

# LAB FEES MAY BE REQUIRED FOR TECHNOLOGY COURSES

## **WOOD PRODUCTION I**

Grades: 9-12

Prereq: None

Credit: .5

Each student will become acquainted with the properties of wood and metal and the processes needed to shape, fasten, and finish these materials into products. Students will experience activities using hand and machine tools, assembling techniques and finishing applications. Project work may include using hand and machine tools to produce wood products, and using sheet metal or wrought iron to produce products.

## **MATERIALS PRODUCTION II (WOODS II)**

Grade 9-12

Prereq: Wood Production I

Credit: .5

This course will build on the knowledge previously gained in Wood Production I, by implementing advanced machining techniques and self-inspired and planned designs. Students will have an opportunity to use such machines as the wood lathe, dovetail jigs and a CNC (Computer Numerically Controlled) Router. They will also experience the integration of new woodworking technologies applied to traditional techniques. This course is primarily lab based.

## **CONSTRUCTION TECHNOLOGY**

Grades: 9-12

Prereq: None

Credit: 5

This course is designed to acquaint students to the actual make up of a building, from the ground to the roof. Activities include blueprint reading, masonry work, floor, walls, and roof framing, and interior and exterior finishing. Students will work on group projects to apply their construction skills.

## **DESIGN AND DRAWING FOR PRODUCTION I**

Grades: 9-12

Prereq: None

Credit: .5

This course provides opportunities in the area of design and drawing, through creative thinking and problem solving experiences. Students will have an opportunity to utilize some basic drawing skills and hands on experience in solving some practical problems. This course satisfies one half of the art/music requirement.

## **DESIGN AND DRAWING FOR PRODUCTION II**

Grades: 9-12

Prereq: Design & Drawing for Production I

Credit: .5

Through basic drawing techniques students will solve problems graphically. They will have an opportunity to create presentation drawings for designs, full and half sectioning of machine parts, multi-view drawings and surface developments for packaging design and shapes. This course satisfies one half of the art/music requirement.

## **ARCHITECTURAL DRAWING**

Grades: 11-12

Prereq: Design & Drawing for Production I & II

Credit: .5

This course will deal with basic elements in planning a residence. Topics will include site orientation and selection, residential designing, room planning and layout, local building and zoning limits. Each student will have the

opportunity to design a residential home. Drawings will include preliminary layouts, floor and foundation plans, elevations, section views, a plot plan and model. Drawing tools will also include CAD.

### **COMMUNICATION SYSTEMS**

Grades: 10-12

Prereq: None

Credit: .5

This course surveys the technology of video and computer communications. Units covered will include all aspects of video production including recording with a variety of cameras, sound dubbing, special effects, editing, and adding titles. Telecommunication, digital sound, animation, computer graphics and interactive multimedia will be covered. Students will complete activities in each unit.

### **MEDIA PRODUCTION**

Grades: 11-12

Prereq: Communication Systems or Digital Graphics

Credit: .5

This course will have two components. Video production; will include units in studio lighting, script and story board writing, video filming, editing, special effects and improving sound quality. The second component will cover video techniques such as chroma key (bluescreen), morphing, and virtual reality graphics. Students will build on the skills and knowledge learned in Communication Systems and develops mastery in video production. Group and individual projects will give practical experience to each student.

### **PHOTOGRAPHY I**

Grades: 10-12

Prereq: None

Credit: .5

This course teaches the basic concepts of black and white photography. Students will complete work using an adjustable camera, film developing, darkroom techniques, photo composition, prints involvement, flash, camera lens and filters, mounting and display. The course includes an overview of the camera, film and photo equipment and how to become a better photographer. Classroom and outside projects will be assigned. Access to a 35mm adjustable camera is advised.

### **PHOTOGRAPHY II- IMAGING**

Grades: 11-12

Prereq: Photography I

Credit: .5

This course is designed for Photo I students that want an in-depth look at photography. This course will prepare the student for entry-level college photography courses. Students will work on improving their photocomposition, use creative darkroom techniques, taking portraits and work in color. Understanding and controlling light will be stressed. Access to a 35mm adjustable camera is advised. This course satisfies one half of the art/music requirement.

### **DIGITAL GRAPHICS I**

Grades: 9-12

Prereq: None

Credit: .5

This course will introduce students to creating and using computer graphics. Units of study will include painting and drawing software used in creating graphic images. Input devices such as scanners, digital cameras, video input, CD-ROM, and the Internet will be used to create high-resolution graphics. These graphic images will be used with Presentation and Page layout software to help the student create major projects.

**DIGITAL GRAPHICS II**

Grades: 9-12

Prereq: Digital Graphics I

Credit: .5

This is an advanced elective concentrating on high-end drawing and design software. Students will use this software to create and enhance graphic images of all types, and develop graphic layouts for paper and web publication. Software programs such as Photoshop, Illustrator, and web site production software will be taught. Through project work each student will learn to use tools widely used in the communication industry.

**DIGITAL GRAPHICS III - 2/3D ANIMATION**

Credit: .5

Grades: 9-12

Prereq: Digital Graphics I &amp; II

This course will teach the principles, techniques and animation of 3D graphics. Using software the students will explore the essential 3D building blocks such as drawing, shape manipulation, modeling and rendering. 3D animation will be taught using “Cheetah 3D” software. Students will use layers to create scenery, props and characters that look and move like real life. Students will also use flash to create a short chapter in a class movie that will tell a story of the classes choosing. Through project work, tutorials and classroom instruction students will develop an understanding of the 2 and 3D graphic animation world.

**COMPUTER PROGRAMMING I**

Credit: .5

Grades 9 – 12

This course is an introduction to computer programming using the object-oriented language Visual Basic .NET. In addition, Lego Mindstorm programming software will be used to preprogram robots to accomplish tasks in lifelike scenarios. Other programming languages such as HTML and Java may be introduced. We will also cover the fundamentals to computer hardware. No prior programming knowledge is necessary, because this course is focused on building from the basics. This class is designed for students interested in computer programming and for those interested in pursuing a degree in Computer Science in college.

**PRINCIPLES OF ENGINEERING**

Grades: 11 &amp; 12

Credit: .5

Students discover how to apply engineering principles as they devote themselves, as a small subgroup of the class, to an engineering problem or design issue known as a “case study”. Each group of three or four students will apply the six major engineering principles to each case study, research relevant information, document their work in engineering journals, test design ideas, model potential designs, build prototypes, present preliminary and final results to the instructor and class as a whole. Self and peer review is a vital part of improving the quality of work and thus practiced on a continuous basis.

The Capital Region Technical School offers great opportunities for students seeking to gain knowledge and skills in vocational and technical fields. Due to the travel time and length of course offerings at the center, it is imperative that

students enter on track for graduation. Therefore under ordinary circumstances, students should have passed at least 9 credits of the following: English, Global History, Math, Science, Health, Phys. Ed., and Art/Music (1 credit). Only under very unusual circumstances and with the approval of administration and the recommendation of the student's counselor shall students not meeting these criteria be allowed to attend CR Technical School.

## **COURSE OFFERINGS**

The following programs are two year programs offered to juniors and seniors. Students may elect to take the programs for one year only. Students interested in attending should inform their counselors so that other course requirements can be fulfilled in the freshman and sophomore years. Students will spend four periods in the program and will receive four credits in the course unless enrolled in another course concurrently. Transportation is provided by the home school district. The Technical School career center will help students identify full-time job opportunities for after graduation or assist with college planning.

**AUTO BODY REFINISHING**

**AUTO BODY COLLISION**

**AUTO TRADES TECH I/II**

**AYES AUTO TECHNICIAN**

**BUILDING TRADES I/II**

**COMPUTER AIDED DESIGN & MANUF. I/II**

**COMPUTER APPLICATION**

**WEB PAGE DESIGN**

**COMPUTER TECHNICIAN**

**NETWORK TECHNICIAN**

**COSMETOLOGY\*\* I/II**

**CULINARY ARTS I/II**

**LODGING MANAGEMENT-Grade 12 only**

**EARLY CHILDHOOD EDUCATION I/II**

**ELECTRICAL TRADE I/II**

**EMERGENCY MEDICAL TECHNICIAN**

**FASHION MERCHANDISING & RETAIL MGNMT I/II**

**FLORAL DESIGN I & II**

**HVAC/HEATING & REFRIGERATION**

**INTERNATIONAL VIRTUAL BUSINESS**

**LAW ENF. & SECURITY I/II**

**MEDIUM/HEAVY DUTY TRUCK REPAIR I/II**

**NURSE ASSISTANT I**

**WELDING/METAL FABRICATION I/II**

\*\*—Indicates programs that require two years of attendance and summer hours for licensure.)

### **LOCATION:**

**1015 Watervliet-Shaker Road Albany, NY 12205**

**PHONE: 456-9255**

## **TECH-PREP**

Grade: 12 Credits: 4

Accelerated Tech-Prep programs are a result of a partnership between VOTEC a local community colleges to put you on the fast track to college and a successful career. Through hands on training, Tech-Prep students learn all aspects of their field from industry-trained instructors. Students in Tech-Prep are concurrently enrolled in VOTEC and college and earn credits toward their Associate's Degree while still in high school. An internship component is part of the program.

Tech-Prep is offered in the fields listed below:

**CAD/CAM**

**CULINARY ARTS**

**AUTO MECHANICS**

**Juniors** may earn up to 4.5 credits at the Technical School including CTE Math or Science, Career Management and Independent Physical Education.

**Seniors** may also earn up to 4.5 credits at the Technical School including English 12 and Independent Physical Education.