Stackable Credentials

AM STEM Robotics - A Shared Partnership with Local High Schools, Bridgerland Technical College and Utah State University

Box Elder School District
Cache County School District
Logan School District
Rich County School District
Career Pathways

1. High School CTE Skill Certificate
2. Technical Certificate
3. Associates of Applied Science Degree
4. Bachelor of Science Degree
### High School Career Pathways

#### Media Design / Web & Mobile Dev.

**Transfer Your High School Courses to BATC!**

### Media Design

<table>
<thead>
<tr>
<th>High School</th>
<th>BATC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Tech</td>
<td>BTEC1106 Computer for Trades</td>
</tr>
<tr>
<td>Digital Media 1 &amp; 2</td>
<td>MDT2430 Graphic Design Apps I &amp; II</td>
</tr>
<tr>
<td></td>
<td>MDT2400 Graphic Illustration I</td>
</tr>
<tr>
<td></td>
<td>MDT2140 Web Design Animation</td>
</tr>
<tr>
<td></td>
<td>MDT2530 Video Production II</td>
</tr>
<tr>
<td>Math 1050</td>
<td>MDT1041 Math for Graphic Comm</td>
</tr>
<tr>
<td>Business Webpage Design</td>
<td>MDT2110 Web Design Authoring I</td>
</tr>
<tr>
<td>Adv. Webpage Design</td>
<td>MDT2120 Web Design Authoring II</td>
</tr>
<tr>
<td>Digital Photography</td>
<td>MDT2501 Digital Photography</td>
</tr>
<tr>
<td>Adv. Digital Photography</td>
<td>MDT2501 Digital Photography</td>
</tr>
<tr>
<td>Design &amp; Visual Communications</td>
<td>MDT1050 Design Principles</td>
</tr>
</tbody>
</table>

You can complete 52% at YOUR high school.

### Web & Mobile Development

<table>
<thead>
<tr>
<th>High School</th>
<th>BATC</th>
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</thead>
<tbody>
<tr>
<td>Computer Tech</td>
<td>BTEC1112 Computer Literacy for IT</td>
</tr>
<tr>
<td>Business Webpage Design</td>
<td>ECOM2102 Web Development Essentials</td>
</tr>
<tr>
<td>Basic Digital Photo</td>
<td>ECOM2110 Digital Photography</td>
</tr>
<tr>
<td>AP Computer Science</td>
<td>ECOM2031 Java Programming</td>
</tr>
<tr>
<td>Digital Media I</td>
<td>ECOM1402 Digital Video Editing I</td>
</tr>
<tr>
<td>Digital Media II</td>
<td>ECOM1412 Digital Video Editing II</td>
</tr>
</tbody>
</table>

You can complete 30% at YOUR high school.

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#### Health, Nursing, & Dental

**Transfer Your High School Courses to BATC!**

### Medical Assisting

<table>
<thead>
<tr>
<th>High School</th>
<th>BATC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Anatomy &amp; Physiology ASB</td>
<td>MEDA1416 Medical Assistant</td>
</tr>
<tr>
<td>Adv. Anatomy I &amp; II (WSU)</td>
<td>MEDA1416 Medical Assistant</td>
</tr>
<tr>
<td>Medical Terminology or Med Term I (WSU)</td>
<td>MEDA1115 Medical Terminology</td>
</tr>
<tr>
<td>FTI1500 Human Growth (WSU)</td>
<td>MEDA1300 Psych for Healthcare</td>
</tr>
<tr>
<td>Psychology 101 (WSU)</td>
<td>MEDA1500 Psych for Healthcare</td>
</tr>
<tr>
<td>Intro to EMS (depends on certification)</td>
<td>MEDA2251 Emergency Preparedness</td>
</tr>
</tbody>
</table>

You can complete 20% at YOUR high school.

### Practical Nursing

<table>
<thead>
<tr>
<th>High School</th>
<th>BATC</th>
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</thead>
<tbody>
<tr>
<td>Medical Terminology 1101 (WSU)</td>
<td>N/A Pre-Admission Course: Medical Terminology</td>
</tr>
<tr>
<td>Advanced Anatomy I &amp; II (WSU)</td>
<td>N/A Prerequisite Course: Human Anatomy</td>
</tr>
<tr>
<td>Nutrition 1020 (WSU)</td>
<td>N/A Prerequisite Course: Nutrition</td>
</tr>
<tr>
<td>Psychology 101 (WSU)</td>
<td>N/A Prerequisite Course: Psychology</td>
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</table>

You can complete 4 of the 7 prerequisites at YOUR high school.

### Dental Assisting

<table>
<thead>
<tr>
<th>High School</th>
<th>BATC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Anatomy &amp; Physiology ASB</td>
<td>DENA1001 Dental Assisting VI</td>
</tr>
<tr>
<td>Medical Terminology or Med Term I (WSU)</td>
<td>DENA1001 Dental Terminology</td>
</tr>
</tbody>
</table>

You can complete 33% at YOUR high school.

---

**Talk to your counselor today!**

**batc.edu**

**94% Career Placement**

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**batc.edu**

**94% Career Placement**
Agriculture makes up 1.4% of total employment
Why BATC?
ECONOMIC REPORT OF THE PRESIDENT

Together With
THE ANNUAL REPORT of the
COUNCIL OF ECONOMIC ADVISERS

Transmitted to the Congress
February 2016

Figure 5-15
Probability of Automation by an Occupation’s Median Hourly Wage

Median Probability of Automation

0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0

Less than 20 Dollars

20 to 40 Dollars

More than 40 Dollars

Median Hourly Wage in 2010

Source: Bureau of Labor Statistics; Frey and Osborne (2013); CEA calculations.
Why BATC?

Masters:Bachelors:Technicians

1:2:7
About 28 percent of Utahns age 25 and over have a bachelor's degree or higher, yet only 20 percent of Utah jobs require a bachelor's degree or higher. Is this a massive mis-match?

The Education & Training FACE of Utah Jobs Now and in 2018

What is BATC?
AM Stem Topics

Industrial Robotics
Programmable Logic Controllers
Electronics
Electric Motors with Controls
Fluid Power (Hydraulics, pneumatics)
Safety
Sensors
Basic Electrical
Microcontrollers
210 hours of electives (some high school courses count)
Hands On Training
Competency Based
Employer Driven Curriculum
High Demand for skills learned
Great Pre-Engineering skills
Local, high paying careers
Broad range of employment opportunities that will apply to current and future career paths.
Multiple career/education pathways
Disconnected & Missing Pieces

Mt Crest
Green Canyon
Bear River
Sky View
Box Elder
Rich
Ridgeline
Logan

AAS ASSOCIATES DEGREE
Everyone on the same page, working together!

Autoliv
ICON

Mt Crest
Green Canyon
Bear River
Sky View
Box Elder
Rich
Ridgeline
Logan

U of Utah

Thermo Fisher Scientific
Luxfer
NUCOR
Hill Air Force Base
NEW BACHELORS DEGREE IN TECHNOLOGY SYSTEMS
With Emphasis:
- Robotics, Automation & Controls
- Technology Management
- Computer & Information Technology

NEW - AAS CONTROLS TECH
- 25 credits applies with BATC Certificate

NEW - Bachelors CONTROLS ENGINEERING TECHNOLOGY coming next year… Stacks on AAS

STACKABLE BACHELORS DEGREES
- INSTRUCTIONAL TECHNOLOGY & LEARNING SCIENCES BACHELORS DEGREE
- TECHNOLOGY MANAGEMENT BACHELORS DEGREE
- ELECTRICAL AUTOMATION & ROBOTIC TECHNOLOGY BACHELORS DEGREE

NEW BACHELORS DEGREE IN TECHNOLOGY SYSTEMS
WITH EMPHASIS:
- Robotics, Automation & Controls
- Technology Management
- Computer & Information Technology

STEM/TECHNOLOGY TEACHING POSITIONS THROUGHOUT UTAH
AM|STEM ACADEMY

**1st 315 Hour Core**
- IAMT 1151 3D Modeling
- IAMT 1002 Automation Technician Basics
- ELEC 1003 Electronics Assembly & Soldering
- ELEC 2061 Microcontrollers 1
- ELEC 2052 Microcontrollers 2
- IAMT 2020 Introduction to Industrial Robotics

**2nd 315 Hour Core**
- IAMT 1103 Basic Workplace Safety
- IAMT 1011 Basic Electrical Theory & Wiring
- IAMT 1261 Fluid Power Pneumatics
- IAMT 1600 Electrical Motor Controls
- IAMT 2000 Programmable Logic Controllers 1

**120 Hours Required**
- IAMT 1300 Industrial Mechanics
- IAMT 1021 Troubleshooting Electrical Circuits
- IAMT 1611 Troubleshooting Control Circuits

**150 Hour Electives**
Choose from the following:
- Take an approved BATC class:
  - IAMT 1621 Troubleshooting Motor Circuits
  - IAMT 2002 Troubleshooting PLC Circuits
  - IAMT 1250 Fluid Power Hydraulics
  - IAMT 1152 3D Modeling 2
  - IAMT 2822 OJT/Instructor Aid (Upon Approval)

And/or take an approved, existing high school course (See Below)
- UP TO 150 HOURS

**COMPLETE 300 HOUR AM|STEM CERTIFICATE**

**STACKABLE BACHELORS DEGREES**
- UVU
  - Technology Management (All Online) Bachelor's Degree
- BACHELOR OF SCIENCE TECHNOLOGY SYSTEMS MANAGEMENT Bachelor's Degree
- MANUFACTURING ENGINEERING TECHNOLOGY Bachelor's Degree
- ELECTRONICS ENGINEERING TECHNOLOGY Bachelor's Degree
- CONTROLS ENGINEERING TECHNOLOGY Bachelor's Degree

**GO TO WORK!**
Students can exit and enter education path at multiple points

**AAS ASSOCIATE'S DEGREE**
(Assumes 30 hour BATC credit counts as 24 credit hours upon completion)

**GO TO WORK!**
See BATC for internship and work opportunities.

**AM|STEM PATHWAYS**

**BATC**
Upper Level Certificates:
- AM ADVANCED TECH 1410 CONTROLS ENGINEERING TECH 1410
  (As many as 12 credits articulable to USU Bachelor's Degree)
**Autoliv IBC / BATC Automation / Robotics Internship**

**Requirements:**
- Near completion of 900 hour Advanced Operator Certificate.
- 18 years or older and have graduated from High School or equivalent Commitment, at the minimum, to completing 1200 hour basic Technician Certificate.

**Benefits:**
- OJT in highly advanced, high volume, very automated production facility.
- Flexibility of hours worked, 16 to 29 hours per week. Predominately weekends.
- Tuition reimbursement provided.
Start earning college credit today!

Apply 30 credits toward an AAS Associate’s degree + More (equivalent to 1 year) tuition-free!

Create • Invent • Program • Build • Troubleshoot

Northern Utah High Schools and BATC have teamed up to provide students with a hands-on, industry driven certification.

**Microcontrollers 1 + 2**
This course is a study in microcontroller architecture, arithmetic, programming, and interfacing. Students will put together a series of projects using an Arduino platform, that they will design, build, program, and test for the instructor’s approval.

**3D Modeling**
Introduces SolidWorks software as a 3-D design tool. Learn creation, retrieval and modification of 3-D and layout drawings, using basic SolidWorks commands.

**Electrical Assembly + Soldering**
Develop the ability to solder and desolder connectors, components, and printed circuit boards using industry standards.

**PLC**
Learn ladder logic and programming techniques with Programmable Logic Controllers (PLCs).

**BASIC WORKPLACE SAFETY**
Explains general safety rules, OSHA codes and standards, personal protective equipment (PPE), fire safety, and electrical safety

**Microcontrollers 1 + 2**
Electrical topics include electrical fundamentals, basic electricity, basic electrical circuits, electrical systems and protection, alternating current, motors, generators, transformers, grounding and bonding.

**Intro to Robotics**
This course will teach the basic sensing and locomotion principles as you build and control a robotic arm. The students will learn the concepts of industrial robot programming as well.

**Basic Electrical**
Students will learn about tools and tool safety including hand and power tools, test tools, meters, and precision measurement tools.

**Fluid Power Pneumatics**
This course is a real world hands-on approach to learning pneumatic principles and circuits. Students will use schematics to construct pneumatic circuits.

**Electrical Motor Controls**
Students will design, simulate, and wire circuits that include control relays, timing relays, and motor starters.

Complete a 900 Hour, industry-recognized certificate, shortly after graduation from high school.

SEE A COUNSELOR TO REGISTER TODAY

https://youtu.be/iI0bess5GpY
Start earning college credit today!

Apply 30 credits toward an AAS Associate's degree + More (equivalent to 1 year) tuition-free!

INDUSTRY CERTIFICATIONS
- CompTIA A+
- CompTIA Network+
- CompTIA Security+
- CompTIA Cyber Security Analyst+
- Plus Many More

Create • Invent • Program • Build • Troubleshoot

Northern Utah High Schools and BATC have teamed up to provide students with a hands-on, industry driven certification.

See a Counselor to Register Today

https://youtu.be/iIlbcoss5Cy

Cyber Security
There are multiple classes in the ever evolving field of cyber security. Learn cybersecurity terminology, standards and how to detect, analyze and defend cybersecurity threats.

PC PRO
How to build, configure, repair and maintain both the hardware and software of computers with lots of hands on labs. (CompTIA A+)

Networking Technology
The design, topology, implementation, cabling, signal transmission, etc. of networking concepts. (CompTIA Network+)

Security Essentials
Learn how to secure a network and prevent and manage hacker penetration. (CompTIA Security+)

Linux Administration
Install, configure, manage and maintain a Linux server and common Linux and Open Source services. (Linux Server+)

Python Programming
Learn the fundamentals of programming in Python, including creating scripting from basic to intermediate as well as debugging code.

OS Essentials I and II
Learn the basic functional and operational fundamentals of how the Mac OS X (OS Essentials I) and Linux (OS Essentials II) operate.

Web Essentials
Learn web design, creation and publication to the internet. Basic HTML, graphics and layout principles.
## Associate of Applied Science (AAS)
### General Technology

#### General Education Requirements
- **16 minimum credits required**

- **Communication Literacy**
  - ENGL 1010 Introduction to Writing (CL) 3
  - or ENGL 2010

- **Math Requirement**
  - QL Quantitative Literacy 4
  - MATH090 QL, MATH105 QL, STAT140 QL, STAT145 QL, BUS105 or MATH100 will be accepted. Take a QL class if planning to pursue a BS degree

- **Breadth Requirements**
  - 9
    - BAI Breadth American Institutions 3
    - APEC 1600 or ECN 1500 preferred
    - BSS or BHU Breadth Social Science - Humanities 3
    - BPS or BLS Breadth Physical or Life Science 3

#### Technical Requirements for Degree
- **17 minimum credits required**

- **Core Courses**
  - Human Relations and Communications 6
    - BUSN 2320 Small Business Management for CTE 3
    - BUSN 2200 Business Communications 3
      - Prereq: ENGL 1010

- **Designated Electives from an Emphasis Area**
  - 11

#### Emphasis Options

##### General Business Emphasis
- BUSN 2010 Financial Accounting 4
- BUSN 2020 Managerial Accounting 4
- BUSN 2050 Business Law 4
- BUSN 2390 Organizational Behavior 3
- BUSN 2550 Business Ethics & Social Responsibility 2
- BUSN 2800 Computerized Accounting 2
- BUSN 2998 Special Problems (Entrepreneurial) 1-3
- CMST 1020 Public Speaking (BUH)** 3

##### Technology Systems Emphasis
- ASTE 2250 Occupational Experience 1-6
- BUSN 2390 Organizational Behavior 3
- BUSN 2550 Business Ethics & Social Responsibility 2
- CMST 1020 Public Speaking (BUH)** 3
- TEE 1010 Communications Technology 3
- TEE 1020 EPT Systems Control Technology 3
- TEE 1032 Construction and Estimating 3
- TEE 1200 Computer-Aided Drafting & Design* 3
- TEE 2030 Wood-based Mfg. Systems 3
- TEE 2220 Civil Engineering & Architecture** 3
- TEE 2300 Advanced Material Processing System 3
- TEE 2300 Electronic Fundamentals (QI) 4

##### Design and Creative Arts Emphasis****
- ART 1010 Exploring Art (BCA) 3
- ID 1750 Design in Everyday Living (BCA) 3
- LAFP 1030 Intro. to Landscape Architecture (BCA) 3
- OPFD 1700 Outdoor Prod Design & Dev Prof Sem 1
- TEE 1010 Communications Technology 3
- TEE 1030 Material Processing System 3
- TEE 1200 Computer-Aided Drafting & Design* 3
- TEE 2030 Wood-based Mfg. Systems 3

##### Allied Health Systems Emphasis
- BIOL 1500 Anatomy and Physiology (BLS) 3
- BIOL 2320 Human Anatomy 4
- BIOL 2420 Human Physiology 4
- FCBD 1520 Human Dev. Across the Lifespan (BSS) 3
- HEAL 2020 Emergency First Response 3
- HEP 2500 Health and Wellness 2
- NDFS 1020 Science & App of Human Nutri (BLS) 3
- NURS 1008 Medical Terminology 2

#### AIC 900 hour Certificate or Certificate of Proficiency/Completion
- 30 credits (credits transferred at time of graduation application)

#### Degree Total
- 63 minimum credits required
# Bachelor of Science (BS) Technology Systems

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>30 minimum credits required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Literacy</td>
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<tr>
<td>- ENGR 2010 Intermediate Writing (CL1)</td>
<td>3</td>
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<tr>
<td>Breadth Requirements</td>
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</tr>
<tr>
<td>- BSS Breadth Social Science</td>
<td>3</td>
</tr>
<tr>
<td>- BLS Breadth Life Science</td>
<td>3</td>
</tr>
<tr>
<td>- BCA Breadth Creative Arts</td>
<td>3</td>
</tr>
<tr>
<td>- Breadth Exploration Course</td>
<td>3</td>
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<tr>
<td>Depth Requirements</td>
<td>15</td>
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<tr>
<td>- CI Communications Intensive</td>
<td>3 (Can be fulfilled w/ASTE 3050)</td>
</tr>
<tr>
<td>- QI Quantitative Intensive</td>
<td>3 (Can be fulfilled w/CMST 3250)</td>
</tr>
<tr>
<td>- DHA Depth Humanities and Creative Arts</td>
<td>3</td>
</tr>
<tr>
<td>- DSS Depth Social Sciences</td>
<td>3</td>
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<tr>
<td>Technical Requirements for Degree</td>
<td>36 minimum credits required</td>
</tr>
<tr>
<td>Core Courses</td>
<td>21</td>
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<tr>
<td>- ASTE 3050 Technical &amp; Professional Comm (CI)</td>
<td>3^*</td>
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<tr>
<td>- ASTE 3440 Science, Tech &amp; Mod Science (DSM)</td>
<td>3</td>
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<tr>
<td>- ASTE 4250 Internship</td>
<td>4 Variable credits – increase if more Upper Division is needed</td>
</tr>
<tr>
<td>- ASTE 4900 Senior Project</td>
<td>3</td>
</tr>
<tr>
<td>- CMST 3250 Organizational Communication (CI)</td>
<td>3^*</td>
</tr>
<tr>
<td>- TEE 2300 Electronics Fundamentals (QI)</td>
<td>3^*</td>
</tr>
<tr>
<td>- TEE 3600 Hazard Recognition &amp; Control</td>
<td>3</td>
</tr>
<tr>
<td>Designated Electives from an Emphasis Area</td>
<td>15</td>
</tr>
</tbody>
</table>

## Emphasis Options

### Information and Computer Technology Emphasis
- TEE 3650 Network Administration 3
- TEE 3400 Computer Automation 3
- TEE 3510 Advanced Server Administration 3
- TEE 3710 Advanced Hardware 3
- TEE 4710 Security and Digital Forensics 3

### Robotics, Automation, and Controls Emphasis
- BCIS 1000 Introduction to Computer Science 3
- TEE 2400 Industrial Networking 3
- TEE 3370 Industrial Robotics 3
- TEE 3380 Advanced PLC 3
- TEE 3390 IIMI 3

### Technical Management Emphasis
- MGT 3250 Introduction to Human Resource Mgt 3
- MGT 3510 New Venture Fundamentals 2
- MGT 3520 New Venture Management 2
- MGT 3540 New Venture Financing 2
- MGT 3700 Operations Management 2
- MGT 4720 Production Planning & Control 2

## ATC 900 hour Certificate or Certificate of Proficiency/Completion
- 30 credits (credits transferred at time of graduation application)

## AAS General Technology Degree (or other approved elective credits)
- 33 credits

## Degree Total
- 120 minimum credits required

Course substitutions are reviewed on a case-by-case basis. Please work with Academic Advisor for course selections.