



COURSE CATALOG  
2017-2018

## Welcome to the... **GRANITE TECHNICAL INSTITUTE**

The Department of Career and Technical Education in Granite School District has a well-earned reputation for providing high-quality programs that are targeted at high-demand industries. To further this focus, the *Granite Technical Institute* offers courses in Health Science, Technology & Engineering, Information Technology, Biotechnology, Culinary Arts, Aviation, Agriculture and Home Building/Construction.

The **mission** of the *Granite Technical Institute* is to support students in finding personal purpose, potential and a pathway to their future. This is accomplished by helping students achieve in their program and move seamlessly into further training and employment. Effort is made to directly align critical academic subjects with career and technical education courses, thus promoting real-world application of academic theory in such areas as mathematics, science and English. In addition, articulation and collaboration with Salt Lake Community College and other post-secondary institutions makes the transition to post high school education easier for students. Clear pathways of training have been designed to support student growth from the 9<sup>th</sup> through the 12<sup>th</sup> grades. Courses being offered during the 2017-2018 school year are included in the pages that follow.

CE \*\* Concurrent Enrollment College Course - Many of the courses offered here at the GTI are concurrent college courses; **11<sup>th</sup> and 12<sup>th</sup> grade** students can receive high school and college credit for successfully completing the course. **It is the student's responsibility to apply (\$40.00 non-refundable fee) to the Salt Lake Community College by AUGUST 15<sup>TH</sup>.** Students must also pay (to the college) a \$5.00 fee per credit hour (non-refundable).

**Busing will be provided for students twice daily from the student's home high school to the GTI. All courses listed in this catalog will be taught at the Granite Technical Institute (2500 South State Street) unless otherwise specified. This schedule is designed to accommodate two-period block enrollments. Students interested in registering for these courses should see the Career Center Coordinator at their high school. Questions regarding the Granite Technical Institute can be directed to Devon Hartley at 385-646-4350, email: [djhartley@graniteschools.org](mailto:djhartley@graniteschools.org) or Julie Bagley, GTI Counselor at 385-646-4629, email: [jibagley@graniteschools.org](mailto:jibagley@graniteschools.org)**

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## HOW TO REGISTER

In order to register for any of the classes offered through the Granite Technical Institute, pick up an application in the Career Center of their high school. Once the application is complete and signed by both the student and their guardian return to the Career Center for review and approval by the Career Center Coordinator. The Career Center Coordinator will then help the student determine whether additional information is required and will help facilitate the scheduling process.

### **9<sup>th</sup> Grade student registration procedure still at the Jr. Highs.**

Ninth grade students who wish to access designated courses must work out their class schedules individually with their guidance counselor. Fill out a C.T.E. application and return it to the guidance counselor who will then notify the appropriate high school. (Please note that the student will NOT be enrolled in the class(s) unless they turn in the application). Students must also arrange their own transportation to and from the nearest high school where they will catch the bus to the G.T.I. The bell schedules and the bus schedule for the G.T.I. are available at <http://gti.graniteschools.org>

**CE \*\* Concurrent Enrollment College Course**

## ACADEMIES OF BUSINESS

The most popular bachelor's degree in the United States is in Business (22% of all bachelor's degrees). The Academy of Finance is new this year to the G.T.I. The Academies are affiliated with SLCC to allow students to earn concurrent college credit. Students will enroll in two courses each semester. If students graduate from the Academies, they fulfill at least 1 Utah State Pathway. This program requires all students to be concurrently enrolled through Salt Lake Community College.

### **ACADEMY OF HOSPITALITY & TOURISM**

*Year (2 period block) 11-12 grade*

**\$25 fee per course required per semester**

The Academy of Hospitality & Tourism is a two-year program for sophomores, juniors and seniors with career interests in the business of hospitality and tourism. The comprehensive curriculum includes business management, marketing, accounting, hospitality services, travel and tourism, desktop publishing, customer service, and business communication. Students take four semester classes each year for a two-year period. Familiarization tours & job shadows are taken to expose the students to possible careers in the industry. Possible familiarization tours include; Arches National Park, Goblin Valley State Park, Zion National Park, Dead Horse Point, Canyonlands National Park, Bryce Canyon National Park, The Grand America Hotel, Marriott, Intercontinental Hotels Group & many others. Students can earn up to 9 college credits in this two-year program. Additional Fees may be incurred for optional field trips offered to students. **Note: Open to sophomores, juniors, and seniors for the 2017-2018 school year for 3B/4B Block.**

#### **Fall 2017 Semester Courses:**

Management 1600: Management Essentials **CE**  
Lodging & Recreation

#### **Spring 2018 Semester Courses:**

Business Communications I\*  
Accounting I\*\* or Event Planning (depending on state availability)

#### **Fall 2018 Semester Courses:**

Marketing 1030: Introduction to Marketing **CE**  
Hospitality & Tourism I

#### **Spring 2019 Semester Courses:**

Sports & Entertainment Marketing  
PS 1304: Introduction to Client Care **CE** (Weber State)

\*English Credit \*\*Math Credit

### **ACADEMY OF FINANCE**

*Year (2 period block) 11-12 grade*

**\$25 fee per course required per semester**

The Academy of Finance is a two-year program for juniors and seniors who are interested in a career in the business of financial services. The curriculum includes economics, accounting, financial planning and products, banking, and marketing. Students take four semester classes each year during their junior and senior years. Students can earn up to 21 college credits in this two-year program. **Note: Open to juniors and seniors for the 2017-2018 school year.**

#### **Junior Academy 1A/2A Block:**

#### **Fall 2017 Semester Courses:**

Accounting I **CE**\*  
Finance 1050 **CE**\*\*\*

#### **Spring 2018 Semester Courses:**

Accounting II **CE**  
Economics **CE**

#### **Fall 2018 Semester Courses:**

Marketing 1030: Introduction to Marketing **CE**  
Customer Service **CE**

#### **Spring 2018 Semester Courses:**

Management 1600: Management Essentials **CE**  
Business Communications I\*\*

**Senior Academy 1B/2B Block: (Students in YEAR ONE get priority registration)**

#### **Fall 2017 Semester Courses:**

Management 1600: Management Essentials **CE**  
Finance 1050 **CE**\*\*\*

#### **Spring 2018 Semester Courses:**

Business Communications I\*\*  
Economics **CE**

## ACADEMY OF EDUCATION

### **ORIENTATION TO EDUCATION CE \*\***

*Semester 11-12 grade*

**\$20 Course fee required per semester**

*(Taken with Lifespan Human Development = 2 period block)*

Teaching as a career - challenges and rewards, history, philosophies, social issues, legal issues, job availability, and governance. Preparation for acceptance into a teacher education program. Field experience required. All students will have time in an elementary class room as part of this class. *This course offers concurrent enrollment through SLCC EDU1010 3.0 credit hours.* Student is responsible to register and pay for concurrent enrollment classes at SLCC.

### **LIFESPAN HUMAN DEVELOPMENT CE \*\***

*Semester 11-12 grade*

**\$20 Course fee required per semester**

Fundamentals of growth and development from preconception to old age and death are explored. The domains of physical, cognitive, and social-emotional growth for each age in the life cycle are explored in a variety of contexts. *This course offers concurrent enrollment through SLCC FHS 1500, 3.0 credit hours.* Student is responsible to register and pay for concurrent enrollment classes at SLCC.

## AGRICULTURAL SCIENCE

*Agriculture is the nation's largest employer, with more than 21 million people working in some phase of industry from growing food and fiber to selling it in the supermarkets. The mission of Agricultural Science and Technology Education is to prepare students for employment and/or continuing education opportunities in the field of agriculture. This is accomplished through technical instruction in the classroom, experiential education in the laboratory, the Supervised Agricultural Experience Program, and through leadership and personal development in FFA (Future Farmers of America-student organization).*

**Suggestion: If you take the Bio-Ag class first, it will give you a good foundation for all Agriculture Science classes.**

### **INTRO TO AQUACULTURE**

*Semester (2-period block) 9-12 grade*

**\$20 Course fee required per semester**

This hands-on course gives students an overview of the aquaculture industry. Students spend the majority of class time applying the course's content in practical ways in the greenhouse. Through raising and taking care of fish and aquaponic systems, students gain marketable skills and content knowledge with respect to breeding, production, water maintenance and monitoring as well as management. Students also have opportunity to join and compete in FFA events. **This course may also be taken to fulfill a third science credit requirement.**

### **ANIMAL SCIENCE I**

*Semester (2 period block) 9 - 12 grade*

**\$30 course fee required per semester**

Animal Science will provide students with the opportunity to explore the many aspects of the livestock industry. During this course, students will study breeds of dairy cattle, beef cattle, equine, sheep, swine, and poultry. Students will look at animal breeding and reproduction, housing facilities, proper management practices, and feeding and nutrition. Judging and showing of some of these livestock breeds will also be included. FFA involvement is recommended for all students enrolled in this course. **This course may also be taken to fulfill a third science credit requirement.**

### **ANIMAL SCIENCE II**

*Semester (2 period block) 10 - 12 grade*

**\$30 course fee required per semester**

**Prerequisite: Animal Science 1 or Equine Science**

Students will develop knowledge and skills in a wide range of animal agriculture principles, including anatomy and physiology, health maintenance, waste disposal and facilities. The efficient production and effective management of selected animal enterprises are covered, including beef and dairy cattle, swine, sheep, goats, poultry and equine. Practices in veterinary medicine and those associated with small animal care are included. FFA involvement is recommended for all students enrolled in this course.

## **BIOLOGY AGRICULTURAL SCIENCE (BioAg)**

*Semester (2 period block) 9-12 grades*

**\$20 Course fee required per semester**

This hands-on introductory course is biology with an agriculture emphasis. Students explore such biology topics as cells, inheritance, evolution, and ecology by doing hands-on experiments in the context of agriculture. Students have opportunity to compete in FFA. This course leads to other agriculture courses such as aquaculture, as well as animal, plant, and vet sciences. **This course fulfills 1 core biology credit.**

## **FLORICULTURE AND GREENHOUSE MANAGEMENT**

*Semester (2 period block) 9 - 12 grade*

**\$30 Course fee required per semester**

This intensive course in greenhouse operation and management prepares students to produce commercial plant species in a controlled environment and to manage commercial and experimental greenhouse operations. Studies will also include: basic plant biological systems, soil science, plant propagation, and floral design. The GTI and USU horticulture students share the greenhouse used for this course.

**This course may also be taken to fulfill a third science credit requirement.**

## **EQUINE SCIENCE 1 & 2**

*Semester (2 period block) 9-12 grades*

**\$30 Course fee required per semester**

This course prepares students to care for horses and horse equipment; to train horses for various work and athletic or entertainment roles; and to manage horse training, breeding, and housing programs and facilities.

**This course may also be taken to fulfill a third science credit requirement.**

## **INTRO TO HORTICULTURE**

*Semester (2 period block) 11-12 grades CE \*\* (PURE)*

**\$30 Course fee required per semester**

This course is an introduction to the production of nursery, greenhouse, fruit, and vegetable crops. Residential and commercial landscape construction and management will be explored, and students will learn about interior plants, arboriculture, turf science, landscape plant materials, and home gardening. This class is one of the first requirements for the USU Horticulture Major and also fulfills a Breadth Life Science requirement at USU. The GTI and USU horticulture students share the greenhouse used for this course. Students who major in Horticulture at USU can complete their entire program here at the GTI Campus with USU's extension campus on the 5<sup>th</sup> floor. Utah State concurrent enrollment credit PSC 1800-3 credits).

## **LANDSCAPE MANAGEMENT/ NURSERY OPERATION**

*Semester (2 period block) 9-12 grade*

**\$30 Course fee required per semester**

Students will develop knowledge and skills in nursery operation and landscape management practices that will prepare the students to select appropriate plant materials and to design, install, and maintain interior and exterior plantings and hardscapes. They will also learn to maintain the facilities and equipment associated with this industry.

## **NATURAL RESOURCE SCIENCE I**

*Semester (2 period block) 9-12 grade*

**\$10 Course fee required per semester**

This introductory course is designed to give students knowledge and skills related to production, management, and conservation of natural resources. Students explore such topics as ecology, range resources, waste management, and land use. Students will also be introduced to various careers in Natural Resource Science such as fish and game officer, water technician, and park manager. Hands-on field experience is emphasized at weekly trips to Wheeler Farm and other sites. **This course may also be taken to fulfill a third Science credit requirement.**

## **NATURAL RESOURCE SCIENCE II**

*Semester (2 period block) 9-12 grade*

**\$10 Course fee required per semester**

***Prerequisite: Natural Resource Science I***

This course builds upon knowledge and skills gained in Natural Resource Science I. In addition, it covers such topics as the biological, environmental, and economical importance of renewable natural resources, and forest and range products. Students will also be introduced to various careers in Natural Resource Science such as fish hatchery manager, wildlife officer, hunting outfitter/guide. Hands-on field experience is emphasized at weekly trips to Wheeler Farm and other sites. **This course may also be taken to fulfill a third Science credit requirement.**

## VETERINARY ASSISTANT 1

*Semester (2 period block) 10 - 12 grade*

**Prerequisite (one of the following): Animal Science I or Equine Science**

**\$30 Course fee required per semester**

This course is designed to encourage students to pursue a career in large animal veterinary practice. The program will focus on the following areas of study: safety and sanitation in veterinary science, veterinary terminology, anatomy and physiology, clinical examinations, hospital procedures, parasitology, Course oratory techniques, animal nutrition, principles of disease, animals in society, career exploration, and animal management. Students enrolled in this program will also have leadership opportunities through the FFA, a component that will be integrated into the vet assistant course. This course provides entry-level skills for those students who want to enter an occupation right out of high school and also provides the background necessary for students interested in pursuing a professional degree. Course oratory activities provide students with the hands-on experience and skills needed to participate in the exciting field of veterinary medicine. **This course may also be taken to fulfill a third science credit requirement.**

## AVIATION PROFESSIONAL PILOT PROGRAM

*In cooperation with Salt Lake Community College, high school students may enroll in the Aviation courses listed below and receive concurrent enrollment credit from SLCC. Exceptions to this format must be arranged through the G.T.I. administration.*

CE \*\* Concurrent Enrollment College Course

### 1st Semester classes

#### **PRIVATE PILOT GROUND SCHOOL CE \*\* (PURE)**

*Semester (2 period block) 11-12 grade (must be 17 by the end of the semester)*

**\$40 Course fee required per semester**

This course focuses on the study of aviation fundamentals, principals of flight, aircraft and engine operations, weather, navigation, and radio communications as required by FAA regulations. Students will be prepared to begin flight training. This course must be taken for SLCC concurrent enrollment credit PILT 1100, 4.0 credits.

#### **PRIVATE FIXED WING SIMULATOR LAB CE \*\* (PURE)**

*(Taught in conjunction with Private Pilot Ground School)*

Practical application in a simulation lab to include the information for private pilot flight maneuvers, procedures, and regulations for takeoff, cruise, traffic pattern operations, approach, emergencies, and cross-country operations. Time in the Simulator is based on size of the class. Taken concurrently with Private Pilot Ground School. This course must be taken from SLCC concurrent enrollment credit PILT 1110, 1.0 credits.

#### **AIRCRAFT SYSTEMS CE \*\* (PURE)**

*Semester (2 period block) 11-12 grade*

**\$20 Course fee required per semester**

This is an introductory course that provides pilots with an understanding of aircraft systems, components, and basic operations general to all aircraft. Included will be information about power plants, fuel, and electrical systems. This course must be taken for SLCC concurrent enrollment credit PILT 1420, 3.0 credits.

### 2nd Semester classes

#### **AIR TRANSPORTATION CE \*\* (PURE)**

*Semester (2 period block) 11-12 grade*

This course will introduce students to the development of aviation from earliest beginnings to modern day. Students will understand the relevance of significant aviation events, contributions from specific individuals, aircraft development, deregulation, administrative bodies and commercial companies. This course must be taken for SLCC concurrent enrollment credit PILT 1010, 3.0 credits, for qualified 11<sup>th</sup> and 12<sup>th</sup> grade students.

#### **AVIATION HISTORY CE \*\***

*Semester (2 period block) 10-12 grade (Suggestion, Sophomores start with this class)*

The history of aviation from the earliest times through the modern jet age will be explored. Students will discover significant aviation developments and how they came about. This course must be taken for SLCC concurrent enrollment credit PILT 1050, 2.0 credits, for qualified 10<sup>th</sup>-12<sup>th</sup> grade students.

## BIOTECHNOLOGY/BIOMANUFACTURING

CE \*\* Concurrent Enrollment College Course

### **BIOTECH RESEARCH CE \*\* (PURE)**

*Year (2 period block) 11–12 grades*

**\$20 Course fee required per semester**

This hands-on introductory course provides opportunity for students to explore the exciting emerging world of biotechnology. It provides a solid foundation for students who wish to pursue careers in fields such as bioengineering, biotechnology, and biological science among others. Developing marketable, hands-on lab skills is the course's primary objective. This objective is met as students work at the lab bench on such topics as DNA structure, gene expression, protein synthesis, recombinant DNA strategies, DNA testing, DNA sequencing, forensics, and bioethics. This course must be taken for SLCC concurrent enrollment credit BTEC1010, 3.0 credits, & BTEC 1015, 1.0 credit for qualified 11<sup>th</sup> and 12<sup>th</sup> grade students. **This course may be taken to fulfill a third science credit requirement.**

### **BIOMANUFACTURING 1 & 2**

*Year (2 period block) 10 –12 grades*

**\$20 Course fee required per semester**

This course offers a project-based introduction in areas such as nutritional supplements, cosmetics and biofuels. Projects include designing and producing nutritional supplements, biofuels, and novel raw ingredients and will include label verification and product presentation (marketing). Students will learn how to ensure and understand safety requirements in the medical, pharmaceutical, and dietary supplement industries. Industry facilities for biomanufacturing companies will be visited to explore possible career paths. The course will also cover the science, engineering and marketing skills necessary in biomanufacturing, as well as legal, social and ethical issues surrounding these industries. Students will have the unique opportunity of working in the same cutting edge lab and using the same equipment as college students and professionals. **This course may be taken for CTE credit or to fulfill a third science credit requirement.**

## CONSTRUCTION TRADES

This is a comprehensive construction experience where students, under the supervision of experienced, licensed contractors, help construct an entire house while participating in all phases of home construction or participate in a variety of commercial construction projects. Students may specialize in residential carpentry, commercial carpentry, electrical, or plumbing, with the ability to participate in all of these trades. This is an excellent experience for those interested in construction related careers, including construction management, or for those who want building and remodeling experience. Apprenticeship programs are available. **Transportation is provided to the construction site.**

### **ELECTRICAL TRADES CE \*\***

*Year (2 period block) 10–12 grades*

This is a comprehensive electrical experience where students are under the supervision of an experienced and licensed electrical contractor. Students will be engaged in the wiring of a home, which includes: the rough and finish wiring, electrical service, and all phone and data. Students will also experience many commercial projects around the district where they will learn conduit bending and the differences between residential and commercial wiring. In addition to hands-on projects, students will also learn the National Electrical Code and Electrical Theory. This class provides great experience for those interested in electricity and those who may want to be part of basic electrical installations and remodeling. Apprenticeship programs are available. This course may be taken for SLCC concurrent enrollment credit ELI 1110, 5.0 credits, for qualified 11<sup>th</sup> and 12<sup>th</sup> grade students.

### **HOME BUILDING (RESIDENTIAL CARPENTRY) CE \*\***

*Year (2 period block) 11–12 grades*

This is both an introductory and second year class that is designed to provide the student with a solid base of understanding and experience in the carpentry trade. Students will be exposed to this trade by constructing a residential home off site (bussing provided). This course will involve students with hands-on and learning activities in the building process from digging the foundation to shingling the roof. Other opportunities include: plan reading, concrete work, all phases of framing, insulation, drywall, electrical, plumbing, hanging doors & windows, interior doors and trim work, exterior finishes, painting. Construction Management is addressed and the class is also offered as a Salt Lake Community Concurrent class for sophomores, juniors & seniors. This class is fun and will provide valuable training and experience that can be used in a career or for personal remodeling or construction projects. This course may be taken for SLCC concurrent enrollment credit CMGT1320, 4.0 credits and CMGT 1330, 4.0 credits, CMGT 1410, 2.0 credits for qualified 11<sup>th</sup> and 12<sup>th</sup> grade students.

## **PLUMBING CE \*\***

*Year (2 period block) 10–12 grades*

This is a comprehensive construction experience where students, under the supervision of an experienced licensed contractor, participate in a variety of commercial construction projects. Students may specialize in plumbing with the opportunity to participate in all trades. This is an excellent experience for those interested in construction-related careers, including construction management, or for those who want building and remodeling experience. Apprenticeship programs are available. This course may be taken for SLCC concurrent enrollment credit PLI 1110, 5.0 credits for qualified 11<sup>th</sup> and 12<sup>th</sup> grade students.

## **CONSTRUCTION TRADES FOUNDATION 1**

*Semester (2 period block) 9-12 grades*

Construction Trades Foundation 1 is designed to introduce students to the basic skills needed for an entry-level position in the construction field. Students will be exposed to basic safety, which complies with OSHA-10 training. Students will work with construction math. They will be adding, subtracting, dividing, and multiplying whole numbers, fractions, and decimals, and explain their application to the construction trades. Students will learn about the safe use of hand and power tools used in the industry and will be familiarized with reading, interpreting, and applying construction drawings. Students will be taught about basic rigging. They will also be introduced to material handling and recognizing hazards associated with the construction industry. The communication skills needed for job interviews and working with co-workers and supervisors will be emphasized. This class will be a great experience for those interested in the construction industry.

## **CONSTRUCTION TRADES FOUNDATION 2**

*Semester (2 period block) 9-12 grades*

Construction Trades Foundation 2 provides students with the opportunity to explore many areas of the construction industry. Licensed contractors teach this class, and students will be able to work through learning modules at their own pace and in several areas. Students will be exposed to site lay out and distance measurements; concrete and masonry; floor systems; wall, ceiling, and roof framing; and roofing applications. They will be taught basic stair layout and exterior finish and will learn about electrical safety and residential electrical installation. Students will also be introduced to drain, waste and vent systems using plastic and copper pipe and fittings for residential construction. This is an excellent class for those who want to learn about the construction industry.

## **CRIMINAL JUSTICE**

**The Criminal Justice course is designed to prepare students for an exciting career in the Field of Law or Law Enforcement. Students will learn about many diverse job opportunities that are available such as Patrol Officer, Swat Team member, Detective, k-9 Officer and other disciplines such as careers in Federal Agencies such as FBI, Secret Service and ATF. Students will have the opportunity to meet professionals in the field and participate in simulated scenarios, demonstrations and tour pertinent Law Enforcement sites.**

## **INTRO TO CRIMINAL JUSTICE**

*Semester 11-12 grade*

**(Taken with Intro to Corrections = 2 period block)**

**\$40 Course fee required per semester**

Students will gain an understanding of Criminal Law and punishments, the constitution, individual rights and general principals of criminal liability. They will also learn about crimes against persons and crimes against property. The students will also participate in various debates involving our current laws and regulations. CTE credit or Elective credit: up to 2 credits total. *This course offers SLCC concurrent enrollment credit CJ 1010, student is responsible to register and pay for concurrent enrollment classes at SLCC.*

## **INTRO TO CORRECTIONS - CE \*\***

*Semester 11-12 grade*

**(Taken with Intro to Criminal Justice = 2 period block)**

This course examines the history, function and administration of corrections in our criminal justice system. *This course offers SLCC concurrent enrollment credit CJ1300, 3 credits.* Student is responsible to register and pay for concurrent enrollment classes at SLCC.



### **CRIMINAL LAW - CE \*\***

*Semester 11-12 grade*

**(Taken with Career in Law Enforcement = 2 period block)**

**\$40 Course fee required per semester**

The students will become familiar with all the various careers in Law Enforcement. They will learn the steps involved to become a Police Officer or a Federal Officer. They will participate in an Oral Board interview and the Police physical fitness test. They will be given instruction on officer safety issues and will learn how to build a professional resume. *This course offers SLCC concurrent enrollment credit CJ1330.* Student is responsible to register and pay for concurrent enrollment classes at SLCC.

### **CAREER IN LAW ENFORCEMENT CE \*\***

This course provides an insight into the workings and hiring practices of various law enforcement agencies such as ATF, DEA, FBI and local county, and state police agencies. *This course offers SLCC concurrent enrollment credit CJ2540, 3 credits.* Student is responsible to register and pay for concurrent enrollment classes at SLCC.

### **FIRE SCIENCE - CE \*\***

*Semester 11-12 grade*

**REQUIREMENT:** Due to some strenuous physical activities, the student must pass a physical entrance test and must obtain a physician's approval based on such requirements.

This is a program that prepares individuals to perform the duties of a firefighter. Instruction includes training in safety, firefighting, equipment operation, maintenance, and the principles of the fire science. Introduces the basic principles and history related to the national firefighter life safety life safety initiatives. Focuses on the need for cultural and behavior change throughout the emergency services. This high school based firefight development course is derived from Utah State Fire Fighter Standards, NFPA, IFSAC, current United Fire Authority standards and the experience of an instructor cadre from multiple jurisdictions. This course offers concurrent through Utah Valley University, ESFF 1000 3.0 & ESFF 1120 3.0 credit hours. Student is responsible to register and pay for concurrent enrollment classes at UVU.

## **CULINARY ARTS**

*It's no secret that the restaurant and food service industry is growing. In fact, it is estimated that from 2012 to 2020 the number of jobs in the restaurant and food service industry is projected to increase by 21 million, of which approximately 50,000 will be management positions!*

### **CULINARY MANAGEMENT I**

*Semester (2 period block) 11-12 grade*

**\$25 Course fee required per semester**

**Prerequisites:** *Food and Nutrition 1 & 2*

**Requirement:** *Students must hold a current food handler's permit.*

This is an advanced course in restaurant management and food service. This course focuses on preparing students for Careers in the restaurant management and food service industry. Students will learn and practice hands on skills dealing with safety, sanitation, customer relations, food preparation, menu planning, cost controls, marketing, and communication. Students will also be required to develop a professional portfolio related to food services. A "Certificate of Achievement" from the National Restaurant Association is available upon completion of this program and verified documentation of required externship hours with a mentor in the food service industry. **Students must have a social security number to qualify for the National Certificate.**

### **CULINARY MANAGEMENT 2**

*Semester (2 period block) 11-12 grade*

**\$25 Course fee required per semester**

**Prerequisites:** *Culinary Management 1*

**Requirement:** *Students must hold a current food handler's permit.*

This class is a continued advanced course in restaurant management and food service. This course focuses on preparing students for Careers in the restaurant management and food service industry. Students will learn and practice hands on skills dealing with safety, sanitation, customer relations, food preparation, menu planning, cost controls, marketing, and communication. Students will also be required to develop a professional portfolio related to food services. A "Certificate of Achievement" from the National Restaurant Association is available upon completion of this class, Culinary Management 1, and verified documentation of required externship hours with a mentor in the food service industry. **Students must have a social security number to qualify for the National Certificate.**

## CULINARY ARTS

*Semester (2 period block) 10-12 grade*

**\$25 Course fee required per semester**

**Prerequisites: Food and Nutrition 1 & 2**

Students will be trained for career opportunities in the food service/culinary arts industry. Students will have the opportunity to learn and practice safety and sanitation procedures and to use and maintain commercial food service equipment. They will perform quantity food preparation as it relates to catering, bakery, restaurant, hospitality, and fast food business operations.

## GENERAL CONCURRENT CLASSES

### BIOLOGY WITH LAB CE \*\*

*Semester 11-12 grade*

**\$40 Course fee required per semester**

**This course content: biological chemistry, cell structure, metabolism, genetics, evolution, and diversity. Additional lab component (BIOL 1615) required.** *This course offers concurrent enrollment through SLCC BIOL 1610 & 1615, 4.0 credit hours.* Student is responsible to register and pay for concurrent enrollment classes at SLCC.

### CHEMISTRY WITH LAB CE \*\*

*Semester 11-12 grade*

**\$40 Course fee required per semester**

Survey of general chemistry: structure, composition, properties and chemical transformations. *This course offers concurrent enrollment through SLCC CHEM 1010, 3.0 credit hours.* Student is responsible to register and pay for concurrent enrollment classes at SLCC.

## HEALTH SCIENCE TECHNOLOGY

CE \*\* Concurrent Enrollment College Course

*Our Health and Medical Programs are some of our most popular as students recognize that there is a high demand for skilled health care professionals. Students can graduate from high school as a Nursing Assistant, Medical Assistant, EMT, or Pharmacist Technician and make \$9-\$14 an hour and be better prepared for nursing school, medical school, pharmacy school or any other medical profession.*

### CERTIFIED NURSE ASSISTING

*Semester (2 period block) 11-12 grade*

**\$30 Course fee required per semester**

**Requirement: You must be 16 yrs. old when you begin the course.**

***It is recommended that students take Medical Terminology prior to taking this course.***

This program prepares students to perform routine nursing-related services to patients in hospitals or long-term care facilities under the training and supervision of a registered nurse or licensed practical nurse. Students learn basic nursing skills such as taking and recording vital signs and recognizing abnormal changes in body functioning. Basic areas of study include: basic nursing skills, personal care skills, mental health and social service needs, care of cognitively impaired residents, basic restorative services and resident rights. A 46-hour clinical experience is required in a nursing facility to complete course requirements. Clinical is from 3:00 – 8:00 p.m. one day per week and two Saturdays from 6:00 a.m.– 2:00 p.m. Students must supply their own uniforms; watches with sweep second hands, pens, and small notebooks. An additional .25 credit will be earned by completing clinical hours. Students must have good social skills, good attendance, and the ability to get themselves to their clinical experiences. Some college and university nursing programs require a CNA for admission to their program. **Students must provide a social security or IRS number in order to take the state C.N.A. exam.** State certification exam is \$75.

### DENTAL ASSISTING I

*Semester (2 period block) 11-12 grade*

**\$40 Course fee required per semester**

Dental Assisting I: Introduces students to the field of dental assisting. Students will learn basic patient care skills in preparation to assist a dentist or dental hygienist in functions of a dental practice. Skills include: infection control procedures, patient preparation, examination, preventive care, dental materials, and restorative and specialty procedures.

## DENTAL ASSISTING II

*Semester (2 period block) 11-12 grade*

**\$40 Course fee required per semester**

**Prerequisite: Completion of Dental Assisting I**

Dental Assisting II: Students will complete their training with dental imaging, laboratory skills: bleaching trays, custom trays, sports guards, front office training in the Dentimax system and expanded function skills. Students will learn job-seeking skills to aid in obtaining a 90-hour externship for fourth term. **Dental Assisting I** and **Dental Assisting II** **ARE NOT** accredited through the Dental Assisting National Board (DANB). Students are eligible to sit for the certification test upon graduation from high school, completion of 3500 hours of approved work experience, and have a current CPR certificate. It is not required in Utah to be a CDA in order to work as a chairside assistant. It is required to be certified in radiology and have a current CPR certificate. Radiography Certification is offered through the Utah Dental Association for an additional \$30.00. CPR training is offered at the GTI for an additional \$30.00.

## EMR (Emergency Medical Responder) CE \*\*

*Semester 9-12 grades*

**\$40 Course fee required per semester**

*Taken with Intro to Health Science & Technology = 2 period block*

This semester course provides students with advanced emergency medical information and skills. The course introduces students to a variety of career options in emergency medicine along with preparing students to take nationally recognized tests and certification in Advanced First Aid, CPR and Emergency Medical Response. Students will learn basic skills prior to enrolling in EMT, nursing assisting, medical assisting and dental assisting courses. This course offers Weber State University concurrent enrollment credit AT 2300, 3.0 credits for qualified 11<sup>th</sup> and 12<sup>th</sup> grade students.

## EMT (Emergency Medical Technician) CE \*\*

*Year (2 period block) 12-grade*

**\$40 Course Fee Required Per Semester**

This program prepares students to perform initial medical assessment, treatment, and comprehensive care in medical crises, under the general supervision of a coordinating physician. Instruction includes all aspects of basic health care, disease and disorder recognition, injury diagnosis, and emergency treatment procedures for various injuries and disease outbreaks. Students learn theory and then participate in extensive skill practice sessions with EMTs. Students will be registered with the Utah Bureau of Emergency Medical Services to become a Certified EMT. Students must have a social security number for state certification, which costs \$80. Students will take the National Registry of EMT exam at the end of the course, which will cost \$70 payable prior to testing. Required course items for certification include: textbook for Concurrent Enrollment - \$75, stethoscope and blood pressure cuff - \$50, and bandaging supplies - \$20. This course offers Weber State University concurrent enrollment credit PAR 1000 & PAR 1001, 6.0 credit hours. **Students must provide a social security number in order to take the state Emergency Medical Technician exam.**

## EXERCISE SCIENCE/SPORTS MEDICINE CE \*\*

*Semester (2 period block) 11-12 grade*

**\$35 Course fee required per semester**

This course is designed to teach students components of Exercise Science and Sports Medicine by exploring topics such as anatomy/physiology, medical terminology, injury evaluation, nutrition, rehabilitation, and sports psychology. The course also includes many taping procedure labs and other hands-on activities. Extracurricular opportunities such as Future Doctors and job shadowing externships, allow students to further investigate areas of medicine. This course offers concurrent enrollment through Utah Valley University, Pes 2400, 2.0 credit hours.

## INTRO TO HEALTH SCIENCE & TECHNOLOGY

*Semester 9-12 grades*

*(Taken with EMR = 2 period block)*

This semester course is designed to create an awareness of career possibilities in health care and inform students of the educational options available for health science and health technology programs. Instruction includes beginning anatomy and physiology, medical terminology, medical ethics, diseases and disorders.

## MEDICAL ASSISTING

*Year (2 period block) 12-grade*

**\$40 Course fee required per semester**

**Prerequisite: Medical Terminology; Instructor strongly recommends Medical Anatomy & Physiology**

When all requirements are met, this program prepares students to assist practitioners in the front office and clinical setting of a medical office. The rigorous curriculum covers: administrative areas such as bookkeeping, insurance matters, and general office management; and clinical duties such as assisting with physical exams, screenings, treatments and completing duties in the medical office laboratory. A 160-hour externship is required for completion of certificate. Students must have good social skills, excellent attendance, a desire to serve their community, and the willingness to learn. An application is required for this program, and lists specific expectations.

## MEDICAL ANATOMY & PHYSIOLOGY CE \*\*

*Year (2 period block) 11-12 grades*

\$15 Course fee required per semester

Create models of human systems. Explore through dissections and hands-on activities. Investigate how the human body changes with diseases and disorders. This course provides an exciting in-depth experience of the human body that includes medical terminology and medical ethics. Discover your future as a health care professional through job shadowing and service learning experiences. Prepare for success in a variety of health technology programs. **This course may also be taken to fulfill a third Science credit requirement.** Students are required to be concurrently enrolled through SLCC HIT 1040, 3 credits.

## MEDICAL FORENSICS

*Semester (2 period block) 11-12 grades*

\$30 Course fee required per semester

This course is designed to create an awareness of the branch of health science relating to medical forensics and working in a medical laboratory. Students will learn to identify, analyze, and process logically using deductive reasoning and problem solving. It focuses on introductory skills necessary to prepare students for the crime scene or crime lab investigation and medical lab work.

## MEDICAL TERMINOLOGY CE \*\*

*Semester (2 period block) 9-12 grades*

\$20 Course fee required per semester

Students must be able to read at or near grade level. This class consists of lecture and video presentations. Students learn the meanings and pronunciations of prefixes, roots, and suffixes that combine to form over 11,000 medical terms. This is essential knowledge for any health career. The other Medical Terminology sections will be high school credit only. This concurrent credit is required for SLCC's Medical Assisting, Surgical Tech, and Pharmacy Tech programs. If students are NOT planning on those programs at SLCC, there is NO NEED for them to take it for SLCC Concurrent Credit, as the class credit does not transfer to other institutions or programs. Medical Terminology is a prerequisite for Medical Assisting and Pharmacy Technician at the GTI and recommended for Certified Nurse Assisting, as well as for any ELL students who are planning on taking medical training courses. *This course offers SLCC concurrent enrollment credit MA 1100, 3 credits.*

## PHARMACY TECHNICIAN

*Year (2 period block) 12<sup>th</sup> grade*

\$40 Course fee required Per Semester

**Pre or Co-requisite: Medical Terminology**

This program prepares students to support pharmacists by providing assistance during patient consultation, counter dispensing operations, and prescription preparation. Students will also be trained to keep patient and related health record information and to perform a wide range of practice-related duties for both retail and hospital-based pharmacies. Students must have good social skills, good attendance, and the ability to get themselves to their externship experiences. Students must have a social security number to qualify to take the licensure exam. The cost for exams are, National Exam PTCB \$129 or ExCPT \$105 (students need only do ONE test). State Licensure Fee \$99. **Students must maintain a "B" average and complete a 180-hour externship in addition to course work for successful licensure with the state of Utah. Students must provide a social security number in order to take the national exam and become licensed in the state of Utah.**

## PHYSICAL THERAPY

*Semester (2 period block) 11-12 grades*

\$35 Course fee required Per Semester

This course introduces students to the field of physical therapy through the history, medical terminology, documentation, therapy treatments, and pertinent legal and ethical considerations of the profession. Healthcare for diverse population begins its thread in this course. Students will participate in clinical observations.

## INFORMATION TECHNOLOGY

*Information technology programs include the study, design, development, implementation, support and/or management of computer hardware, software applications, multimedia, computer-based information systems, and integration services. Information technology coursework is divided into four specialty strands. These include; Information Support & Services, Interactive Media, Network Systems, Programming and Software Development. Students may choose to take a sequence of courses in one specialization strand or they may take courses across each strand to gain a broader understanding of the information technology industry.*

## COMPUTER PROGRAMMING 1

*Semester Class (2 period block) 9-12 grade*

\$10 Course fee required per semester

This semester course is an introduction to computer programming using C#. Students will learn problem solving and object-oriented programming as they design code and test your own programs. Students will learn C# syntax, graphical user interface (GUI) and simple control and data structures. Students will produce a graphical game as their final project.

## COMPUTER PROGRAMMING 2/MOBILE APPS

*Semester (2 period block) 10-12 grade*

**Prerequisite:** *Computer Programming 1*

**\$20 Course fee required per semester**

This course is designed to learn the JAVA programming language. It is a suitable class for advanced computer programmers who plan to further their information technology education in preparation for college and the workforce. In addition, this course is designed to take programming concepts and implement them into mobile device technology. Emphasis will be on completing individual and team based projects that demonstrate a student's ability to grasp new cell phone technology. Students will build customized user interactive text message, GPS map location, voice recorder, and game mobile applications.

## COMPUTER PROGRAMMING PROJECTS

*Semester Class (2 period block) 11-12 grade*

**Prerequisite:** *Computer Programming 1*

**\$15 Course fee required per semester**

This is an advanced computer course for students who have completed Computer Programming 1 or Advanced Web Development. Students will use and develop code for **C#, SQL, PHP and JAVA script**. This opportunity is for students to build a **WEB server**, use a **relational database with SQL** and program **Arduino microcontroller** projects. Note that this course is designed to **strengthen** their experience using current programming skills and to help students acquire marketable skills for **all professional work forces**. **This course may also be taken to fulfill the 3rd math credit requirement.**

## INTRODUCTION WEB DEVELOPMENT

*Semester Class (2 period block) 9-12 grade*

**\$10 Course fee required per semester**

This course is designed for students who desire an introduction to web development pages using HTML, XHTML, Dynamic HTML, tables, frames, input forms and cascading style sheets. Prior web development is not a requirement for this course. Students will build their own personal websites and maintain their on-going structure and design changes.

## ADVANCED WEB DEVELOPMENT

*Semester Class (2 period block) 9-12 grade*

**Prerequisite:** *Introduction Web Development*

**\$10 Course fee required per semester**

This course is designed to take fundamental concepts and technologies used in web development such as XML, XHTML and create more sophisticated web sites. Focus will be on completing team web-based projects that incorporate multimedia, JavaScript and Java Applets. Student will analyze different web designs and use more complex web tools that may include other technologies and mobile devices. Students in this class will maintain a real world website and be responsible for providing new content and functionality.

## INTRO TO 3D ANIMATION

*Semester Class (2 period block) 10-12 grade*

**\$15 Course fee required per semester**

This semester course offers an entry-level study of the basic principles of 3D and 2D animation. Subject matter includes: 2D animation, timing, secondary motion, stretch & squash, basic 3D modeling, texturing, lighting, UV mapping, rigging and animating a model. This course emphasizes artistic principles for those students interested in the 3D Industry. Students will learn basic principles such as layout and design, color theory, and basic drawing skills. In addition, animation planning, storyboard development, and the production process will be a large part of the course.

## ADVANCED 3D ANIMATION

*Semester Class (2 period block) 10-12 grade*

**Prerequisite:** *Intro to 3D Animation*

**\$15 Course fee required per semester**

This semester course offers an advanced level study of the principles of 3D and 2D animation. This course is designed to prepare students for entry into an internship or a college course with the skills necessary to succeed in industry. Subject matter includes: advanced polygonal modeling, nurbs modeling, advanced techniques for both game and movie industries, advanced lighting and texture, dynamics, environmental construction, advanced character rigging and animation. This course expounds on the *instructional* principles taught during the Intro to Animation class, but gives more time for student projects and critique. Students will continue to apply the art principles learned during the intro class, and the principles will be critiqued and applied to their final projects. Students will have the opportunity to work with Utah Valley University and Salt Lake Community College and interface and work with college professors to seamlessly transition into college and their desired field of study.

## GAMING DEVELOPMENT FUNDAMENTALS

*Semester (2 period block) 9-12 grade*

**\$15 Course fee required per semester**

This course is designed to provide students with knowledge and project based experience of fundamental gaming development concepts relating to STEM. These concepts include game design, scripting, creation of digital assets, graphic resources animations, understanding hardware, problem solving, critical thinking, collaboration, and project management.

### **DIGITAL MEDIA II (Projects class)**

*Semester (2 period block) 11-12 grade*

**Prerequisite:** *Advanced 3D Animation*

**\$15 Course fee required per semester**

This semester course offers seniors an opportunity to create and complete a portfolio necessary for internships, college programs and the job application process. Students will have the opportunity to work with real world situations, producing products for both the school district and local businesses, helping to give substance to their portfolios. Students will be critiqued every two weeks to measure their progress, quality of work, and to receive direction as to the overall layout, design and professionalism of the end product. This class is designed after a senior level college studio class to prepare students for what they will encounter in college. In addition, this course will help students complete all necessary paperwork for entrance into college or an internship program. *Students wishing to take this course must make individual arrangements with the instructor.*

### **COMPUTER MAINTENANCE (A+) CERTIFICATION**

*Semester (2 period block) 10-12 grade*

**\$15 Course fee required per semester**

In this course, students practice troubleshooting, maintenance, and upgrade of PCs. Course content covers setup, memory management, data back-up, and hardware/software diagnostic procedures. The course is designed to prepare students for the Comp TIA A+ certification exam. A+ certification is a testing program that certifies the competency of entry-level (9 month's experience) service technicians in the computer industry. Earning A+ certification means that the individual possesses the knowledge, skills, and customer relation skills essential for a successful entry-level computer service technician as defined by experts from companies across the industry.

### **LINUX FUNDAMENTALS**

*Semester (2 period block) 10-12 grade*

**\$15 Course fee required per semester**

This semester course introduces students to the SLES11 Linux operating system. Students will learn initial concepts, installation, administration, system management, and X-window system, TCP/IP, SAMBA for both workstations and servers. This course also prepares the student for the CompTIA Linux+ certification exam.

### **NETWORKING +/CISCO (CCENT CERTIFICATION)**

*Semester (2 period block) 10-12 grade*

**\$15 Course fee required per semester**

This course focuses on basic networking terms and concepts, the OSI model, transmission media, and protocols used by various vendors in LAN and WAN network implementation. This course is designed to prepare students for the CompTIA Network+ certification exam and is equivalent to 6 months of full time experience working with Peer-to-Peer and Server Client networks. Also, students will be introduced to CCENT (Beginning Cisco Certification). Students will learn to describe the operation of data networks, implement small switched networks, implement an IP addressing scheme and IP services to meet network requirements for a small branch office, implement small routed networks, explain and select administrative tasks requires for a WLAN, identify security threats to a network and describe ways to mitigate those threats, and implement WAN links.

### **SECURITY +**

*Semester (2 period block) 9-12 grade*

**\$15 Course fee required per semester**

This course will prepare you to successfully pass the CompTIA Security+ Exam SYO-401. CompTIA Security Certification covers network security, compliance and operational security. Also, included is... access control, identity management, and cryptography.

**This course may also be taken to fulfill a third science credit.**

## **SKILLED & TECHNICAL**

### **COMMERCIAL DRIVER'S LICENSE PROGRAM (CDL)**

*2<sup>ND</sup> Semester, 12 grade only*

*Students **must** already have a regular driver's license, they will also be required to have a physical, a drug test and DOT Test*

Class includes: General trucking knowledge, driving safety, transporting cargo and pre-trip inspection. Students must master these basic skills: vehicle control, judging positions, ability to back the vehicle in various scenarios, Road skills. Students will be immediately eligible for employment upon successfully completing the CDL course and obtaining a license. Classroom and Vehicle instruction provided by Jack B. Parson Companies. State of Utah charges a \$40.00 fee to obtain a CDL from Department of Public Safety.

## TECHNOLOGY & ENGINEERING

*The engineering technology program is a hands-on, project-based approach to learning that better prepares students for entrance into college engineering and/or engineering technology programs. Coursework uses real-world problem solving that answers the age-old student question, "Why do I need to know this?" There are five courses in the Engineering Technology Sequence. Course content is designed to help students explore how engineers and engineering technicians integrate math, science, and communications skills into their profession. Engineering Technology students will engage in the research, design, and construction of models/prototypes in a variety of areas including: electrical, fluid, structural, and mechanical systems.*

### **ARCHITECTURAL DESIGN 1 & 2**

*Semester (2 period block) 10-12 grade*

**\$10 Course fee required per semester**

If architecture, building construction, interior design, or civil engineering is your interest then this is the class for you. In this class you will learn the process of residential and commercial building design. Students will learn design and construction practices common to architecture. Students will gain knowledge in uniform building codes, blueprint reading, and architectural history. A focus will be placed on sketching, 2D and 3D CAD (Computer Aided Design) drawing. Students will practice using AutoCad and Revit, which are the most commonly used design software packages used in the industry.

### **ENGINEER/ TECHNICAL DESIGN 1 & 2**

*Semester (2 period block) 9-12 grade*

**\$15 Course fee required per semester**

This exploratory class will introduce students to the process of engineering design. Students will focus on the language of engineering, which includes sketching, technical drawing, orthographic projection, geometry, dimensioning standards and drawing presentations used by industry. Students will be instructed on 2D and 3D CAD (**Computer Aided Design**). Students will practice with the latest CAD software used in the field including **AutoCAD**, **Solid Works** and **Revit** as they complete hands on projects.

### **ENGINEERING PRINCIPLES 1 & 2**

*Semester (2 period block) 9-12 grade*

**\$15 Course fee required per semester**

In this course students will be introduced to 7 different engineering disciplines. Students will apply basic math and science principles used in engineering. By applying problem-solving skills in hands on activities, students explore what different engineers do. After this class, students will be able to choose the right classes and opportunities to pursue the engineering discipline of their choice. **This course may also be taken to fulfill a third science credit.**

### **ENGINEERING CAPSTONE (Projects class)**

*Semester (2 period block) 11-12 grade*

**\$15 Course fee required per semester**

**Prerequisite: Robotics and Automation**

Students will develop product using the engineering design process. The course will require the use of 3D computer aided design (CAD) software, 3D prototype, model machinery (3D printer), and other shop equipment to design, prototype, and test their product. **This course may also be taken to fulfill a third science credit.** *Students wishing to take this course must make individual arrangements with the instructor.*

### **ELECTRONICS 1 & 2**

*Semester (2 period block) 9-12 grade*

**\$15 Course fee required per semester**

This course covers basic electronics theory and logic for DC & Digital Electronics. Students will use computer simulations to learn about the logic of electronics as they design, test, and actually construct circuits and devices. This is a course in applied logic that encompasses the application of electronic circuits and devices. **This course may also be taken to fulfill a third science credit requirement.**

### **ELECTRONICS 3**

*Semester (2 period block) 10-12 grade*

**\$15 Course fee required per semester**

**Prerequisite: Electronics 1 & 2**

Students will use computer simulations to learn about the logic of AC and Advanced Digital electronics including interfacing Raspberry Pi computers. Also, they design, test, and actually construct circuits and devices. This is a course in applied logic that encompasses the application of electronic circuits and devices. **This course may also be taken to fulfill a third science credit requirement.**

## **ROBOTICS 1**

*Semester (2 period block) 10-12 grade*

**\$15 Course fee required per semester**

### **Prerequisite: Engineering Principles, Engineer/Tech Design**

Robotics & Automation is a lab-based, hands-on curriculum combining electrical, mechanical and engineering principles. Students will learn to design, build, program, and control robotic devices by applying science, technology, engineering and math concepts. A rigorous study and application of electrical concepts will include: sources of energy, electrical safety, use and identification of basic electronic components, sensors and actuators. Engineering concepts will include: mechanical design, prototype development, design testing, programming, and proper engineer documentation. Industrial automation, robotic applications and career opportunities will also be discussed.

## **COMPOSITES 1**

*Semester 11-12 grade*

**\$15 Course fee required per semester**

*(Taken with Manufacturing Principles 1 = 2 period block)*

Strength, stealth and speed – these are key words related to the composites industry. This course focuses on the properties and manufacturing of fiberglass reinforced plastics and advanced composites. Composites 1 is the first in a two-part sequence of courses focusing on advanced materials and processing used in planes, cars, bicycles and many other products. The courses in this pathway include Manufacturing Principles 1, Manufacturing Principles 2, Composites 1 and Composites 2. These courses lead to entry-level technician positions in industry and are appropriate for students desiring college preparation in engineering.

## **MANUFACTURING PRINCIPLES 1**

*Semester 11-12 grade*

**\$15 Course fee required per semester**

*(Taken with Composites 1 = 2 period block)*

The first in a sequence of courses offering “hands-on” experience producing useable items from wood, plastic, and composite material rough stock that meet a given set of design specifications. Students will use basic tools, equipment and operations found in manufacturing industries. Students will create engineering drawings, use precision measuring instruments, manufacturing equipment, machines, and materials to improve an existing design or manufacture original products. Products will comply with quality control standards. This course allows students to experiment with new technologies and assess application of processes, materials and products.

## **COMPOSITES 2**

*Semester 11-12 grade*

**\$15 Course fee required per semester**

*(Taken with Manufacturing Principles 2 = 2 period block)*

### **Prerequisite: Composites 1**

The course work for Manufacturing Principles includes discussion and work in the following areas: History and future of Advanced Composites, Systems and methods of production, Engineering problem solving, Employment possibilities, Safety and work standards, Product development, Design and manufacture individual projects, Marketing and mass production. Approximately 75% of the time is spent in the lab working on exercises and projects.

## **MANUFACTURING PRINCIPLES 2**

*Semester 11-12 grade*

**\$15 Course fee required per semester**

*(Taken with Composites 2 = 2 period block)*

### **Prerequisite: Manufacturing Principles 1**

The course work for Manufacturing Principles includes discussion and work in the following areas: History and future of Advanced Composites, Systems and methods of production, Engineering problem solving, Employment possibilities, Safety and work standards, Product development, Design and manufacture individual projects, Marketing and mass production. Approximately 75% of the time is spent in the lab working on exercises and projects.