Clean Energy Technologies: Solar, Wind, and Hydrogen Fuel Cell Power

Students will explore advanced engineering concepts in alternative energy, focused on the future of solar, wind, and hydrogen fuel cell technology. Students will learn about the engineering and science design challenges faced in bringing alternative energy solutions into everyday use. Students will be challenged in the design, construction and testing of a working hydrogen fuel cell vehicle and charging station that integrates wind and solar energy. Students will experience becoming an engineer and joining an engineering team tasked with tackling significant engineering and systems integration challenges. This integrated STEM program is designed around informative work sessions, hands-on laboratory design-build experiences, challenging classroom experiments, and expert guest speakers. Emphasis of this engineering experience is to demonstrate how math, science, and engineering are used to create the designed world.

Biomedical Engineering

What do prosthetics, genetic engineering, pharmaceutical development, biosensors, and tissue engineering have in common? Biomedical Engineering! Biomedical engineers use engineering principles to improve human and animal health. Topics such as biomechanics, biomedical imaging, biomaterials, tissue engineering, biomedical devices and diagnostics will be reviewed, supplemented with hands-on projects – because what engineer doesn’t want to build something? Students will learn about things like pulse oximeters, prosthetic limbs, ultrasounds, human cell and bacterial growth, genetic engineering, cancer screening methods, and disease modeling. This week will include guest speakers, laboratory experiences, design problems, and discussions.

Introduction to Programming with C++

Are you thinking about a career in Software Engineering? Did you know that Software Engineering was rated number one for job satisfaction in a Wall Street Journal article of the 10 Best Jobs of 2012? In this course, you will be introduced to the fundamentals of computer programming which will allow you to get a feel for what it would be like to be a Software Engineer. Due to its efficiency and relative ease-of-use, C++ is a good language to learn if you really want to learn the fundamentals of programming. Common applications written in C++ include:

- Computer Games
- Analysis of Integrated-circuit simulation results.
- Medical Software
- Anti-Virus Software
- Real-Time Physical Simulations
- High performance image processing/AI software
- High performance aerial and mobile sensor processing
Choose Your Hands-on Learning Experience from these Five Exciting Tracks

- Clean Energy Technologies
- Biomedical Engineering
- Fundamentals of Cyber Security
- Advanced Cyber Security Concepts/Techniques
- Introduction to Programming with C++

Breakfasts & lunches included with registration fee. Space is limited – Registration closes July 11th.

Fundamentals of CyberSecurity

According to a study into computer security manpower challenges and potential solutions released by the Center for Strategic and International Studies (CSIS), "we not only have a shortage of the highly technically skilled people required to operate and support systems already deployed, but also an even more desperate shortage of people who can design secure systems, write safe computer code, and create the ever more sophisticated tools needed to prevent, detect, mitigate, and reconstitute from damage due to system failures and malicious acts." Northrop Grumman cyber experts will teach Computer Forensics, CyberSecurity Fundamentals, and provide invaluable information on CyberSecurity Internships & Careers. The week-long program will culminate with a CyberSecurity Grand Challenge Competition between two student teams. The program encourages both students who are beginners and students who have an intermediate knowledge of CyberSecurity.

Advanced CyberSecurity Concept/Techniques

Are you ready to take your CyberSecurity skills to the next level? This course is intended for students who have a solid foundation in the fundamentals of CyberSecurity, and will include extensive hand-on lab time. Northrop Grumman cyber experts will lead this course and help students improve their skills and prepare them for the CyberPatriot competitions this fall. Enrollment priority will be given to students who have participated in at least one CyberPatriot season and intend to compete in the 2014-2015 season.

Online registration is required and will be open from May 26th thru July 11th at

https://wsnet.colostate.edu/cwis6/events/events/

Needs based scholarships are available

Space is limited, submit your registration as early as possible

Summer 2014 STEM / CyberSecurity Camp Sample Registration Form

Preferred Session:
- Clean Energy Technologies
- Biomedical Engineering
- Fundamentals of CyberSecurity
- Advanced CyberSecurity concepts/Techniques
- Introduction to Programming with C++

Name: ____________________________
Address: ____________________________ State: ________ Zip Code: ________
Phone: ____________________________ Alt. Phone: ____________________________
Gender (check one): ___ Female ___ Male
Date of Birth: ____________________________
Parent/Guardian Name: ____________________________
Parent/Guardian Contact #: ____________________________
Parent Email address: ____________________________
School & District Name: ____________________________
Grade Fall 2014 (circle one): 8th 9th 10th 11th 12th
Current GPA: ____________________________

Will you be on a CyberPatriot team this fall? ___ Yes ___ No
CyberPatriot Team Coach: ____________________________

Note: Selection priority for the Cyber Security sessions will be given to students who will be competing in the CyberPatriot Competitions this fall.