

2009 CTE SUMMER INSTITUTE & VTEA ANNUAL SUMMER CONFERENCE WORKSHOP DESCRIPTIONS

In order to register for the CTE Summer Institute and VTEA Summer Conference, go to the online registration portal at <http://www.cpe.vt.edu/cte/>. Only those registered through that site may register for VTEA sessions described below. After you complete the online registration, you will receive an email with details for selecting VTEA Summer Conference Workshops.

VTEA SUMMER CONFERENCE 2009 Overview

Monday-Friday, August 3-7
MathScience Innovation Center
8:00am-4:00pm

Class Title: ISAT 501 WOKSHOP IN TECHNOLOGY: GEOSPATIAL TECHNOLOGIES

A graduate workshop/course for educators that provides basic training in the use of geospatial technologies: GIS, GPS, Imagery, location/field data collection.

Description: This graduate course provides training in the use of geographic information systems (GIS) and global positioning systems (GPS). These technologies are key in many business, government, and industry workplaces such as natural resource management, landscape architecture and planning, surveying, civil engineering, urban planning, and real estate development, etc. The course will engage teachers in experiences that will help build their understanding of the fundamental concepts and applications of GIS and GPS systems (hardware & software) in real world situations. Graduate credit through JMU.

Monday, August 3
Deep Run High School
9:00am-3:30pm

Writing Successful Grants for Technology Jesse W. White, Immediate Past President VTEA and Patti Moore Shaffer , Vice President, Research & Development, Education Policy Institute.

School districts are feeling the pinch of the economy. At the same time, grant funding sources are increasingly conservative. This workshop will provide a grant-writers perspective of how to help Technology Education teachers develop ideas worthy of grant-funding, identify sources of grants, compose the proper wording of grant. This workshop will provide an insider's technical view of the grants process to give teachers a competitive edge when seeking funds for ideas. Some attention will be paid to typical sources and what will not be a fundable idea. This presentation will include hands-on activity to increase your skills.

Tuesday, August 4, 2009
Richmond Convention Center

Developing a Bright Future---Career and Technical Education Professional Development Institute

Join other Career and Technical Education teachers all day in the exhibits, sessions, and meals with speakers. Governor Kaine will speak at the evening banquet. A Teacher and Student Showcase are also being held. Go to <http://www.cpe.vt.edu/cte/> for further information.

Wednesday, August 5, 2009

Opening Breakfast Meeting at the Westin Hotel, 7:00a.m.

Speaker: Deb Newberry on Nanotechnology

Pochohantas Middle School
8:45am-12:00pm

Lego NXT for Beginners Bill Duggins

Using Lego NXT is an engaging way to catch student interest while learning object oriented programming

Pen Making Rick Long

Each participant will learn how to teach "pen making" to middle school students and actually turn their own pen on the wood lathe.

Alternative Energy Kelvin, Inc.

Alternative energy is a hot topic. Learn some ways to involve students in exploring this topic.

8:45-10:15am

Using Nanoscience to Teach Critical Thinking Skills Deb Newberry

Rapid advances in nanoscience and nanotechnology research indicate a need for corresponding science, engineering and medical education efforts. Issues relating to K-12 scientific and technological literacy become even more pressing concerns. Advances in nanoscience and nanotechnology are expected to impact all aspects of human experience, e.g. healthcare and medicine, transportation, electronics, and environmental sustainability, to name but a few

10:30am-12:00pm

Biotechnology Made Easy Kathleen F. Stansbury

We will discuss the implementation of a middle school biotechnology curriculum. Hands-on activities will be focusing on “garden in a glove”, organic vs. non-organic foods, and my soybean baby. A slide show will also be presented to show activities using the greenhouse.

Virginia TSA-How To Make It Co-Curricular LaTasha Watson

A student organization is a powerful instructional tool that works best when integrated into the Technology Education curriculum and classroom by an instructor who is committed to the total development of the student.

1:00-2:30pm

Virginia TSA-How to Get Started LaTasha Watson

Everything you need to know about starting a TSA Chapter. Resources will be distributed and the most asked questions from new advisors addressed. This workshop will show you how to get a chapter affiliated at your school, fundraising ideas, and conference information.

Technology Education & STEM: Same, but Different Georgette Yakman

Demystifying K-12 STEM Education (Science – Technology – Engineering – Mathematics) – Easy ways to transition a current program or to create/expand a new program. Looking at both integrative and discipline-based concepts of STEM.

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3:00-4:30pm

Teaching Middle School Technology Education Mark Bolt

Join our Middle School Teacher of Excellence award winner and find out how he makes his classes come alive.

NAWIC Middle School Build/Design Program Ashley Hines

Teachers will learn about the NAWIC Middle School Design Build Program, teaching lessons, models and videos will show units in the construction trades.

Busta Bookworm Project Kenneth Holmes

The Busta Bookworm Project is an act of technology designed to encourage students to read. Today's students are confronted with many things which distract them from reading. The Technology teacher and students decided to create and design a robotic bookworm which could move remotely and talk to kids about the importance on freading. The project has appeared on tv, radio, in news publications, and live at area schools to promote reading.

1:00-4:30pm

Super Capacitor Hover Craft Kelvin, Inc.

Super Capacitor propulsion is a cutting edge technology. Participants will learn about the system as they construct a hover craft.

Lego NXT for Intermediate Users Bill Duggins

If you have been using Lego and NXT programming this session will take you a little deeper into the possibilities.

Deep Run High School

8:45am-4:30pm

STEM: Descriptive Geometry Made Simple Allen Patton

An "M" in STEM, Descriptive Geometry is the 'Calculus' of Engineering Graphics or Technical Drawing. It is the mathematical theory behind the ability to describe the relationships between points, lines, & planes in 3-dimentional space---can all be found graphically thru the use of Descriptive Geometry. Because of the M (for Math) in STEM, we should recognize this powerful contribution to the foundation of our Graphics and Technical Drawing courses by having knowledge of Descriptive Geometry theories and practices..

Mechatronics Earl Henry Hurlburt, II

Participants will learn basic electronics, sensors, motor control, and programming. They will learn how to program and use a Programmable Logic Controller (PLC) called the Piksssac. They will also learn how to implement this into their Electronics, Engineering or Programming curriculum..

8:45am-12:00pm

Microcontrollers – Robotics and Sensors Jessica Uelmen, Parallax, Inc.

The BASIC Stamp Microcontroller can be used to monitor sensors and control actuators, which is great for robotics. Hands on lab – try sensors and test drive robots.. Dan Tryon teaches at Oswego in New York state and will share tips and techniques in a materials lab setting.

Video Editing John Allen

Participants focus on workflows and skills for assembling various types of programs, including advanced skills in editing and performing color correction. Topics include basic setup, logging and

digitizing media, editing and trimming techniques, 3D effect palette, title tool, audio suite, prepping for output and final output to tape.

Plastics and Polymers Dan Tryon, Oswego

Working with plastics and teaching polymer materials in a lab setting Dan Tryon teaches at Oswego in New York state and will share tips and techniques with you.

1:00-2:30pm

Using Nanoscience to Teach Critical Thinking Skills Deb Newberry

Rapid advances in nanoscience and nanotechnology research indicate a need for corresponding science, engineering and medical education efforts. Issues relating to K-12 scientific and technological literacy become even more pressing concerns, given the extent to which advances in nanoscience and nanotechnology are expected to impact all aspects of human experience, e.g. healthcare and medicine, transportation, electronics, and environmental sustainability, to name but a few. Dan Tryon teaches at Oswego in New York state and will share tips and techniques in a materials lab setting.

3:00-4:30pm

Teaching High School Technology Education Johnny Moye

Join Virginia's 2008 High School Technology Education Teacher of the Year to see what makes his courses relevant, beneficial, and exciting for his students. Many ideas are not new and will be reiterated, some are new and innovative. If you are passionate about teaching and want a few ideas on how to build your program with students who care about learning and being productive, then this is the presentation to attend!

1:00-4:30pm

Microcontrollers – Electronics and Programming Jessica Uelmen, Parallax, Inc

Students can now use small "onboard computers" found in modern electronic products and appliances to automate their projects, robots, and design contest entries. Learn how in this hands-on lab.

Plastics and Polymers Dan Tryon, Oswego

Working with plastics and teaching polymer materials in a lab setting. Dan Tryon teaches at Oswego in New York state and will share tips and techniques with you.

Hermitage High School

8:45am-12:00pm

Engineering Principles by Energy Concepts, Inc Tom Clater

This hands-on workshop is for you if you are starting an Engineering Program and/or re-purpose existing PT I & II equipments. Six units of study will be reviewed, including hands-on experience. Units of study are: Introduction to Engineering, Precision Measurement, Electrical Circuits, Mechanisms, Fluid Systems and Alternative Energy.. Dan Tryon teaches at Oswego in New York state and will share tips and techniques in a materials lab setting.

8:45am-4:30pm

Using Inventor in The Classroom--for those who use the tutorials in Help first Barrett Airaghi

The basics of using Inventor, with preconference practice project. Email me and I will send it to you for you to practice ahead of time. Note sheets, projects and material for your students will be given out.

Teaching PIC Concepts in the High School (Day 1 of 2) Steve Hsiung, ODU

This workshop will introduce a newly designed PIC microcontroller training system with accompanying curriculum. It is a low cost system that includes all the needed hardware, software, and the curriculum/teaching material. The platform costs about \$125.00/station. All attendees need to bring a laptop computer running WIN XP or Vista and will get an 8"*10" PIC Training System board, associated peripheral devices, motors (DC & Stepper), software, curriculum package in a CD. If you are using PIC microcontroller in any form or interested in learning about it, this is the workshop for you.

1:00-4:30pm

Engineering Principles by Energy Concepts, Inc Gary Seale

This hands-on workshop is for you if you are starting an Engineering Program and/or re-purpose existing PT I & II equipments. Six units of study will be reviewed, including hands-on experience. Units of study are: Introduction to Engineering, Precision Measurement, Electrical Circuits, Mechanisms, Fluid Systems and Alternative Energy.

The Westin Hotel

Join VTEA and your colleagues in recognizing the outstanding Technology Education teachers and programs in Virginia. The banquet will feature awards, followed by a reception.

Thursday, August 6, 2009
8:30-11:30am

Flexicell Robotics Tour Flexicell Tour

Flexicell, Inc. is a leading robotic systems integrator, providing custom packing, palletizing, and material handling solutions such as case packing, assembly, feeding of product to other machinery, vision inspecting, collating, machine loading and unloading, conveying and palletizing.

Pochohantas Middle School

Engineering by Design: Technological Systems Curt Funkhouser, ITEA-CATTS Trainer

Technological Systems is intended to teach students how technological systems work together to solve problems and capture opportunities. The new EbD materials have been designed based on standards for science, technology and math at the appropriate grade levels.

Pen Making Rick Long

Each participant will learn how to teach "pen making" to middle school students and actually turn their own pen on the wood lathe.

8:30-10:00am

Using Kits and Parts to Teach Competencies in Middle School Pitsco, Inc.

With time at a premium, kits and pre-made parts can help speed up competency results.

10:30am-12:00pm

“Electronic Game Challenge” Bud Jacobs

How to download, setup and use Gamemaker as a tool for the TSA Electronic Game Challenge.

1:00-2:30pm

NAWIC Middle School Build/Design Program Ashley Hines

Teachers will learn about the NAWIC Middle School Design Build Program, teaching lessons, models and videos will show units in the construction trades.

3:00-4:30pm

Using Kits and Parts to Teach Competencies in Middle School Pitsco, Inc.

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Teaching Production in the Middle School Ken Mitchell

Teachers will learn how to build and set up a production line to make dragster blanks which can be used for their Technology Education Program. Also this is a method to help reduce the cost of running the Lab!

1:00-4:30pm

Scratch for Beginners – Programming Without Programming Chuchun Tsai

Scratch is a free software used to create interactive animations, games, music, and art. This program is an excellent tool for anybody to rapidly prototype an idea.

Engineering by Design: Inventions and Innovation Curt Funkhouser, ITEA-CATTS Trainer

Invention and Innovation provides students with opportunities to apply the design process in the invention or innovation of a new product, process, or system. The new EbD materials have been designed based on standards for science, technology and math at the appropriate grade levels.

Deep Run High School

8:30-10:00am

Assembly Line Team Project Steven Love

Participants will learn about a unit developed for Computer Systems Technology where students learn about assembly lines, industrial engineering, and jobs in factories. Working in teams, students develop plans to assemble a matching set of computers beginning at the component level. Teams compete for fastest assembly time and quality in the multi-variable activity.

10:30AM-12:00pm

Virginia TSA-How To Get Started LaTasha Watson

Everything you need to know about starting a TSA Chapter. Resources will be distributed and the most asked questions from new advisors addressed. This workshop will show you how to get a chapter affiliated at your school, fundraising ideas, and conference information.

8:30AM-12:00pm

Engineering Design Materials from EbD Amy Gensemer, ITEA-CATTS Trainer

These rich materials focus on how engineers apply their creativity, resourcefulness, mathematical, scientific, and technical knowledge and skills in the creation or refinement of technological products/systems.

~~**Lego NXT for Beginners – Object Oriented Programming** Bill Duggins~~

~~Using Lego NXT to interest students in object oriented programming. *Moved to Friday at middle school*~~

Advanced Photoshop Techniques & Tricks Anthony Rumley

Mr. Rumley, President of the Virginia Professional Photographers Association, will demonstrate and explain advanced techniques of Photoshop used by the best professional photographers.

Scratch for Beginners – Programming Without Programming ChuchunTsai

Scratch is a free software used to create interactive animations, games, music, and art. This program is an excellent tool for anybody to rapidly prototype an idea.

1:00-2:30pm

Beginning Photoshop Mickey Peters

For beginners in Photoshop, how to create good basic pictures. You will use the program and learn how to navigate, change colors, fix defects in pictures, and other techniques.

Virginia TSA-How To Make It Co-Curricular LaTasha Watson

A student organization is a powerful instructional tool that works best when integrated into the Technology Education curriculum and classroom by an instructor who is committed to the total development of the student.

3:00-4:30pm

Technology Education & STEM: Same, but Different Georgette Yakman

Demystifying K-12 STEM Education (Science – Technology – Engineering – Mathematics) – Easy ways to transition a current program or to create/expand a new program. Looking at both integrative and discipline-based concepts of STEM.

1:00-4:30pm

Teaching and Managing Geospatial Technology Projects Tim Greenway

Using Arcview in the classroom and exchanging technology lessons and data that works. We will explore teaching Geospatial Technology by meeting with county government. Solving problems and answering questions.

Engineering Design Materials from Ebd Amy Gensemer, ITEA-CATTS Trainer

These rich materials focus on how engineers apply their creativity, resourcefulness, mathematical, scientific, and technical knowledge and skills in the creation or refinement of technological products/systems.

Video Editing John Allen

Participants focus on workflows and skills for assembling various types of programs, including advanced skills in editing and performing color correction. Topics include basic setup, logging and digitizing media, editing and trimming techniques, 3D effect palette, title tool, audio suite, prepping for output and final output to tape.

Hermitage High School
8:30am-4:30pm

Digital Photography with Richmond History Tour Mark Bierly

Information and facts about digital photography will be combined with a tour of the VA. state capitol and historic sites. Bring your pictures back and make a slide show.

Teaching PIC Concepts in the High School Day 2 Steve Hsiung, ODU

Continuation of PIC microcontroller training system with accompanying curriculum. You must have attended day 1 in order to participate in day 2.

8:30am-12:00pm

AutoCAD Update (2007-2010) William Wyatt

Update of new features in AutoCAD. Focus will be on changes in latest versions. Teachers will have hands-on instruction and receive curriculum materials.

SolidWorks CAD Academy – A Pre-Engineering/Architecture Program Russell Mickelson

This session will feature a hands on look at The CAD Academy pre-engineering & architecture program through a short design project. Participants will receive a free software title of their choice.

1:00-4:30pm

Introducing Modeling & Simulation to Technology Education Thomas Pinelli

This session is designed to introduce technology education teachers and administrators to modeling and simulation, an emerging, engineering-based technology that is dramatically and rapidly changing how we compete in today's global economy; how we prepare for 21st century careers; and how we teach, learn, learn to work.

How to incorporate 3D printing into your design or engineering program Rich Sykes

This session will feature a hands on look at the latest 3D printing technology from Dimension, the uPrint. The uPrint is the lowest priced 3D printer on the market and makes durable ABS Plastic parts. start making 3D models in durable ABSplus plastic.

BARBEQUE---Join friends and colleagues for regional get togethers and fun. Drawings for prizes, walking distance of the Westin; what more can you want on a Thursday night?!!

Friday, August 7, 2009

Virginia BioTechnology Research Park Tour 8:30-11:30am

The Virginia BioTechnology Research Park is a dynamic biosciences community strategically headquartered in downtown Richmond, VA. The Park is home to a unique mix of more than 50 biosciences companies, research institutes affiliated with the VCU Medical Center and major state and national medical laboratories and organizations involved with forensics, testing of biotoxins and management of the nation's organ transplantation process.

After a 45 minute detailed presentation of Biotech Park and it's nine buildings, you will be given a 30 minute walking tour down of Park.

**Pochohantas Middle School
8:30am-12:00pm**

Pen Making Rick Long

Each participant will learn how to teach "pen making" to middle school students and actually turn their own pen on the wood lathe.

Engineering by Design: Exploring Technology Curt Funkhouser, ITEA-CATTS Trainer

Exploring Technology students develop an understanding of the progression and scope of technology through exploratory experiences. The new EbD materials have been designed based on standards for science, technology and math at the appropriate grade levels.

TSA--Affecting Student Success Sam Turner

This session explores the connections of STEM, Technology Education, and TSA. It will include political and cultural ramifications and relationships within the school and community. A brief overview of the decisions to sponsor and fund a chapter will be presented along with 2 modified hands-on activities for parent visitations, open house, or differentiated classroom activities.

Lego NXT for Beginners--Object Oriented Programming Bill Duggins

Using Lego NXT to interest students in object oriented programming. Moved from Thursday at Deep Run---high teachers given preference

Deep Run High School
8:30am-12:00pm

Engineering Design Materials from Ebd Amy Gensemer, ITEA-CATTS Trainer

These rich materials focus on how engineers apply their creativity, resourcefulness, mathematical, scientific, and technical knowledge and skills in the creation or refinement of technological products/systems.

8:30-10:00am

Differentiation for CAD Related Projects/lessons Dana Newcomer

Explore several lessons that are focused on differentiation for CAD, Inventor, and 3D Studio Max-based design classes. I will present the lessons and differentiation suggestions and then, depending on the equipment provided, we can create some of the projects mentioned.

NASA Engineering Design Challenges: Spacecraft Structures E. Dynae Fullwood

Engineering Design Challenges are organized around the challenges faced by NASA engineers in developing the next generation of space vehicles, habitats, and technologies. Each challenge engages students through design, testing and evaluation processes used by engineers.

10:30am-12:00pm

NASA Engineering Design Challenges: Thermal Protection Systems E. Dynae Fullwood

Engineering Design Challenges are organized around the challenges faced by NASA engineers in developing the next generation of space vehicles, habitats, and technologies. Each challenge engages students through design, testing and evaluation processes used by engineers.

Hermitage High School
8:30am-12:00pm

Autodesk/VEX Robotics Curriculum Material Thomas Pringle

Ideas on ways to integrate the Autodesk/VEX curriculum projects into your pre-engineering program. Hands-on activities using Inventor and VEX Robot.

Modeling and Simulation: A Model Curriculum for High Schools Bill Jackson, Phil Reed, Ginger Watson, ODU

Participants will be provided a complete high school modeling and simulation curriculum. This workshop will also engage teachers as they learn how to use the curriculum activities and 3D Studio Max software.

TheWestin Hotel
VTEA Luncheon and Business Meeting
12:15-2:00pm

Speaker: E. Dynae Fullwood

NASA education efforts are interested in targeting Technology Education students with projects to increase their understanding of engineering. Aerospace Education Services Projects (AESP) are engineering design challenges organized around the issues faced by NASA engineers in developing the next generation of space vehicles, habitats, and technologies. Students are engaged through design, testing and evaluation processes used by engineers.

06/12/09