options.
<table>
<thead>
<tr>
<th></th>
<th>Fall 10th</th>
<th>Spring 10th</th>
<th>Fall 11th</th>
<th>Spring 11th</th>
<th>Fall 12th</th>
<th>Spring 12th</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPMT 1305 IT Essentials</td>
<td>Online</td>
<td>ITCC 1314 CCNA 1 Cisco Intro to Networks</td>
<td>ITCC 1340 CCNA 2 Routing and Switching Essentials</td>
<td>^ITSY 1300 Fundamentals of Information Security</td>
<td>ITSY 2300 Operating System Security</td>
<td></td>
</tr>
<tr>
<td>ENGLISH 2A</td>
<td>ENGLISH 2B</td>
<td>ENGLISH 3A</td>
<td>ENGLISH 3B</td>
<td>ENGLISH 4A</td>
<td>ENGLISH 4B</td>
<td></td>
</tr>
<tr>
<td>GEOMETRY</td>
<td>GEOMETRY</td>
<td>ALGEBRA 2A</td>
<td>ALGEBRA 2B</td>
<td>PRE CAL A</td>
<td>PRE CAL B</td>
<td></td>
</tr>
<tr>
<td>CHEMISTRY</td>
<td>CHEMISTRY</td>
<td>CHEMISTRY OR PHYSICS</td>
<td>CHEMISTRY OR PHYSICS</td>
<td>4TH YR SCIENCE</td>
<td>4TH YR SCIENCE</td>
<td></td>
</tr>
<tr>
<td>WORLD HISTORY</td>
<td>WORLD HISTORY</td>
<td>US HISTORY</td>
<td>US HISTORY</td>
<td>GOVERNMENT</td>
<td>ECONOMICS</td>
<td></td>
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<tr>
<td>HS ELECTIVE</td>
<td>HS ELECTIVE</td>
<td>FINE ARTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Security + could be plugged into as an elective.
Building Capacity of College Advisors, Coaches, Career Counselors and Administrators

Professional Development Course for Post-secondary Advisors

Level 1
Audience

Community college
- Advisors
- Students
- Parents

High School
- Advisors
- Students
- Parents
Goals

- Increase awareness of CTE programs among Community College advisors
- Increase discussions with students about CTE opportunities
- Change image of Career and Technical Education for both groups
Structure

Course is tiered
- Top to bottom
- Left to right

Microlearning
- 2-4 minute lessons
Structure

4 Modules
1. Learn about CTE
2. Help students choose a program
3. Create a financial plan
4. Stay on track to finish
Structure

12 Lessons

✓ Dynamic PowerPoints
✓ Infographics
✓ Pull-out tools

TODAY’S COMMUNITY COLLEGE STUDENTS

40% Community College Students

- Growing in number
- Getting younger overall
- Half over age 22

Percentage of Community College Population

50% 38% 10%
Structure

Pull-out Tools
Self-Assessments
✓ Links to web resources
✓ Unique to course

Which Career Cluster is Right for You?
A Self-assessment Tool for Advisors and Students

One way to make sure you enjoy your job is to choose a job that matches your character traits. Use the pull-out tool/ self-assessment below to help identify which career cluster best fits with your individual personality.

Step 1: Read the definitions for each personality trait. Rank them in order from 1-6 in terms of how well you think each trait matches your personality.

Artistic (CREATIVELY): Expressive, creative and innovative, you enjoy the arts, using imagination and creating ideas and objects.

Conventional (ORGANIZERS): Structured, detail-oriented and efficient, you enjoy using computers and office equipment to organize data and your environment.

Entrepreneur (PERSUADERS): Persuasive, in charge and entrepreneurial, you enjoy using leadership skills to task, lead groups and initiate projects.

Realistic (DOERS): Independent and practical, you enjoy mechanical or physical tasks, working with your hands and using tools.

Social (HELPERS): Outgoing, patient, and caring, you enjoy building relationships, teaching and helping others using your interpersonal skills.

Step 2: What were your top three traits? List them here, in order, with your best match at #1.
1. 
2. 
3. 

Which trait did you rank last as being least like you? List it here.

Step 3: Each of the Career Clusters is described below. Circle the clusters that use traits that match the traits you ranked highest. Next, go back and cross off any clusters that do not sound interesting to you or require the skill that you listed as your #6. The remaining cluster(s) should be a good fit for you!

Architecture and Constructions:
Realistic, Conventional, Investigative
Use your hands to design, plan, manage, build, and maintain real-world projects like buildings, roads, and bridges.

Arts, A/V Technology and Communications:
Artistic, Realistic, Social, Enterprising
Use technology and social trends to design, produce, exhibit, perform, write or publish visual media, and designs.
Structure

Pull-out Tools

✓ Worksheets
Structure

Pull-out Tools

Videos

- Links
- Unique
  - Modeling Videos
- Animations
  - Powtoons

How about...

...Information Technology

Level 1
IT Connections

Powtoon link

https://e.powtoon.com/pub/cc1_rj=XzGzcX333YQpgjLjHfiTQGilPxaJbHMH35sHPiaBICzadbc&Bszitzy9CSBec1fUYvB!0zaGLg5yyRIVXtpKX%3DSSSSTAT&_ei=EiwT4mPqVng_hUVilXIcY_KQUpY
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2Ub7rxMo3dbbJnP4ihMXL7Tke4M0ml9xrJHtc3KSvRsTK3n09v.
Availablilty

Starlink

- Free for community colleges in TX
- [https://www.southtexascollege.edu/profdev/starlink.html](https://www.southtexascollege.edu/profdev/starlink.html)

September 1, 2019
UNT College of Engineering

Transferring into an IT Bachelor’s Program

Kathryn Beasley
Assistant Director of Recruitment & Admissions
The University of North Texas

- Denton is 45 minutes north of DFW, the country’s 4th largest metropolitan area and 6th largest economy.

- UNT has 39,000 students and the College of Engineering is home to 4,000 students.

- The Department of Computer Science and Engineering has a long history; the Computer Science program is 48 years old.

- Sign up for a tour at tours.unt.edu.

EST. 1890
UNT IT Degree Plan

- Very friendly degree plan for transfer students
- Requires fewer math and science courses
- Gives students a great foundation that is based in Computer Science
- Flexible
The Student Perspective

The IT program appeals to students for many reasons. Some of the reasons I’ve heard from them are below.

• Flexibility
• Coding experience without advanced math and science requirements
• Interest in multiple disciplines
• Interest in a collaborative work environment
• Desire to work on end-stage development of products, including look and feel
# Freshman Admission Criteria for Engineering

<table>
<thead>
<tr>
<th>Rank in HS Class</th>
<th>SAT Test Results</th>
<th>ACT Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 25%</td>
<td>Math score 590 or higher</td>
<td>Math score 23 or higher</td>
</tr>
<tr>
<td></td>
<td>Total score 1140 or higher</td>
<td>Composite score 23 or higher</td>
</tr>
<tr>
<td>Top 50% or No Rank</td>
<td>Math score 620 or higher</td>
<td>Math score 24 or higher</td>
</tr>
<tr>
<td>Provided</td>
<td>Total score 117 or higher</td>
<td>Composite score 24 or higher</td>
</tr>
<tr>
<td>Less than 50%</td>
<td>Math score 650 or higher</td>
<td>Math score 26 or higher</td>
</tr>
<tr>
<td></td>
<td>Total score 1250 or higher</td>
<td>Composite score 26 or higher</td>
</tr>
</tbody>
</table>
Transfer Admission Criteria for Engineering

To be directly admitted into the IT program, students must:
1. Be admitted into UNT
2. Have completed Pre-Calculus with a C or better
3. Have a 2.0 or higher GPA in all math, science, and engineering courses

If students are not directly admitted to the IT program, the student will:
1. Be classified as Pre-IT
2. Take a set of courses that are required for the IT program
3. Complete these courses with a 2.5+ GPA
4. Be admitted fully into the IT program
Thank you.

Kathryn Beasley
Assistant Director of Recruitment & Admissions
Kathryn.Beasley@unt.edu
Questions?

- Kathryn Beasley, University of North Texas - kathryn.beasley@unt.edu
- Deborah Crawford, Melissa ISD - deborahcrawford@melissaisd.org
- Mark Dempsey, National CTC – mdempsey@collin.edu
- Lauren Potterfield, Collin College - lpotterfield@collin.edu