

Course: 8401110 - Applied Engineering Technology I

Class Syllabus Instructor: Richard Platt

School Year 2016 – 2017

Rooms: 816 & 820 941-741-3366 Ext 2050

Important Consideration

The Southeast Engineering Program courses of study purpose, is to expose students to the technical world they live. The field of engineering is vast and unlimited. This course can lead to students to a variety of career options not limited to becoming, specifically an engineer. The student will be exposed to the processes of design, manufacturing, marketing and sales and will learn how these aspects are vital to our economy and their future success. Please read the State of Florida Career Framework for this course.

Purpose

The purpose of this program is to provide students with a foundation of knowledge and technically oriented experiences in the study of applied engineering and its effect upon our lives and the choosing of an occupation. The content and activities will also include the study of entrepreneurship, safety, and leadership skills. This program focuses on transferable skills and stresses understanding and demonstration of the technological tools, machines, instruments, materials, processes and systems in business and industry. The content includes but is not limited to study in mechanical, electrical, civil, and environmental engineering disciplines.

Certifications & Work Ready

The Applied Engineering is an Adult Career TechEd (ACT) program of study is structured for students to achieve industry certifications and prove they are work ready. Students will earn industry certifications and those certifications will be accompanied with a physical (products designed and manufactured) and digital web site portfolio they can use to attain employment and strengthen their college applications. The certifications a student earn will enable them to become work ready and greatly assist them in earning a self supporting income by validating their skill sets.

Supplies

Students will need the following supplies for this course.

1. **For Class Binder** - A white with transparency cover three ring (2") Binder.
2. **For Class Binder** - A Package of Sheet Protectors
3. **For Class Binder** - Notebook Section Dividers -
4. **For Class Binder** - Spiral Ring Note Book – For note taking
5. **For Class Binder** - Package of Copy Paper – For engineering drawings and sketches
6. **Technical pencils**, .07 mm graphite leaded pencils.
7. **White eraser**. Non-marking technical eraser.
8. **Standard 12" Ruler** with English and Metric Measurements – For Drafting and manufacturing projects.
9. **Box of tissues** or Roll of paper towels.
10. Package of copy paper for class projects. Used for drafting and printing designs.

Various supplies needed for completion of student projects. As needed, students may need to acquire various materials to complete projects, such as wood glue, paint, and sand paper. We strive for donations of materials and any donations are sincerely appreciated.

- If acquiring these materials are difficult, please contact Mr. Platt in private.

Project Base Instruction

All technology and engineering principals taught in the IB Design Technology and Applied Engineering program are taught as project in creating products and solutions plus teaching the major principals of engineering. These projects/products will be used to support the student achieving industry certification(s) and to have physical samples of their work for their portfolios. Additionally students will learn how to conduct market research, industry trends and profit models for creating profitable projects to learn entrepreneurial concepts.

*****ALL WORK WILL BE TURNED IN, USING ENGINEERING NOTEBOOK AND OR ON STUDENTS WEBSITE.*****

Milestones and Applications of Study

Digital & Physical Portfolio – Students will learn how to construct a Web Site that displays all of their class and competition work. The student web site portfolio is vital and validates the students skills and the certifications they have earned. Their portfolio is critical in the college application process and attaining a self-supporting income and paying for college. This effort will achieve an industry certification for Adobe Dreamweaver.

Manual Drafting Projects – Students will learn manual drafting techniques for producing orthographic and isometric drawings that will included in their portfolio. For industry students must understand how to produce simple dimension-ed drawings.

Illustration – Students will learn and effectively use Adobe Illustrator. Adobe Illustrator is a key application to our students' initial success, by learning the world's most used drawing tool for logo, illustrator and technical design. Adobe Illustrator and illustration is critical in learning the design process. Students will actually learn how to use Adobe Illustrator for computer aided manufacturing in driving machines that mill out their designs. Finally, students will be tested for industry certification in using Adobe Illustrator.

3D CAD Solid Modeling – Students will be trained to use SolidWorks for 3D CAD design and later tested for industry certification. Southeast High School leads the nation in secondary and post-secondary institutions in SolidWorks Certifications. This application is critical for design, manufacturing and creating real world products and producing computer animations.

Computer Automated Manufacturing – Students will learn how use take 2D drawings and 3D models and create tool paths using CAMWorks for learning how to use Computer Numerical Control CNC Router machines to mill out products they design. Experience in CAM/CNC is a vital and highly valued skill in industry and give this country tremendous global competitiveness.

Other Skills and Applications – Students will learn how to use Adobe Photoshop, Adobe Premiere and Adobe Illustrator in support of brochure creation, 3D renderings, 3D animation editing and motion graphics for their web sites. All these will enable them to achieve certifications in subsequent years.

INTENDED OUTCOME:

The intended outcome of the Applied Engineering program is to train students to be work ready and capable of earning a self-supporting income in the engineering, research and manufacturing industry. Additionally, this program will allow students to perform at the highest level in the most desirable colleges they try attend. Please confirm your understanding after you have read this document as a means to acknowledgment of this syllabus.

Sincerely, Richard Platt

Student Name : _____ Date: _____

Parent/Guardian: _____ Date: _____