THE UNIVERSITY OF UTAH

UTAH EDUCATION
POLICY CENTER

STEM Landscape in Utah:

A Glance at STEM in K-12 and Postsecondary Education and the Workforce

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Overview

The interconnectedness of the K-12, postsecondary, and workforce spheres is apparent in investigations concerning science, technology, engineering, and mathematics (STEM). Research indicates that students in the K-12 arena who receive a rigorous education and ample exposure to science and mathematics are significantly more likely than their counterparts to enroll in a four-year university, pursue a major in a STEM field, and graduate with a bachelor's degree [1-3]. Students who earn a baccalaureate or postgraduate STEM degree are generally more sought in the workforce, particularly in today's era of technological innovation and fierce global competition that is increasingly reliant on individuals who possess the so-called 21st century skills, which includes the ability to analyze, evaluate, design, and create evidence-based solutions to problems [1].

Here we provide an initial perspective on the STEM Landscape in Utah through an interactive dashboard. First, we provide an overview of STEM policies and initiatives enacted between 1999 and 2019. Next, using secondary data sources, we provide a longitudinal overview of STEM education, participation, and outcomes within K-12, postsecondary, and the workforce. The dashboard also permits an understanding of the state's progress on important STEM related outcomes, including how these outcomes vary by gender, race/ethnicity, and Free or Reduced Lunch status. Where possible we also compare Utah data to national trends. This dashboard will be expanded as additional data become available and accessible.

The companion dashboard was developed by the Utah Education Policy Center in partnership with the STEM Action Center.

Overview of Timeline Tab

The following timeline identifies key STEM policies and initiatives enacted in Utah and the United States between 1999 and 2019. Included in the condensed description of each policy or initiative are the objectives they were designed to achieve. Policies and initiatives that have sunsetted are indicated by the symbol [^].

Overview of K-12 Tab

Data presented here aim to provide an overview of K-12 STEM education in Utah, including the percentage of STEM-designated schools and STEM-endorsed teachers in Utah, the total number of STEM courses taken by the end of high school, the number of Advanced Placement (AP) courses taken in high school, science and mathematics proficiency rates among Utah students, and ACT mathematics and science scores earned by Utah students. Where possible, data are disaggregated by gender, race/ethnicity, and Free or Reduced Lunch status and compared to national trends. As of 2020, only 48 schools are designated as STEM schools in Utah.

Additionally, while 16.0% of Kindergarten and Elementary School teachers in 2019 had STEM endorsements, 56.2% of Middle/Junior High and High School teachers did. Data also suggest that the mathematics proficiency of Utah 4th graders has been on an upward trend since 2011 unlike the national average.

Overview of Postsecondary Tab

Data presented here provide a broad overview of postsecondary STEM education in Utah. Data provided include the percentages of STEM and non-STEM undergraduate and graduate degree recipients from USHE institutions, as well as the compositions of STEM undergraduate and graduate degree recipients from USHE institutions in particular fields. We also report the number of STEM bachelor's, master's and doctoral degrees awarded by USHE institutions. Data in the postsecondary section are reported for students who in addition to graduating from USHE institutions, also graduated from a public secondary school in Utah. Consequently, we are able to disaggregate data by student group (i.e., gender, race/ethnicity, and Free or Reduced Lunch status), as identified in secondary schools. As noted below, only 14-17% of undergraduate students and 16-21% of graduate students received STEM degrees between 2016 and 2019.

Overview of Workforce Tab

Data presented here cover STEM workforce participation in Utah, including such topics as the job placement rates of USHE STEM degree recipients, the median wage outcomes of USHE STEM degree recipients one-year and five-years post-graduation, and the industries of employment of USHE STEM degree recipients. Interestingly, Computer, Information Sciences, and Support Services degree recipients have the highest job placement rates (79%) and the highest growth (85%) in median wage outcomes between their first and fifth years post graduation.

Methods

Data used for the dashboard were gathered from a variety of secondary sources, including the National Assessment of Educational Progress (NAEP), the STEM Action Center, the U.S. Bureau of Labor Statistics (BLS), the Utah Data Research Center (UDRC), the Utah Department of Workforce Services, the Utah State Board of Education (USBE), and the Utah State System of Higher Education (USHE). Data obtained from the USBE and UDRC were transformed to generate some of the descriptive statistics that are presented in the dashboard. Data from additional secondary sources were sometimes summarized or used as obtained. All tables and figures were generated by the Utah Education Policy Center. Data sources are cited throughout the dashboard.

Below, we provide a detailed overview of the analysis performed to derive the data presented throughout the STEM Landscape Dashboard.

K-12 Tab

To derive data for the chart "Counts and Classifications of STEM Designated Schools in Utah, STEM Action Center, 2020," the counts and classifications of STEM designated schools in Utah in 2020 were obtained from publicly accessible data on the STEM Action Center's website. Data were used as obtained.

To derive data for the chart titled "Percentage of Full-Time Teachers with STEM Endorsements in Utah, 2019" the following analyses were performed: In the CACTUS Endorsement table, the column CERT_ENDO_DEGREE_CODE was filtered to include only endorsements classified as STEM. The table CACTUS_SCHOOL_TYPE_CODE was filtered to only include school types relevant to the analysis, which included "public kindergarten/elementary schools" and "public middle/junior high and high schools." Schools for which their description in the table SCHOOL_TYPE_DESC contained words such as "Elementary," "Kindergarten," and "grades K-6" were categorized as kindergarten/elementary schools. Also included in the category kindergarten/elementary schools were schools for which their SCHOOL_TYPE_CODE was "MDINT" and GRADE_LEVEL_SUMMARY was "ELEM." All other schools, including middle, junior, and high schools were classified as middle/junior high and high schools. The formatted SCHOOL_TYPE_CODE table was joined with CACTUS_SCHOOL in order to identify schools in the CACTUS database that were relevant to the analysis and appropriately classify schools. To prevent teachers from being counted more than once (in other words, to include only distinct PERSON_IDs), determination was made to use information on teachers' assignment percent gleaned from PERSON_ID and MAX_ASSIGNMENT_PERCENT. Only teachers who were full time were included; the process of determining which teachers were full-time involved summing the assignment percents within the year and filtering out those with sums less than 1 (aka 40 hours). This decision to only include those identified as full time resulted in 150 teachers being dropped from the data. When the aforementioned tables and columns were joined, and data were filtered to only include 2019 data, the resulting output included the counts of public kindergarten/elementary and secondary school teachers with STEM Endorsements in 2019. These raw counts were divided by the total numbers of public kindergarten/elementary and secondary teachers in 2019, which were also derived from the CACTUS data using the above described methodologies, and multiplied by 100% to arrive at the data presented in the chart.

The chart titled, "Trends in the Criticality of STEM Teaching Fields in Utah, 2010-2019" utilized publicly accessible 2010-2019 data from USBE. Data were used as obtained from annual reports published between 2010 and 2019.

The chart titled "Student Assessment Levels of Proficiency by Test, 2014-2019" utilized publicly accessible 2014-2019 data from USBE's website. Data were used as obtained.

The chart titled "Student Assessment Proficiency Rates by Demographic Group and Test, 2016-2019" utilized publicly accessible 2016-2019 data from USBE's website. Data were used as obtained.

The chart titled "NAEP Mathematics and Science Proficiency Rates, 2011-2019" utilized publicly accessible 2011-2019 data from NAEP's website. Data were used as obtained.

To derive data for the chart titled, "Number of STEM Courses Taken by the End of High School, 2015-2017" the following analyses were performed on UDRC data: All missing rows for the variables USBE_STEM_COURSE_COUNT, USBE_GENDER, USBE_ETHNICITY, and USBE_LOWINCOME were dropped. For the purposes of our analysis, the variable USBE_GRADUATION_YEAR was filtered to only include years 2015-2017. Next, descriptive statistics regarding the number of STEM courses taken by end of high school were computed by graduation year and by variable. The *median*, not mean, was the descriptive statistic selected to indicate the number of STEM courses taken by the end of high school for each demographic group included in the analysis.

To derive data for the chart tiled, "Students' Mean Grade Point Average for STEM Courses, by Graduation Year and Demographic Group, 2015-2017" the following analyses were performed on UDRC data: All missing rows for the variables USBE_STEM_COURSE_MEAN_GRADE, USBE_GENDER, USBE_ETHNICITY, and USBE_LOWINCOME were dropped. For the purposes of our analysis, the variable USBE_GRADUATION_YEAR was filtered to only include years 2015-2017. Next, descriptive statistics regarding students' STEM course mean grade were computed by graduation year and by variable. Means were the descriptive statistics selected to indicate the STEM course mean grade for each demographic group included in the analysis. All means were rounded to the nearest whole number for the purposes of our analysis.

To derive data for the chart, "Mean ACT Math and Science Subscores, by Graduation Year and Demographic Group, 2015-2017" the following analyses were performed on UDRC data: All missing rows for the variables USBE_ACT_MAXMATHSUBSCORE, USBE_ACT_MAXSCIENCESUBSCORE, USBE_GENDER, USBE_ETHNICITY, and USBE_LOWINCOME were dropped. For the purposes of our analysis, the variable USBE_GRADUATION_YEAR was filtered to only include years 2015-2017. Next, descriptive statistics regarding ACT mathematics and science scores were computed by graduation year and by variable. Means were the descriptive statistics selected to indicate the ACT mathematics and science score for each demographic group included in the analysis. All means were rounded to the nearest tenth for the purposes of our analysis.

To derive data for the chart titled "Average Number of STEM Advanced Placement (AP) Courses Taken by Utah Students, by Graduation Year and Demographic Group, 2015-2017" the

following analyses were performed on UDRC data: All missing rows for the variables USBE_STEM_AP_COUNT, USBE_GENDER, USBE_ETHNICITY, and USBE_LOWINCOME were dropped. For the purposes of our analysis, the variable USBE_GRADUATION_YEAR was filtered to only include years 2015-2017. Next, descriptive statistics regarding the number of STEM AP courses taken by Utah students were computed by graduation year and by variable. Means were the descriptive statistics selected to indicate the number of STEM AP courses taken by each demographic group included in the analysis. All means were rounded to the nearest whole number for the purposes of our analysis.

To derive data for the chart titled "Enrollment of 12th Grade Students in Advanced Math Courses, by Demographic Group, 2019" 2019 data were used that was made accessible through the UEPC's data share agreement with USBE. Math core codes in the data were grouped using categories pre-defined by the USBE—that is, Advanced, Applied, and Foundation. These groupings were used in generating the percentages of 12th grade students enrolled in Advanced math courses by demographic group.

Postsecondary Tab

To derive data for the chart titled, "Percentage of STEM Undergraduate and Graduate Degree Recipients Among Utah Public High School Graduates, 2016-2019" the following analyses were performed on UDRC data: When data were provided in the column UGRAD_STEM_CIPS for a given PERSON ID, the PERSON ID (representing a student) was coded as having received a STEM undergraduate degree. When data were provided in the column GRAD_STEM_CIPS for a given PERSON ID, the PERSON ID (representing a student) was coded as having received a STEM graduate degree. When data were provided in the column OTHER_DEG_CIPS for a given PERSON ID, the PERSON ID (representing a student) was coded as having received a non-STEM undergraduate or graduate degree. The determination to code non-STEM degrees as either undergraduate or graduate was made based on a coding schema for degrees provided by the UDRC. For the purposes of our analysis, the variable USHE_GRADUTION_YEAR was filtered to only include years 2016-2019. Next, descriptive statistics were computed by graduation year and by postsecondary level (i.e., undergraduate and graduate). The resulting output were the percentages of USHE students who received STEM and non-STEM undergraduate and graduate degrees by graduation year. It is important to note here, as indicated under the chart, that the postsecondary data provided by the UDRC only included individuals who graduated from Utah public schools and went on to attend USHE institutions. Also, the percentages represented in the associated chart were rounded to the nearest whole number.

To derive data for the chart, "Percentage of STEM Undergraduate and Graduate Degree Recipients by Demographic Group Among Utah Public High School Graduates, 2016-2019" the following analyses were performed on UDRC data: When data were provided in the column UGRAD_STEM_CIPS for a given PERSON ID, the PERSON ID (representing a student) was

coded as having received a STEM undergraduate degree. When data were provided in the column GRAD_STEM_CIPS for a given PERSON ID, the PERSON ID (representing a student) was coded as having received a STEM graduate degree. When data were provided in the column OTHER_DEG_CIPS for a given PERSON ID, the PERSON ID (representing a student) was coded as having received a non-STEM undergraduate or graduate degree. The determination to code non-STEM degrees as either undergraduate or graduate was made based on a coding schema for degrees provided by the UDRC. For the purposes of our analysis, the variable USHE_GRADUTION_YEAR was filtered to only include years 2016-2019. Next, descriptive statistics were computed by graduation year, by variable (USBE_GENDER, USBE_ETHNICITY, and USBE_LOWINCOME), and by postsecondary level (i.e., undergraduate and graduate). The resulting output were the percentages of USHE students who received STEM and non-STEM undergraduate and graduate degrees by demographic group and by graduation year. It is important to note here, as indicated under the chart, that the postsecondary data provided by the UDRC only included individuals who graduated from Utah public schools and went on to attend USHE institutions. Also, the percentages represented in the associated chart were rounded to the nearest whole number.

To derive data for the chart, "Composition of Undergraduate and Graduate STEM Degree Recipients by Field of Study Among Utah Public High School Graduates, 2016-2019" the following analyses were performed on UDRC data: When data were provided in the column UGRAD_STEM_CIPS for a given PERSON ID, the PERSON ID (representing a student) was coded as having received a STEM undergraduate degree. When data were provided in the column GRAD_STEM_CIPS for a given PERSON ID, the PERSON ID (representing a student) was coded as having received a STEM graduate degree. When data were provided in the column OTHER_DEG_CIPS for a given PERSON ID, the PERSON ID (representing a student) was coded as having received a non-STEM undergraduate or graduate degree. The determination to code non-STEM degrees as either undergraduate or graduate was made based on a coding schema for degrees provided by the UDRC. For the purposes of our analysis, the variable USHE_GRADUTION_YEAR was filtered to only include years 2016-2019. Additionally, degree attainment data were filtered to include only students who received either undergraduate or graduate degrees from the following four STEM fields (Engineering, Mathematics and Statistics, Computer Science, and Physical Sciences). Next, descriptive statistics were computed by graduation year, by variable (USBE_GENDER, USBE_ETHNICITY, and USBE_LOWINCOME), by STEM field, and by postsecondary level (i.e., undergraduate and graduate). The resulting output provided data on the gender, racial/ethnic, and Free or Reduced Lunch composition of undergraduate and graduate degree recipients in each of the identified STEM fields. It is important to note here, as indicated under the chart, that the postsecondary data provided by the UDRC only included individuals who graduated from Utah public schools and went on to attend USHE institutions. Also, due to small sample sizes fine disaggregations between student populations were not always possible.

The chart titled, "Number of STEM Degrees Awarded by USHE, 2008-2019" utilized publicly accessible data from annual USHE Data Books published between 2010 and 2020. Data were used as obtained.

Workforce Tab

The chart titled, "Median Wages and Expected Growth Rates for STEM Occupations in Salt Lake City, Utah, and the United States" utilized publicly accessible data from BLS and DWS. Data were used as obtained. Median wage data for Salt Lake City, Utah, and the United States are from 2018. Expected annual job growth rate data for Salt Lake City and Utah are 2016-2026 projections. Expected annual job growth rate data for the United States are 2018-2028 projections.

The chart titled, "Job Placement Rates of USHE STEM Bachelor's Degree and Post-Baccalaureate Certificate Earners By Field of Study, 2018" utilized publicly accessible 2018 data from USHE. Data were used as obtained.

The chart titled, "Industry of Employment of USHE STEM Postsecondary Graduates 1 Year Post-Graduation, By Field of Study, 2018" utilized publicly accessible 2018 data from USHE. Data were used as obtained.

The chart titled, "Median Wage Outcomes of USHE STEM Bachelor's Degree Recipients by Field of Study, 1 Year and 5 Years Post-Graduation, 2014" utilized publicly accessible 2014 data from USHE. Data were used as obtained.

Data Share Agreements

Secondary data accessed to inform these dashboards were gathered under the guidance of Data Share Agreements with the Utah State Board of Education and the Utah Data Research Center. In keeping with the UEPC's Data Share Agreement with UDRC, we are providing the following disclaimer: Some of the data for this research was accessible through Utah's state longitudinal data system database administered by the Utah Data Research Center, which includes data supplied by UDRC members. This research, including the methods, results, and conclusions neither necessarily reflect the views of, nor are endorsed by, the UDRC members. All errors are the responsibility of the author.

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References

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Appendix

Listed below are the courses coded as STEM in our analysis.

Non-Advanced Placement (AP)/International Baccalaureate (IB) STEM Courses	
3D Animation	Foundations of Nutrition
3D Animation CE	Foundations of Nutrition CE
3D Graphics	Gaming Dev. Fundamentals CE
3D Graphics CE	Gaming Development Fundamentals
3D Graphics UTech	Gaming Development Fundamentals II
7th Grade Mathematics	Genetics
7th Grade Mathematics Essential Elements	Genetics CE
7th Grade Mathematics- Honors	Geology
7th Grade Mathematics- SPED	Geology CE
8th Grade Mathematics	GIS Remote Sensing
8th Grade Mathematics Essential Elements	HTML5 Application Devel Fundamentals CE
8th Grade Mathematics- SPED	HTML5 Application Development Fundamentals
8th Grade Mathematics-Honors	Human Biology
A.P. Computer Science	Human Biology CE
A.P. Computer Science Principles	Human Physiology
A+ (Computer Repair/Maint) CE	Human Physiology CE
A+ (Computer Repair/Maint) UTech	Industrial & Agricultural Technology
A+ (Computer Repair/Maintenance)	Information & Communications Technology

Advanced Agricultural Mech CE	Information Technology
Advanced Agricultural Mechanics	Integrated Science
Advanced Computer Programming	Integrated Science (Grade 7)
Advanced Computer Programming CE	Integrated Science (Grade 7) - SPED
Advanced Computer Programming UTech	Integrated Science (Grade 8)
Advanced Health Science	Integrated Science (Grade 8) -SPED
Advanced Health Science CE	Integrated Science 7 Extended Core SPED
Aeronautics	Integrated Science 8 Extended Core SPED
Aerospace	Intro to Health Science
Agric Science & Tech Applic CE	Intro to Information Tech UTech
Agric Science and Tech Application	Intro to Physical Therapy
Agricultural Biotechnology	Intro to Python 1
Agricultural Machinery Technology	Intro to Python 2
Agricultural Science I	Introduction to Geo Info CE
Agricultural Science II	Introduction to Geographic Information S
Agricultural Systems and Tech II CE	Introduction to Information Tech CE
Agricultural Systems and Technology I	Introduction to Information Technology
Agricultural Systems and Technology II	Introductory Calculus
Algebra	Investigation Science
Algebra 2 (9-12)	Linux Fundamentals
Algebra 2 (9-12) - SPED	Linux Fundamentals CE
Algorithms & Data Structures	Linux Fundamentals UTech
Algorithms & Data Structures CE	Marine Biology/Oceanography
Anatomy and Physiology	Marketing Operations
Anatomy and Physiology CE	Math Grade 12 Essential Elements
Animal Science I	Math. Decision Making for Life CE (1030)
Animal Science II	Math. Electives-Alg or higher CE (1060)
Animal Science II CE	Mathematical Decision Making for Life
AR/VR Augmented & Virtual Reality	Mathematics
Astronomy	Mathematics - Grade 6
Astronomy CE	Mathematics 6 - SPED
Biological Science	Mathematics Electives - Remedial
Biology	Mathematics Electives-Algebra or Higher
Biology - Agricultural Science	Mathematics Grade 3
Biology - SPED	Mathematics Grade 3 SPED
Biology Elective	Mathematics Grade 4
Biology Elective CE	Mathematics Grade 4 SPED
Biology Extended Core SPED	Mathematics Grade 5

Biology with Lab CE	Mathematics Grade 5 SPED
Biology/Agriculture Science & Technology	Mathematics of Personal Finance
Biomanufacturing 1	Medical Anatomy & Physiology
Biomanufacturing 2	Medical Anatomy & Physiology CE
Biotechnology	Medical Anatomy & Physiology UTech
Biotechnology CE	Medical Assistant
Biotechnology UTech	Medical Assistant UTech
Botany	Medical Forensics
CAD Architectural Design 1	Medical Forensics CE
CAD Architectural Design 1 CE	Medical Math
CAD Architectural Design 1 UTech	Medical Technology
CAD Architectural Design 2	Medical Terminology
CAD Architectural Design 2 CE	Medical Terminology CE
CAD Architectural Design 2 UTech	Medical Terminology UTech
CAD Architectural Design 3	Medication Aide UTech
CAD Architectural Design 3 CE	Meteorology
CAD Architectural Design 3 UTech	Meteorology CE
CAD Mechanical Design 1	Microsoft Certified Pro (MCP) CE
CAD Mechanical Design 1 CE	Microsoft Certified Pro (MCP) UTech
CAD Mechanical Design 1 UTech	Microsoft Certified Professional (MCP)
CAD Mechanical Design 2	Mobile Development Fundamentals
CAD Mechanical Design 2 CE	Mobile Development Fundamentals UTech
CAD Mechanical Design 2 UTech	Modern Mathematics
CAD Mechanical Design 3	Natural Resource Science I
CAD Mechanical Design 3 CE	Natural Resource Science I- Semester A
CAD Mechanical Design 3 UTech	Natural Resource Science II
Calc Elect. CE (Math 1210/20 & 2210)	Natural Resource Science II CE
Calculus	Network+
Chemistry	Network+ CE
Chemistry (9-12)	Network+ UTech
Chemistry Elective CE	New and Emerging Technologies
Chemistry Extended Core SPED	Nurse Assistant (CNA)
Chemistry with Lab	Nurse Assistant (CNA) CE
Chemistry with Lab CE	Nurse Assistant (CNA) UTech
Cisco Certified Networking Assoc (CCNA)	Other Mathematics
Cloud Computing	Pharmacy Technician
College Prep Math	Pharmacy Technician CE
College Prep Math CE (Math 1010)	Pharmacy Technician UTech

Computer Programming 2	Phlebotomy Technician UTech
Computer Programming 2 CE	Physics
Computer Programming 2 UTech	Physics (9-12)
Computer Programming I	Physics Extended Core SPED
Computer Programming I CE	Physics no Lab CE
Computer Science & Software Engineering	Physics with Lab CE
Computer Science Applications	Physics with Technology
Computer Science I	Physics with Technology CE
Computer Science II	Pipe Welding Processes UTech
Computer Science Principles	Plant and Soil Science I
Computer Science Principles CE	Plant and Soil Science I CE
Computer Science Principles UTech	Plant and Soil Science II
Computer Technology	PLTW Aerospace Engineering
Coputer Programming I UTech	PLTW Civil Engineering & Architecture
Creative Coding	PLTW Digital Electronics
CTE / Health Science	PLTW Engineer Design & Develop
CTE / Information Technology	PLTW Into to Engineering Design
CTE / Skilled & Technical Sciences	PLTW Principles of Engineering
CTE / Technology & Engineering	Precalculus (10-12)
CTE Technology & Engineering 6th Grade	Precalculus Elective CE (Math 1050)
Cybersecurity Ethical Hacking	Psychology
Cybersecurity Ethical Hacking CE	Robotics 1
Cybersecurity Ethical Hacking UTech	Robotics 2
Cybersecurity Forensics	Science
Cybersecurity Forensics	Science (Grade 6)
Database Development	Science (Grade 6) - SPED
Database Development CE	Science Elective
Dental Assistant	Science Grade 3
Dental Assistant UTech	Science Grade 3 SPED
Digital Media I	Science Grade 4
Digital Media I- CE	Science Grade 4 SPED
Digital Media I UTech	Science Grade 5
Digital Media II	Science Grade 5 SPED
Digital Media II- CE	Science Research
Digital Media II UTech	Secondary Math 1 Essential Elements
Earth Science	Secondary Mathematics (7-12)
Earth Science (9-12)	Secondary Mathematics I
Earth Science (9-12) - SPED	Secondary Mathematics I- SPED

Earth Science Extended Core SPED	Secondary Mathematics I-Honors
Economics	Secondary Mathematics II
Economics	Secondary Mathematics II Essential Eleme
Economics (9-12)	Secondary Mathematics II- Honors
Economics CE	Secondary Mathematics II- SPED
Economics Elective CE	Secondary Mathematics III
ELD Math Co-Teaching	Secondary Mathematics III Essential Elem
Electronics 1	Secondary Mathematics III- Honors
Electronics 1 CE	Secondary Mathematics III- SPED
Electronics 1 UTech	Small & Companion Animcal Science
Electronics 2	Sp.Ed. Science Co-teacher (6-8)
Electronics 2 CE	Sp.Ed. Science Co-teacher (9-12)
Electronics 3	SPED Math Co-teacher (6-8)
Electronics 3 CE	SPED Math Co-teacher (9-12)
Elementary Mathematics	Statistics
Elementary Science	Statistics (10-12)
Emergency Medical Responder	Statistics Elective CE (Math 1040)
Emergency Medical Responder CE	STEM Concepts
Emergency Medical Responder UTech	Supplemental Secondary Math
Emergency Medical Tech (EMT) CE	Supplemental Secondary Math SPED
Emergency Medical Technician (EMT)	Surgical Technology
Emergency Medical Technician (EMT) UTech	Surgical Technology CE
Engineering Capstone	Surgical Technology UTech
Engineering Capstone CE	Sustainable Urban Agriculture
Engineering Education	Systems Engineering
Engineering Principles 1	Technology Education
Engineering Principles 2	Veterinary Assisstant II
Engineering Principles 2 CE	Veterinary Assisstant UTech
Engineering Related Technologies	Veterinary Assistant I
Engineering Technology	Web Development Capstone
Environmental Science	Web Development I
Environmental Science CE	Web Development I- CE
Environmental Technician	Web Development I UTech
Environmental Technician CE	Web Development II
Equine Science 1	Welding Tech - Entry Level UTech
Equine Science 2	Welding Tech - Intrm Level UTech
Essential Elements Math	Welding Technician - Adv Level

Essential Elements Science Extended Core	Welding Technician - Adv Level CE
Exercise Science / Sports Med CE	Welding Technician - Adv Level UTech
Exercise Science / Sports Med UTech	Welding Technician - Entry Level
Exercise Science / Sports Medicine	Welding Technician - Entry Level CE
Exploring Computer Science I (CS)	Welding Technician - Intrm Level
Exploring Computer Science II	Welding Technician - Intrm Level CE
Food and Nutrition I	Wildlife Biology
Food and Nutrition II	Zoology
Food Science	Zoology CE (ZOOL 1010)
Forensic Science	
AP/IB STEM Courses	
A.P. Calculus (AB) (10-12)	IB Environmental Systems & Soc SL1
A.P. Calculus (BC) (10-12)	IB Environmental Systems & Soc SL 2
A.P. Statistics (10-12)	A.P. Physics 1: Algebra Based
IB Mathematical Studies SL 1	A.P. Physics 2: Algebra Based
IB Mathematical Studies SL 2	A.P. Physics C - Mechanics
IB Mathematics: Double Blocked SL	A.P. Physics C - Electricity & Magnetism
IB Mathematics SL 1	IB Physics SL 1
IB Mathematics SL 2	IB Physics SL 2
IB Mathematics HL 1	IB Physics HL 1
IB Mathematics HL 2	IB Physics HL 2
IB Further Mathematics HL 1	A.P. Economics - Macro
IB Further Mathematics HL 2	A.P. Economics - Micro
A.P. Biology	IB Economics SL 1
IB Biology SL 1	IB Economics SL 2
IB Biology SL 2	IB Economics HL 1
IB Biology HL 1	IB Economics HL 2
IB Biology HL 2	IB Computer Science SL 1
A.P. Chemistry	IB Computer Science SL 2
IB Chemistry SL 1	IB Computer Science HL 1
IB Chemistry SL 2	IB Computer Science HL 2
IB Chemistry HL 1	IB Sports, Exercise & Health Sci HL1
IB Chemistry HL 2	IB Sports, Exercise & Health Sci HL2
A.P. Environmental Science	