COURSE TITLE:	Engineering Applications		
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Forsyth County Schools
Course Syllabus 2022/2023

Course Description: Engineering Applications is the third course in the engineering pathway. Students have opportunities to apply engineering design as they develop a solution for a technological problem. Students use applications of mathematics and science to predict the success of an engineered solution and complete hands-on activities with tools, materials, and processes as they develop working drawings and prototypes.

Standards: Forsyth County offers many State Board of Education approved CTAE Career Pathways with three sequenced courses. *To view course standards, pathway guides, and plans of study, visit the following links:*

Standards: https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/cluster-pathway-courses.aspx

Programs of Study:
https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Programs-of-Study.aspx

Standard 1 in all CTAE courses is to demonstrate employability skills required by business and industry. This includes communication, demonstrating creativity, exhibiting critical thinking and problem-solving skills, modeling work readiness traits required for success in the workplace, and applying the appropriate skill sets to be productive in the workplace. Standard 1 also places emphasis on presenting a professional image through appearance, behavior, and language.

CTSO Affiliation (Career Tech Student Organizations): CTSOs are co-curricular organizations with leadership programs and competitive events which reflect current curriculum standards and competencies for the instructional programs they serve. Teachers infuse CTSO activities into the instructional activities, thereby helping students see the real world value of their academic studies. The CTSO for this course appears below, and students are encouraged to take advantage of these additional leadership opportunities.

FIRST Robotics: The mission of FIRST Robotics is to inspire young people to be science and technology leaders and innovators, by engaging them in exciting mentor-based programs that build science, engineering, and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.

TSA: The mission of the Technology Student Association is learning to lead in a technical world. TSA enhances personal development, leadership, and career opportunities in STEM, whereby members apply and integrate these concepts through intracurricular activities, competitions, and related programs.

VEX: VEX, we envision a world where every student has the opportunity to be inspired by the excitement of hands-on, minds-on STEM learning and the feeling of creating something with technology. Here are some other amazing effects of teaching and learning with educational robotics.

Electrathon Car: The mission of Electrathon America is to provide hands on opportunities for participants to learn about STEM principles as they design and build an electric vehicle for competition.

BEST Robotics: Through participation in this project-based STEM program, students learn to analyze and solve problems utilizing the Engineering Design Process, which helps them develop technological literacy skills. It is these skills that industry seeks in its workforce.

Required Assignments: Foundations of Engineering will require students to demonstrate proficiency based on summative, formative assessments and class based projects.

Availability for Extra Help: Extra help is available before school, after school and during Tutorial hours.

Makeup Work: Make up work is defined as work assigned during a student's absence, not work assigned prior to an absence. The student has five (5) school days upon returning to school to complete make-up work. The teacher has the discretion to grant a longer period to make up work, if there are extenuating circumstances.

Grading Calculations:
Non-EOC Course Average = 50% (1st Sem. Course Work) + 50% (2nd Sem. Course Work)
1st and 2nd Semester Course Work = 75% Summative + 25% Formative

Grading Policy:
A = 90 – 100
B = 80 – 89
C = 70 – 79
Failing = Below 70

Formative Assessments include, but are not limited to homework, class work, practice tests, rough drafts, and sections of projects/ research papers/presentations.

Summative Assessments include, but are not limited to unit tests, final projects, final essays, final research papers, and final presentations.

Learning Resources/Textbook(s): All learning resources, both print and digital, are meant to support and enhance the student learning experience of this class. Below are the names of the textbooks and websites that will be used in this course. Some of the web-based resources require parent permission per federal regulations. Federal laws that guide parent permission requirements are as follows:
- **Children's Internet Protection Act (CIPA):** The school is required by CIPA to have technology measures and policies in place that protect students from harmful materials including those that are obscene and pornographic. Any harmful content contained within inappropriate sites will be blocked. http://fcc.gov/cgb/consumerfacts/cipa.html
- **Children's Online Privacy Protection Act (COPPA):** COPPA applies to commercial companies and limits their ability to collect personal information from children under 13years of age. No personal student information is collected for commercial purposes. https://www.ftc.gov/tips-advice/business-center/guidance/complying-coppa-frequently-asked-questions-0
- **Family Educational Rights and Privacy Act (FERPA):** FERPA protects the privacy of student education records and gives parents the right to review records. Under FERPA, schools may disclose directory information in certain circumstances. http://www2.ed.gov/policy/gen/guid/fpco/ferpa

Please review the resource list. Each website related to the curriculum resources is provided along with their privacy policies. Should you have any questions regarding these resources immediately contact the course teacher via email or phone.

* The following resources are county approved. These resources may vary by school due to sequencing, pacing, curriculum design, and/or individual needs of students.

Name of Resource*	Hard copy/Website	Privacy Policy
Virtual Job Shadow	Website	https://www.virtualjobshadow.com/resources/policy/
Amatrol Learning	Classlink	https://amatrol.com/privacy/
Autodesk Suite	https://www.autodesk.com/	https://www.autodesk.com/company/legal-notices-trademarks/privacy-statement
YouScience	Website	https://www.youscience.com/privacy-policy/
Office 365	Classlink	
SolidProfessor	Classlink	
SolidWorks	Website	Privacy Policy
SP2- OSHA Certification	https://sp2.org/	https://sp2.org/privacy-policy/
Archicad	https://graphisoft.com/	https://graphisoft.com/legal/privacy-policy
Talk Hiring Job Interview Practice	https://www.talkhiring.com/	https://www.talkhiring.com/privacy-policy

** The following resources are web-based resources that require parent permission. By signing the syllabus, the parent is approving these resources. Should you have any questions regarding any of these classroom resources, please contact your student's teacher via email.

Dress for Success: Career and technical education pathways in Forsyth County incorporate Dress for Success Days throughout the school year. These experiences allow students to foster confidence and continue to develop a positive self-image, while understanding the importance of dressing well for their future profession. At certain intervals throughout the course, students will analyze industry standards of the profession and study the importance of dressing well for a job interview. This will culminate into being fully prepared for Community Mock Interviews which occur as students complete a career pathway.

Industry Credentialing/Credentials of Value (EOPA): Students are encouraged to select a career pathway beginning in the ninth or tenth grade that is connected to college and career goals. This course is one of three courses in the career pathway chosen by a student. At the conclusion of the third pathway course, students will be required to take an industry credentialing assessment. This assessment provides students an opportunity to demonstrate what they have learned by completing an online, nationally recognized exam and allows students the

ability to earn a FCS Pathway Medallion and State Career Pathway Diploma Seals upon graduation. Student directory information may be shared with credentialing vendors offering the assessment.

The rigorous/technical coursework that you have been taking or will take in future years will provide you the foundational knowledge you will need for this exam. Your teacher will provide you the testing details and share the study guide and resources that are available to also assist you in preparation for this industry certification exam.

| **Credential of Value (EOPA) Assessment Name:** Engineering Assessment (State Developed), Test Code: 7773 |
| **Credential of Value (EOPA) Assessment Vendor:** NOCTI |

Resource section. I will support my student following the classroom expectations outlined in this course syllabus. I agree that I am the person who is legally allowed to consent for my student whose name is listed below.

_____
Student's Name (Print)

_____
Parent's Name (Print)

_____   _____
Parent Signature   Date