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Seminars, Webinars & Telephone/Webcasts for Aerospace Professionals

November 2009 – June 2010

Technical areas of seminars include:

See inside for seminar overviews, dates & locations

- Avionics
- Electronics (Communications & Controls)
- Design Processes/Techniques
- Engines & Propulsion
- Fuels/Energy Sources
- Management & Education
- Materials/Chemicals
- Noise/Vibration/Harshness (NVH)
- Quality & Reliability
- Safety
- Systems & Components
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REGISTRATION INFORMATION

If you have a disability that may impact your participation in this seminar, please call 2 weeks prior to the start date so that we can address your needs.

Cancellations – If you cannot attend, you may send a substitute or transfer to a future offering. A full refund is issued if you notify SAE at least 14 days prior to seminar start date. If canceled less than 14 days prior, the full fee is charged. For $50, you may process a one-time transfer to a future offering within one year of canceled seminar. Canceling may reduce group discounts. To cancel, transfer or send a substitute, call SAE Customer Service at 1-877-606-7323 or 1-724-776-4970. For the SAE Membership registration rates, member dues must be current at the start of the event.

Note: SAE reserves the right to change instructors or cancel seminars and cannot be held responsible for costs incurred other than the registration fee. Prices are subject to change.

New Interactive Links! Click on the seminar title to view the complete course description.

Digital Avionics Fiber Optics Technology and Standards for Aerospace *New*

November 9, 2009 - Seattle, WA, USA

I.D.#C0924

Once used only sparingly in select digital avionics air vehicle interconnect applications, fiber optics technology has gained widespread acceptance and is becoming increasingly prevalent as standard equipment on modern aerospace platforms. As such, most new aerospace platform or retrofit programs include a fiber optic trade study in its conceptual and system design and development process. This comprehensive seminar introduces participants to aerospace fiber optics technology. Additionally, this seminar provides an overview of important standards that are available to them during the system design and development process.

This one-day seminar begins with a discussion on the basic physics of light and its application to fiber optics. Following a fundamental overview of fiber optic cable, connector, and transceiver technologies, participants learn about supportability, maintainability, manufacturing quality, and installation concerns, with emphasis given to design interface controls and life cycle cost parameters. Prior lessons learned are summarized with an emphasis on aerospace fiber optic design engineering and support principles. The seminar concludes with an in-depth description of relevant military and aerospace standards along with an example digital fiber optic system design and development methodology case study.

Instructor: Mark Beranek

Fee $725; SAE Members $635 **.7 CEUs**

SAE Professional and Legal Issues Certificate Program

SEMINARS

SAE has developed this certificate program that focuses on some of the core legal and risk management issues critical for engineers to master in successfully designing and deploying products from a safety and liability perspective. Courses address patent law, product liability, risk management, and expert witness testimony.

Upon completing all four courses, a certificate is awarded, recognizing completion of the Professional and Legal Issues Certificate Program.

The following courses are required:

- Patent Law for Engineers
- Product Liability and the Engineer
- The Role of the Expert Witness in Product Liability Litigation
- Program and Risk Management

For more information on the certificate program, visit **www.sae.org/contedu/certificate.htm**

SAE International

Introduction to AS5553 and Counterfeit Electronic Parts Avoidance Training *New*

November 10, 2009 - Seattle, WA, USA

I.D.#C0950

Counterfeit electronic parts have been found in almost every sector of the electronics industry and continue to be an increasing threat to electronic hardware. This threat poses significant performance, reliability and safety risks. Aerospace industry organizations, in particular, must produce and continually improve safe and reliable products that meet or exceed customer and regulatory authority requirements. The SAE AS5553 standard was created in response to the significant and increasing volume of counterfeit electronic parts entering the aerospace supply chain and standardizes requirements, practices and methods for counterfeit parts risk mitigation. The resulting document presents solutions to address counterfeit electronic parts issues across a large cross-section of the electronics industry.

This comprehensive one-day seminar introduces participants to AS5553 and specifically addresses counterfeit part risk mitigation methods in electronic design and parts management, supplier management, procurement, part verification, material control, and response strategies when suspect or confirmed counterfeit parts are discovered. The seminar will provide information and guidance in each of these key requirement areas. The latter part of the course will highlight counterfeit detection techniques and part compliance verification methods. Several examples of counterfeit parts will be reviewed in detail. The course will conclude with a hands-on learning exercise in identifying, under a microscope, characteristics that can be found in counterfeit electronic parts. To accomplish this, attendees are encouraged to bring a personal laptop computer. The instructors will provide a limited number of digital microscopes and electronic parts.

In addition to the seminar handout, a copy of the *SAE AS5553: Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition* standard is provided to each registrant.

Instructors: Phil Zulueta and Katherine Whittington

Fee $785; SAE Members $695 **.7 CEUs**

KEY

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Fundamentals of Shielding **New** Design for EMC Compliance

December 4, 2009 - Troy, MI, USA

May 26, 2010 - Troy, MI, USA

I.D.#C0835

It is important for electronic and hardware engineers to be knowledgeable not only of a product's intended function and performance, but also its ability to perform within electromagnetic compatibility (EMC) limits. This seminar introduces practical shielding theory, design fundamentals, and configurations, including shielding products, common and differential modes, electromagnetic fields, and enclosure shielding. A segment on enclosure testing is presented in conjunction with an aperture attenuation modeling program (which is used to model attenuation characteristics at various frequencies and aperture size prior to expensive FCC/CE compliance or MIL-STD-461 testing). Honeycomb vent panels, plating attenuation comparisons, and galvanic compatibility per MIL-STD-1250 will also be discussed.

Instructor: Michael J. Oliver

Fee $725; SAE Members $635 **.7 CEUs**

Coming Soon! **New** Aerospace Product Support: Sustainment Throughout the Lifecycle

Visit www.sae.org/seminars for schedule.

I.D.#C0945 - 2 Days

In today's aerospace products, product life-cycles are often being extended far beyond the original design expectations. In addition to the initial product acquisition cost, customers are becoming more aware and sensitive to the product's total life-cycle cost. The long-term costs to operate, maintain, and otherwise sustain these products are often a determining factor in the initial product acquisition. This seminar is intended to introduce participants to the various approaches, technologies, and tools available to support a product throughout the product's total life-cycle in the most efficient and effective manner possible. The Elements of Logistics, Performance Based Logistics (PBL), and Product Support Integration are some of the topics included.

Instructor: Drex Rutledge

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

Failure Modes and Effects Analysis (Product & Process) in Aerospace

November 9-10, 2009 - Seattle, WA, USA

I.D.#C0939

This interactive Failure Modes and Effects Analysis (FMEA) product and process seminar introduces the participant to the analytical process by which potential failure modes, failure effects and causes of failure are identified. Engaging in a systematic method of studying failure can improve future outcomes. The severity, occurrence and probability of detection of a failure mode are used to prioritize which failure modes are most critical. Methodology is introduced for dealing with the effects of failure. The Design FMEA link to manufacturing is explained and amplified in terms of downstream Process FMEA. This course is based on "learning by doing" with interactive, in-class Design and Process FMEA generation and analysis in a lively team environment. This course will also detail relevant portions of the SAE Aerospace Recommended Practice for FMEA, ARP 5580 which is included in the course materials.

Instructor: Jim Breneman

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

New Interactive Links! Click on the seminar title to view the complete course description.

Coming Soon! **New** Human Factors in Flight Decks: Design and Certification

Visit www.sae.org/seminars for schedule.

I.D.#C0952 - 1 Day

Advances in technology continue to lead to progressively more complex aircraft and cockpit designs. The complexities of the modern day aircraft must be balanced with the cognitive and physical capabilities and limitations of the pilots that fly them. Aviation Human Factors is recognized as a discipline that addresses these challenges. This seminar is designed for engineers and other aviation professionals seeking a fundamental understanding of human factors and ergonomics and how the discipline applies to the design and certification of the cockpit. FAA and EASA regulations and guidance material will also be examined in an effort to help participants understand the system integration challenges and how to incorporate human factors throughout the design and certification processes.

Instructor: Cindy Miller

Fee $725; SAE Members $635 **.7 CEUs**

Reverse Engineering: Technology of Reinvention

Visit www.sae.org/seminars for schedule.

I.D.#C0559 - 2 Days

During the past decade reverse engineering has become a common and acceptable practice utilized by many original equipment manufacturers and suppliers. This course focuses on the application of modern technologies used to decode the design details and manufacturing processes of an existing part in the absence of the original design data. It emphasizes the real-life practice of reverse engineering in the aerospace industry from both scientific and legal points of view. Attendees will learn the applicability and limitations of reverse engineering through case studies and hands-on exercises.

Instructor: Wego Wang

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

Systems Engineering for Front Line Leadership

Available only as an in-house training course.

I.D.#C0902 - 2 Days

Systems Engineering is a proven and effective way of coordinating the complexity of major projects in the design and manufacture of aerospace products. This two day seminar will provide the front line leader with high level insights into the key issues associated with the successful implementation of the Systems Engineering process on any program, large or small.

Instructor: Howard (Lon) Scott

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

Design for Manufacturing & Assembly (DFM/DFA)

May 5-6, 2010 - Troy, MI, USA

I.D.#92047

Design for Manufacturing and Assembly (DFM+A), pioneered by Boothroyd and Dewhurst, has been used by many companies around the world to develop creative product designs that use optimal manufacturing and assembly processes. Correctly applied, DFM+A analysis leads to significant reductions in production cost, without compromising product time-to-market goals, functionality, quality, serviceability, or other attributes. In this two-day seminar, you will not only learn the Boothroyd Dewhurst Method, you will actually apply it to your own product design!

This seminar will include information on how DFM+A fits in with QFD, concurrent engineering, robust engineering, and other disciplines. In addition, there will be a brief demonstration of computer software tools, which simplify the DFM+A analysis.

Each participant will receive and use the hard-bound authoritative reference textbook, *Product Design for Manufacture and Assembly*, written by Geoffrey Boothroyd, Peter Dewhurst and Winston Knight.

Instructor: Kevin Zielinski

Fee $1,325; SAE Members $1,195 **1.3 CEUs**

Design Reviews for Effective Product Development

November 20, 2009 - Troy, MI, USA

May 10, 2010 - Troy, MI, USA

I.D.#C0004

Design reviews are required for ISO 9001:2000 compliance and compatible automotive and aerospace specifications. They are becoming increasingly important in product liability litigation and are accepted as a cost-effective best practice and an effective application of knowledge management, valuable for accelerating the maturity of new products.

This seminar describes how formal design reviews can improve products by uncovering potential problems before they are discovered at a later stage of development or application, when the costs of correction are much higher. A broad range of effective techniques for organizing and conducting design reviews will be presented. Specific guidance and tools to assist attendees in structuring design reviews tailored to their own company, specification, or contract requirements will also be provided. Material covered will be applicable to all types of development programs, ranging from components to complete vehicles, and for both OEMs and suppliers.

Instructor: Angelo Mago

Fee $725; SAE Members $635 **.7 CEUs**

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New Interactive Links! Click on the seminar title to view the complete course description.

Finite Element Analysis for Design Engineers - Hands-on FEA Workshop

December 10-11, 2009 - Troy, MI, USA

May 3-4, 2010 - Troy, MI, USA

I.D.#93006

The Finite Element Analysis (FEA) has been widely implemented by automotive companies and is now used by design engineers as a design tool during the product development process. Design engineers analyze their own designs while they are still in the form of easily modifiable CAD models to allow for quick turnaround times and to ensure prompt implementation of analysis results in the design process. When used properly, the FEA becomes a tremendous productivity tool helping design engineers reduce product development time and cost. On the contrary, misapplication of FEA may lead to erroneous design decisions, which are very expensive to correct later in the design process.

This seminar provides design engineers with skills necessary for proper use of FEA in the design process and to ensure that this powerful tool is implemented in the most efficient and productive way.

The seminar offers hands-on exercises focusing on the analysis of FEA errors and proper modeling techniques. Attendees study different types of analyses typically performed by design engineers, discuss common misconceptions and traps in the FEA and review Implementation of Management of FEA in the design environment. The seminar provides opportunities to discuss and exchange FEA experiences. The seminar layout allows for some customization so problems of particular interest to students can be discussed in class.

All topics are illustrated by hands-on examples using FEA software SolidWorks Simulation. However, acquired skills are not software specific and no prior exposure to any FEA software is required.

The SAE book, *Finite Element Analysis for Design Engineers*, by Paul Kurowski is included in the course materials.

Instructor: Paul Kurowski

Fee $1,255; SAE Members $1,130 **1.3 CEUs**

Fundamentals of Geometric Dimensioning & Tolerancing (GD&T) Webinar

New

February 3-26, 2010 - via telephone/internet

I.D.#WB0933

This webinar will be presented in eight, 2-hour sessins.

Geometric dimensioning and tolerancing (GD&T) is used as a symbolic way of showing specific tolerances on drawings. GD&T is a valuable tool that effectively communicates the design intent to manufacturing and inspection. It is governed by the technical standard ASME Y14.5M-1994, which was updated earlier this year. This course introduces participants to the GD&T system, providing a working knowledge of the correct interpretation and application of each symbol, general rules, the datum system, and 'bonus' tolerance and highlighting some of the changes in the updated Y14.5 standard. The material is reinforced with many practice exercises.

Instructor: John-Paul Belanger

Fee $915; SAE Members $825 **1.6 CEUs**

Geometric Dimensioning & Tolerancing

May 12-14, 2010 - Troy, MI, USA

I.D.#C0133

This in-depth course covers the GD&T system, including why it reduces costs, how to interpret the symbols, and how to apply these tolerances correctly. Participants will learn the basic definitions and rules, the importance of datums, the meaning of each tolerance, and sample ways of gaging geometric tolerances. The class is mainly lecture, with many practice exercises. Participants are encouraged to bring sample parts and/or prints (with or without GD&T already applied) to class for questions. Time is reserved for discussing the application of GD&T to your parts/prints.

Instructor: John-Paul Belanger or John Stolter

Fee $1,555; SAE Members $1,395 **2.0 CEUs**

Mechatronics: Introduction, Modeling and Simulation

New

April 14-15, 2010 - Detroit, MI, USA

I.D.#C0949

Modern engineering challenges and their solutions are often multidisciplinary in nature. Systems in today's vehicles integrate mechanical, electronic, hydraulic, as well as various other components all working together in a synergistic manner. While progress is being made in lowering the barriers between traditional engineering disciplines and formal education programs, this seminar is designed to provide engineers with mechanical or electrical engineering backgrounds the knowledge to effectively interact with colleagues from the other discipline in an efficient and productive manner.

This two-day seminar is designed for the engineer with little or no mechatronics systems experience and will begin with an introduction to mechatronics principles and components, including sensors, actuators, control strategies, and instrumentation. The instructor will then guide the participants through the analysis, synthesis and design of mechatronics systems through the use of modeling and simulation tools. Emphasis will be given to a unified energy flow approach to model mechatronics systems that are comprised of multidisciplinary components. A key element of this seminar is the use of computer simulation exercises to enhance and reinforce the learning experience. The instructor will conduct modeling and simulation exercises for this class using commercial vehicle and automotive mechatronics systems examples. Attendees desiring a more direct hands-on learning experience are encouraged to bring a personal laptop computer with the demonstration version of the 20-sim modeling simulation software installed prior to arrival (available at http://www.20sim.com/downloads/downloadform.)

The text, *Mechatronic Modeling and Simulation Using Bond Graphs*, authored by Shuvra Das is included with the seminar.

Instructor: Shuvra Das

Fee $1,275; SAE Members $1,145 **1.3 CEUs**

New Interactive Links! Click on the seminar title to view the complete course description.

Tolerance Stack-Up Analysis

June 14-15, 2010 - Troy, MI, USA

I.D.#C0022

This course is designed to help product design personnel create tolerance stacks for parts and assemblies that use Geometric Dimensioning & Tolerancing. Those who will benefit most are designers and engineers who are responsible for creating the GD&T callouts for engineering drawings and product models, and who want to be more confident in how the assigned geometric tolerances interact and stack up. The course begins with a quick review of Y14.5 concepts, and then introduces the benefits and uses of a tolerance stack spreadsheet. Participants then learn detailed procedures for performing tolerance stacks on parts and assemblies, beginning with coordinate tolerances and moving on to geometric tolerances.

The course will eliminate confusion over how to include the bonus and shift in a tolerance stack: for example, when using tolerance of position with the MMC modifier. The simple, manual spreadsheet method used throughout the course produces a straightforward documentation trail that is easily interpreted, and readily adaptable to any company's electronic spreadsheet program. Results can be quickly and easily checked, and revisions can be made with ease. Students receive extensive practice at creating stacks, and should bring a calculator or laptop computer equipped with MS Excel for the numerous student exercises.

Each attendee will receive a copy of the *Tolerance Stack Analysis Using GD&T* textbook and an Excel template for generating stacks.

Instructor: John-Paul Belanger or John Stolter

Fee $1,225; SAE Members $1,105 **1.3 CEUs**

Tolerance Stack-up Fundamentals Webinar *New*

November 11-20, 2009 - via telephone/internet

I.D.#C0842

This webinar will be presented in four, 90-minute sessions.

Analysis of tolerance stacks varies widely. This webinar introduces the basic tools to create a common methodology for tolerance stack-ups, and ensure seamless documentation. Participants will create 1-D tolerance stacks for parts and assemblies that use geometric dimensioning and tolerancing using a tolerance stack spreadsheet. This simple, manual spreadsheet method produces an easily interpreted and checked documentation trail, and is easily adaptable to common electronic spreadsheet programs. Multiple examples will be provided to assist engineers in applying tolerance stack-up fundamentals to Y14.5 issues.

Instructor: John-Paul Belanger

Fee $585; SAE Members $525 **.8 CEUs**

Using Computational Fluid Dynamics for Engineering Product Development *New*

November 9-10, 2009 - Troy, MI, USA

I.D.#C0909

Over the last three decades Computational Fluid Dynamics (CFD) has developed into a sophisticated tool for analyzing fluid flow and other thermal sciences related phenomena. Most educational courses on this topic focus on the fundamentals of CFD, but sound knowledge of the fundamentals is not enough to make effective use of CFD in practical engineering product development. This seminar provides significant practical considerations in using CFD for product development and is designed to help engineers extract best benefits from CFD while avoiding potential pitfalls.

The seminar begins by discussing the applicability, benefits, and drawbacks of CFD in engineering product development. Ways of leveraging CFD, while avoiding pitfalls at various stages of the product development process, as well as various aspects of managing and implementing practical CFD projects, will be explained. Advanced aspects of CFD management and implementation such as methods development and multiphysics will also be covered. The resource requirements and costs of CFD are then detailed along with a discussion and exercises on performing return of CFD investment calculations. Commercially available codes will also be compared and contrasted. Hands-on exercises and case studies are used throughout the seminar to put practical emphasis on topics taught in the lectures.

Instructor: Sandeep Sovani

Fee $1,195; SAE Members $1,075 **1.3 CEUs**

Interested in having one of these seminars at your company?

If so, please call SAE's Corporate Learning Solutions hotline at 724-772-8529, or complete the online form at www.sae.org/corplearning

KEY

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Liquid Atomization, Sprays, and Fuel Injection

Visit www.sae.org/seminars for schedule.

I.D.#98019 - 3 Days

Liquid fuel atomization and spray formation is the heart of the majority of stationary and mobile power generation machines that we rely on. This seminar focuses on the process of liquid atomization and spray formation and how it relates to fuel injection systems and emission of pollutants in modern engines. The seminar begins with background coverage of terminology, the purposes of liquid atomization and spray formation, and different designs of atomizers and nozzles employed in various industries. The focus is then directed to gasoline and diesel fuel injections, injector designs, and performance requirements for optimum engine operation with lowest possible emission of harmful pollutants. Based on the idea that knowledge of technical practices and advances in one area (i.e. diesel fuel injection) is beneficial to engineers in other areas (gasoline direct injection, rocket engines), this seminar takes an interdisciplinary approach. Attendees will understand the technology and logic behind different injector designs, and gain the knowledge to judge, adapt and transfer technology advances from one discipline to another.

Instructor: Bruce Chehroudi

Fee $1,495; SAE Members $1,345 **2.0 CEUs**

Microbial Contamination in Aviation Fuel and Aircraft Fuel Systems

Available only as an in-house training course.

I.D.#C0728 - 1 Day

Microbial contamination in aviation fuel creates biomats that clog filters and scavenge systems, coat fuel quality indicator systems (FQIS) probes, and lead to structural corrosion, impacting the operational and economical aspects of turbine powered fixed wing and rotary wing aircraft. From inaccurate fuel level readings to aborted take-offs and air interrupts, microorganisms can wreak havoc on the entire aircraft and the system operations. Attendees will learn how microorganisms enter and survive in the fuel distribution and storage network, and how a routine surveillance program can manage risk and mitigate lost profits. Students will have the opportunity to experience hands-on techniques to detect and remediate contamination in aviation fuel systems.

Instructors: Ed English & Howard Chesneau

Fee $725; SAE Members $635 **.7 CEUs**

KEY

CERTIFICATE PROGRAM ACTAR APPROVED SEMINARS ONLINE COURSES

To register, go to: http://t.sae.org/seminarsAC or call 1-877-606-7323 (U.S. & Canada) or 1-724-776-4970

New Interactive Links! Click on the seminar title to view the complete course description.

Aerospace Program Management - It's More than Scheduling and Delivery

Available only as an in-house training course.

I.D.#C0818 - 3 Days

Effective and efficient management of today's complex and integrated programs requires both the refinement of interpersonal and basic leadership skills as well as the application of appropriate technologies and tools. This seminar is intended to introduce basic program management skills and techniques to first-line and mid-level leaders to help them comfortably and confidently assume their role and to aid in assuring program success.

Instructor: Drexel L. Rutledge

Fee $1,495; SAE Members $1,345 **2.0 CEUs**

Understanding the FAA Aircraft Certification Process

November 9-10, 2009 - Seattle, WA, USA

I.D.#C0821

The task of certifying an aircraft or part can be overwhelming given the lengthy process and the many steps that are required. Understanding the process can greatly enhance the outcome and reduce unnecessary delays or frustrations. This course will provide an overview of the Federal Aviation Administration (FAA) organizational structure, its policies, guidelines and requirements leading to Type and Supplemental Type airworthiness approvals. It will also cover the rule-making process and rules applicable to aircraft parts and products. The course will define the roles and responsibilities of the Aircraft Certification Office (ACO), Manufacturing Inspection District Office (MIDO), Flight Standards District Office (FSDO), and the Aircraft Evaluation Group (AEG). Type and Supplemental Type Certification (TC and STC) processes, and Change Product Rule for alterations and modifications to previously type certified aircraft will be discussed. FAA rule-making process will be examined including review of FAA Orders, Notices, Advisory Circulars and other guidance material.

Instructor: Ken Farsi

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

Leading High Performance Teams

May 3-4, 2010 - Troy, MI, USA

I.D.#C0410

Product development is organizationally a complex undertaking that requires effective coordination within a company and between companies. During product development, teams are confronted with a number of ongoing organizational challenges and there is a high potential for conflict between participants in the process.

This course addresses teamwork and other "soft-side" factors that largely determine whether product development programs are successfully completed on schedule. The content is relevant for both OEMs and suppliers.

Instructor: Joseph Doyle

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

Managing Engineering & Technical Professionals

April 12-14, 2010 - Detroit, MI, USA

I.D.#C0608

In the fast paced and competitive environment of today's global economy, the work of technical professionals is often the difference between success and failure in an organization. Providing leadership for engineers is uniquely challenging, and the transition from working engineer to first-line technical supervisor is one of the most difficult career challenges that an engineer may face. First-time engineering supervisors and mid-level managers who wish to sharpen their skills and learn new techniques for guiding, coaching, and motivating working engineers, technicians, and designers will find this seminar valuable. A mix of lecture and attention-grabbing exercises are used to develop intense and lasting learning results.

Instructor: Michael A. Anleitner

Fee $1,545; SAE Members $1,390 **2.0 CEUs**

Patent Law for Engineers

November 2, 2009 - Troy, MI, USA

I.D.#88007

This information-packed seminar focuses on the intricacies of patents, patent infringement litigation and patent licensing. Attendees will explore the important subjects of obtaining U.S. and foreign patents, maintaining U.S. and foreign patent rights, enforcing patent rights, defending against patent rights asserted by competitors, and licensing patent rights for revenue. After this seminar, you will effectively understand patents and ways to protect your company's valuable inventions. Your new knowledge will help your company maintain and enhance its position in the marketplace.

Instructor: Russell E. Levine

Fee $725; SAE Members $635 **.7 CEUs**

SAE General Management and Leadership Certificate Program

SEMINARS

SAE has developed this certificate program that focuses on four core management and leadership competencies: management capability, team leadership, project management, and finance.

Upon completing all four courses, a certificate is awarded, recognizing completion of the General Management and Leadership Certificate Program.

The following courses are required:

- Managing Engineering & Technical Professionals
- Engineering Project Management
- Principles of Cost and Finance for Engineers
- Leading High Performance Teams or Successfully Working in Virtual Teams

For more information on the certificate program, visit **www.sae.org/contedu/certificate.htm**

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New Interactive Links! Click on the seminar title to view the complete course description.

Patent Litigation in the U.S.: What You Need to Know Webinar **New**

May 11-13, 2010 - via telephone/internet

I.D.#WB0940

This webinar will be presented in two, 2-hour sessions.

This webinar will tell you what you need to know about U.S. patent litigation and will provide in-depth insights into the practical realities of patent disputes in the U.S. You will learn what's involved in a patent case, including the issues that the patent owner has to prove, e.g. infringement, and the issues the accused infringer has to prove, e.g., invalidity. You will increase your awareness of the role of the judge and the jury in patent cases and you will hear about the increasing use of alternative dispute resolution mechanisms, such as mediation, to resolve patent disputes. Among other topics, this course also will increase your appreciation for the time it typically takes to go from the filing of a case to trial, and the fees and expenses associated with the case.

Instructor: Russell E. Levine

Fee $395; SAE Members $355 **.4 CEUs**

Principles of Cost and Finance for Engineers **New**

December 9-11, 2009 - Troy, MI, USA

April 12-14, 2010 - Detroit, MI, USA

I.D.#C0828

In today's corporate environment of shrinking budgets, required structural cost reductions, sharing of global designs/services, and pricing pressures, it is critical that engineers possess a working knowledge of engineering economics principles. To fully understand the economic viability of engineering decisions, engineers need to find the appropriate balance between design alternatives, resulting costs, and impact on their enterprise. This seminar introduces participants to the cost, finance and economic concepts and their applications to products and services. This three-day course provides you with practical information normally obtained through university level economics and business management courses and will help you to maximize efficiencies from both an engineering and economics perspective.

Note: Attendees are requested to bring with them a business or scientific calculator capable of doing exponential calculations.

Instructor: James Masiak

Fee $1,495; SAE Members $1,345 **2.0 CEUs**

Strategic Leadership

February 10-12, 2010 - Troy, MI, USA

I.D.#C0620

As a strategic leader, it is your responsibility to ensure that your organization is moving in the right direction. Executives and high-level managers must have the practical insight necessary to address competitive business challenges. Each segment of this three-day course is designed to impart simple, but powerful lessons that will equip participants to more fully engage in strategic discussions, ask pertinent questions, facilitate critical decisions and shape high performing organizations. In addition, the course provides students with a personal leadership profile that illustrates their strengths and potential limitations. Participative exercises assist emerging executives with practical and effective methods of gaining organizational credibility and avoiding common errors in strategic leadership.

Instructor: Joseph Doyle

Fee $1,535; SAE Members $1,380 **2.0 CEUs**

Successfully Working in Virtual Teams **New**

April 15-16, 2010 - Detroit, MI, USA

I.D.#C0943

Organizations are increasingly relying on virtual project teams to compete in rapidly changing domestic and global markets. They are reliant on them as a creative means by which to deal with increased global customer expectations, global competition, time, pressure, and rapid change. Achieving results from a virtual/distributed team, where team members work across different sites, in other cities, or on the other side of the globe, can be challenging. While virtual teams can provide real benefits to organizations, they often present new challenges to project leaders who are not prepared for the realities of getting things done at a distance. Research systemically shows that virtual teams suffer from a high failure rate-enthusiasm is simply not enough.

This seminar features cutting-edge information and critical tools to enable you to overcome the barriers of distance, cultural diversity and lack of time, while maintaining communication through collaborative technology. It will help you develop the tools necessary to manage distributed teams while strengthening working relationships and operational effectiveness across multiple sites supported by team members you rarely see "face-to-face".

Instructor: Johanna Hassan Hollowich

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

The Role of the Expert Witness in Product Liability Litigation

February 15-16, 2010 - Troy, MI, USA

I.D.#92054 - 1.5 Days

According to the Federal Rules of Evidence, an expert witness is anyone who can assist the trier of fact (the jury) in understanding any issue in dispute at trial. The witness' ability to give this assistance can be derived from any specialized training, education, background, or experience. To be effective in providing this assistance, however, requires that the expert witness understand the true role that he or she is to play both before and at the trial. This seminar will address the critical issues that every person who may be, has been, or is, an expert witness must understand to assist both the attorney and the product manufacturer, regardless of which side the expert serves.

Instructor: Charles F. Seyboldt

Fee $1,155; SAE Members $1,035 **1.0 CEUs**

New Interactive Links! Click on the seminar title to view the complete course description.

Aerospace Coatings and Corrosion Control: Materials and Applications

November 11-13, 2009 - Seattle, WA, USA

I.D.#C0819

Advancing technologies command a continual understanding of current coating materials and applications. Coating suppliers are being called upon to provide new and innovative coating technologies that address aesthetics, excellent durability and environmental issues. Coating users are also increasingly under pressure to economize their operation and offer corrosion resistant and highly durable and functional coated aircraft parts. It is crucial that those involved in product design and manufacture understand and implement techniques that support industry demand.

This course addresses information and processes regarding current products and future trends in the aerospace industry. An interactive, learner controlled instruction style, with an emphasis on problem solving discussions, makes it easy for attendees to obtain answers to specific questions.

Instructor: Jamil Baghdachi

Fee $1,495; SAE Members $1,345 **2.0 CEUs**

Adhesive Bonding Technology

January 14-15, 2010 - Troy, MI, USA

I.D.#90023

The overall objective of this seminar is to offer a sound assessment of the latest developments in adhesive bonding technology, available materials and methods. The course will focus on industrial applications of adhesives, discuss case histories and present approaches to solving existing problems in selection, process, quality and efficiency. The seminar is appropriate for those with limited to moderate knowledge of adhesives who need, or want to learn more. In addition, current adhesive users will become familiar with advances and developments in this area.

Instructor: Jamil Baghdachi

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

Fundamentals of Metal Fatigue Analysis

December 14-16, 2009 - Troy, MI, USA

April 14-16, 2010 - Detroit, MI, USA

I.D.#94024

There is a potential for metal fatigue in any situation where a component is subjected to cyclic loads. Fatigue failures of various types are a key concern in increasing the reliability of products. Problems involving fatigue have become more severe with the demand for lighter weight structures and components. The effective use of fatigue analysis and predictive tools is critical for reducing the development time of new products. Two methods of metal fatigue analysis will be covered. The first is the stress-life approach. This method is used for high cycle or very long life fatigue problems where loads have fairly constant amplitude. Applications of this method include engine components, gears and shafts. The second method is the strain life approach, which is used for cases involving low cycle fatigue where loads may have a variable amplitude. Applications of this method include suspension and chassis components. The strain-life approach is also more useful when dealing with non-ferrous alloys. Other key topics to be addressed include residual stress, shot peening, cycle counting methods and environmental effects. Extensive use of example problems and case studies will be used. The overall objective of the course is for participants to gain an understanding of the phenomenon of metal fatigue and most importantly learn what methods are available to predict and prevent failures.

Instructor: Jess J. Comer

Fee $1,545; SAE Members $1,390 **2.0 CEUs**

Metal Corrosion and Its Prevention

June 28-29, 2010 - Troy, MI, USA

I.D.#99006

Corrosion accounts for billions of dollars in losses to a variety of metallic structures and products annually. This seminar provides insight into corrosion, its underlying causes, and potential solutions, topics which are important to all engineers involved with the design and specification of metal components and structures.

Elementary concepts related to the more common types of corrosion will be reviewed, as well as the various methods available for minimizing corrosion in metals. This course will conclude by examining at least two corrosion case histories of interest to engineers involved in transportation vehicle design.

Types of corrosion to be described in this seminar include galvanic corrosion (dissimilar metals), concentration cell corrosion, crevice corrosion, stress corrosion, and corrosion-assisted fatigue. In addition, "uniform" corrosion will be discussed as it applies to such common occurrences as the general rusting of steel. Methods of corrosion protection include cathodic protection from sacrificial anodes and impressed DC voltage, anodic protection, inhibitors, and coatings. The effectiveness and limitations of these techniques will be discussed.

Instructor: Darrell W. Smith

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

KEY

CERTIFICATE PROGRAM ACTAR APPROVED SEMINARS ONLINE COURSES

New Interactive Links! Click on the seminar title to view the complete course description.

Basic Noise Control

February 8, 2010 - Troy, MI, USA

I.D.#86028

Gain an understanding of the basic physical principles needed to solve noise problems.

This seminar provides an introduction to the physical principles, language and fundamental techniques used to control noise. Emphasis will be placed on the practical implications of the physical principles behind noise control. A short introduction will be given to the subjective measures of noise that serve as the background for many of the noise measurement methods in common use. The control of existing product noise through the design of enclosures and barriers as well as empirical approaches to the control of noise in cooling systems & hydraulic systems will be covered. Upon completion of the seminar, the student will be able to choose the appropriate noise control mechanism (absorption, barriers, source modification) and avoid the costly over application of noise control materials, which is common in retrofit programs.

Instructor: Robert F. Hand

Fee $725; SAE Members $635 **.7 CEUs**

Noise and Vibration Measurement: Instruments and Facilities

November 13, 2009 - Troy, MI, USA

I.D.#86030

Learn how to get the most accurate noise measurement data. Providing a broad introduction to the instruments and facilities used to measure noise and vibration, this seminar emphasizes the proper selection of transducers, calibration, limitations of instruments and choice of analyzers to support the project objectives. Extra emphasis will be given to the proper selection and operation of tape recording systems used to store data for later analysis. The course will also include a discussion of the design and qualifications of anechoic rooms, reverberant rooms and outdoor test sites.

Instructor: Robert F. Hand

Fee $725; SAE Members $635 **.7 CEUs**

Sound Package Materials for Vehicle Noise Control

May 10-11, 2010 - Troy, MI, USA

I.D.#92032

Selection of acoustical materials for vehicle interior noise reduction requires an in-depth understanding of vehicle noise, noise propagation, and the noise control properties of acoustical materials. This seminar will provide a detailed analysis of three different acoustical materials, how they are different from each other, and acoustical properties that materials should possess for optimum vehicle noise control. Attendees will also learn ways to evaluate the acoustical performance of these materials using different test methods.

This seminar was formerly titled Selection, Evaluation and Measurements of Acoustical Materials for Vehicle Interior Noise.

Instructor: Pranab Saha

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

Sound Package Materials for Vehicle Noise Control Webinar

October 5-28, 2010 - via telephone/internet

I.D.#C0813

This webinar will be presented in eight, 90-minute sessions.

Selection of acoustical materials for vehicle noise reduction requires an in-depth understanding of vehicle noise, noise propagation, and the noise control properties of acoustical materials. This webinar will provide a detailed analysis of three different acoustical materials, namely absorber, barrier, and damper, how they are different from each other, and acoustical properties that materials should possess for optimum vehicle noise control. Participants will also learn ways to evaluate the acoustical performance of these materials using different test methods. Although the illustrations are from vehicle applications, the fundamentals of this webinar are applicable for nonautomotive applications as well.

Instructor: Pranab Saha

Fee $915; SAE Members $825 **1.6 CEUs**

Vibration Analysis using FEA: A Hands-on Workshop

May 5-6, 2010 - Troy, MI, USA

I.D.#C0830

FEA has been used by engineers as a design tool in new product development since the early 1990's. Until recently, most FEA applications have been limited to static analysis due to the cost and complexity of advanced types of analyses. Progress in the commercial FEA software and in computing hardware has now made it practical to use advanced types as an every day design tool of design engineers. In addition, competitive pressures and quality requirements demand a more in-depth understanding of product behavior under real life loading conditions.

This seminar introduces one of the advanced types of FEA: vibration analysis. By considering time dependent loads and inertial effects, vibration analysis allows for a more in-depth product simulation thus reducing product development cost and time. The course reviews basic concepts of vibration analysis and illustrates how they are implemented in FEA to simulate product behavior. The most common types of vibration analysis such as modal, time response, frequency response and random vibrations are covered. Participants will have the opportunity to practice skills learned utilizing the commercial FEA software SolidWorks Simulation.

Instructor: Paul Kurowski

Fee $1,195; SAE Members $1,075 **1.3 CEUs**

New Interactive Links! Click on the seminar title to view the complete course description.

Understanding AS9100-C *New* Quality Management System Standard

November 11-12, 2009 - Seattle, WA, USA

I.D.#C0935

In a global economy, suppliers have the challenge of delivering products to multiple customers with varying quality requirements and expectations. To assure customer satisfaction, aviation, space and defense organizations must produce and constantly improve safe, reliable products that meet or exceed customer demand in addition to meeting statutory and regulatory requirements.

This two-day seminar focuses on the changes to the newly revised AS9100, in Revision C to ensure solid application of the new specifics for the revision of this standard and its family of documents. AS9100 has been revised to incorporate the requirements of ISO 9001:2008. Included in the training will be a detailed review and intent of AS9100-C requirements and all changes made with an overview of the process used to update the standard, including the design specification. A discussion on the International Aerospace Quality Group (IAQG) and American Aerospace Quality Group (AAQG) will also be included.

The original version of International Standard AS9100 specifies requirements for a quality management system. This standard specifies where an organization needs to demonstrate ability to consistently provide product that meets customer and applicable regulatory requirements, and aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable regulatory requirements. While this course provides a comprehensive overview of the changes made to AS9100 in Revision C, additional training would be required for auditor certification.

Instructor: Buddy Cressionnie
Fee $1,215; SAE Members $1,095 **1.3 CEUs**

Understanding AS9100 Rev C Webinar

December 4, 2009 - via telephone/internet

I.D.#WB0958

This two-hour webinar will provide participants with first-hand explanations and insight regarding the changes found in AS9100:2009 (Rev C). The instructor will begin with an explanation of the overall revision objectives followed by the design specification criteria that each change was required to meet in order to be considered. Because AS9100 incorporates the requirements of ISO 9001:2008, participants will also gain valuable insight into the ISO 9001:2008 amendments. The instructor will then guide participants through the implementation timeline so that each participant acquires understanding and insight into how AS9100 Rev C will impact their organization and their efforts to obtain certification.

Instructor: Buddy Cressionnie
Fee $245; SAE Members $195 **.2 CEUs**

New Interactive Links! Click on the seminar title to view the complete course description.

Design of Experiments (DOE) for Engineers Webinar *New*

February 2-18, 2010 - via telephone/internet

I.D.#WB0932

This webinar will be presented in six, 2-hour sessions.

Design of Experiments (DOE) is a methodology that can be effective for general problem-solving, as well as for improving or optimizing product design and manufacturing processes. Specific applications of DOE include, but are not limited to, identifying root causes to quality or production problems, identifying optimized design and process settings, achieving robust designs, and generating predictive math models that describe physical system behavior. This competency-based webinar utilizes a blend of reading, discussion and hands-on to help you learn the requirements and pre-work necessary prior to DOE execution, how to select the appropriate designed experiment to run, DOE execution, and analysis of DOE results. You will experience setting up, running, and analyzing simple-to-intermediate complexity Full Factorial and Partial Factorial experiments both by hand and using computer software. You will also set-up and analyze Robust/Taguchi and Response Surface experiments utilizing computer software.

Each participant will receive a 30-day MinitabTM product trial copy for use in the webinar. Due to the nature of the webinar format, each participant will be expected to dedicate approximately one hour to complete "homework" and/or short reading assignments in preparation for each session.

Instructor: Kevin Zielinski

Fee $915; SAE Members $825 **1.2 CEUs**

Root Cause Problem Solving: Methods and Tools Webinar *New*

January 19-28, 2010 - via telephone/internet

I.D.#WB0931

This webinar will be presented in four, 2-hour sessions.

Tough times require searching for things that we can change and making them better. But so often problems are solved with 'band-aids' and not root cause solutions. This approach is getting too expensive and at best only helps companies tread water. To combat these issues and adopt a fresh approach, teams can use the methods and tools of Root Cause Problem Solving to first view problems as opportunities for improvement, identify root causes and implement solutions to prevent recurrence. Benefits include improved quality and customer satisfaction, reduced operation costs, and greater employee knowledge of work processes.

This proven 8-step approach to problem solving will help improve operational and financial performance by identifying causes and implementing solutions to significant or recurring problems. This approach to problem solving is used by many major automotive manufacturers.

Instructor: Murray Sittsamer

Fee $585; SAE Members $525 **.8 CEUs**

Simplified Taguchi/DOE Methods

November 12-13, 2009 - Troy, MI, USA

I.D.#96017

Companies realize that they need to do more with less which means we need to use the most efficient and effective methods. This seminar blends the philosophy of Taguchi with the simple graphical methods of Box, Hunter, & Hunter to give a powerful set of DOE tools. Wide use of Design of Experiments or DOE methods has been hindered by complications in planning a DOE to handle interactions and by analysis complexity of ANOVA. A Preferred Columns Method simplifies planning so engineers can assign factors to an array in minutes. Graphical methods allow quality professionals to distinguish large (active) factors from small terms and portray these findings to broad audiences. By simplifying DOE's, road blocks are removed so that more people can begin using these highly productive methods.

Instructor: Jerry L. Roslund

Fee $1,215; SAE Members $1,095 **1.3 CEUs**

KEY

CERTIFICATE PROGRAM | ACTAR APPROVED SEMINARS | ONLINE COURSES

New Interactive Links! Click on the seminar title to view the complete course description.

Weibull-Log Normal Analysis Workshop

December 14-16, 2009 - Troy, MI, USA

May 17-19, 2010 - Troy, MI, USA

I.D.#86034

RMS (Reliability-Maintainability-Safety-Supportability) engineering is emerging as the newest discipline in product development due to new credible, accurate, quantitative methods. Weibull Analysis is foremost among these new tools. New and advanced Weibull techniques are a significant improvement over the original Weibull approach. This workshop presents special methods developed for these data problems, such as Weibayes, with actual case studies in addition to the latest techniques in SuperSMITH® Weibull for risk forecasts with renewal and optimal component replacement. Class work is used to reinforce key concepts, lectures are based on actual case studies, and personal computers and hands-on experiments are used to analyze dozens of Weibull & Log Normal problems. Students will be fully capable of performing basic and advanced RMS Engineering analysis with their own software on completion of the workshop.

Attendees will receive the entire SuperSMITH® package - a complete self-study course and combined software package containing: SuperSMITH® Weibull, SuperSMITH® Visual, The New Weibull Handbook® - 5th Edition and the PlayTIME® Tutorial Booklet. A $960 value!

Instructor: Wes Fulton

Fee $1,885; SAE Members $1,695 **2.0 CEUs**

Coming Soon! New Aircraft Cabin Safety and Interior Crashworthiness

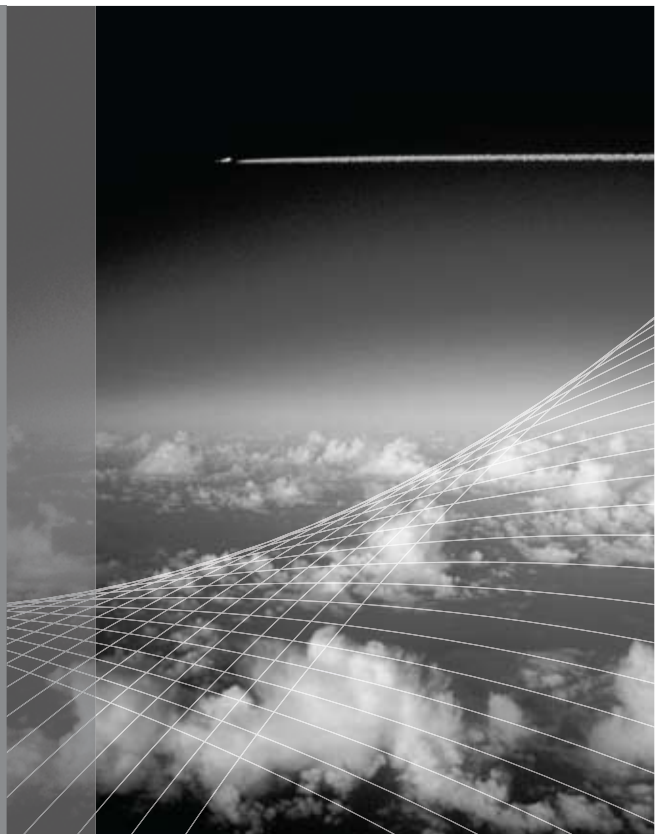
Visit www.sae.org/seminars for schedule.

I.D.#C0926 - 2 Days

The certification of transport category cabin interiors requires a thorough understanding of Part 25 transport category aircraft cabin interior safety and interior crashworthiness regulations and compliance requirements. Regardless whether it is a simple modification, a specialized completion (VIP or VVIP), or airline passenger configuration, engineers, designers, and airworthiness personnel must understand and adhere to these requirements. This course will provide an introduction to cabin interior safety and interior crashworthiness requirements as specified in Part 25.

Instructor: Ken Farsi

Fee $1,155; SAE Members $1,035 **1.3 CEUs**



New Interactive Links! Click on the seminar title to view the complete course description.

Introduction to Gears

February 25, 2010 - Troy, MI, USA

I.D.#C0822

This seminar is designed to provide gear novices with a general understanding of gear nomenclature, geometry, and arrangements. Starting with the basic definition of gears, conjugate motion and the "Laws of Gearing", you will gain a solid understanding of gearing and the fundamentals of rotary motion transfer through gear-trains. Gear classifications, tooth forms and geometry, and very high-level application considerations, manufacturing processes, and inspection techniques will be covered. Attendees will receive a copy of the book, *Gear Design Simplified*, by Franklin D. Jones & Henry H. Ryffel.

Instructor: William Mark McVea

Fee $755; SAE Members $665 **.7 CEUs**

Static and Dynamic Sealing

November 9-10, 2009 - Troy, MI, USA

May 24-25, 2010 - Troy, MI, USA

I.D.#92020

A wide variety of seal types are used to contain fluids and exclude contaminants in numerous applications. This seminar provides a comprehensive overview of static and dynamic sealing techniques. Attendees will receive a copy of the book, *Handbook of Fluid Sealing*, co-authored by instructor Les Horve.

Instructor: Les Horve

Fee $1,155; SAE Members $1,035 **1.3 CEUs**

The Tire as a Vehicle Component

December 14, 2009 - Troy, MI, USA

April 15, 2010 - Detroit, MI, USA

I.D.#C0101

The principal functions of the pneumatic tire are to generate driving, braking, and cornering forces while safely carrying the vehicle load and providing adequate levels of ride comfort. This seminar explains how tire forces and moments are generated under different operating and service conditions and, in turn, demonstrates how these forces and moments influence various vehicle responses such as braking, handling, ride, and high-speed performance. The content focuses on the fundamentals of tire behavior in automobiles, trucks, and farm tractors, but also includes experimental and empirical results, when necessary.

The Pneumatic Tire, a 700-page E-book on CD, edited by Joseph Walter and Alan Gent is included in the course material.

Instructor: Joseph D. Walter

Fee $725; SAE Members $635 **.7 CEUs**

Threaded Fasteners and the Bolted Joint

November 5-6, 2009 - Troy, MI, USA

April 12-13, 2010 - Detroit, MI, USA

I.D.#95030

This seminar introduces participants to all aspects of threaded fasteners including nomenclature, geometric considerations, metallurgy, material properties, applied stresses, and considerations for fatigue, corrosion, brittle fracture and temperature. Methods are developed for the analysis and design of bolted joints under axial and shear loads. Other topics include assembly practice and methods to control preload.

Instructor: Jess J. Comer

Fee $1,195; SAE Members $1,075 **1.3 CEUs**

Tire and Wheel Safety Issues

December 15, 2009 - Troy, MI, USA

April 16, 2010 - Detroit, MI, USA

I.D.#C0102

One of the most important safety critical components on cars, trucks, and aircraft is the pneumatic tire. Vehicle tires primarily control stopping distances on wet and dry roads or runways and strongly influence oversteer/under-steer behavior in handling maneuvers of cars and trucks. The inflated tire-wheel assembly also acts as a pressure vessel that releases a large amount of energy when catastrophically deflated. The tire can also serve as a fulcrum, both directly and indirectly, in contributing to vehicle rollover. This seminar covers these facets of tire safety phenomena. Engineering fundamentals are discussed and illustrated with numerous practical examples and case studies of current public interest.

The *Pneumatic Tire*, a 700-page E-book on CD, edited by Joseph Walter and Alan Gent is included in the course material.

Instructor: Joseph D. Walter

Fee $725; SAE Members $635 **.7 CEUs**

KEY

CERTIFICATE PROGRAM | ACTAR APPROVED SEMINARS | ONLINE COURSES

New Interactive Links! Click on the seminar title to view the complete course description.

Accelerated Test Methods for Ground and Aerospace Vehicle Development

December 14-15, 2009 - Troy, MI, USA

April 13-14, 2010 - Detroit, MI, USA

I.D.#C0316

Engineers and managers involved with product development are constantly challenged to reduce time to market, minimize warranty costs, and increase product quality. With less and less time for testing, the need for effective accelerated test procedures has never been greater. This course covers the benefits, limitations, processes, and applications of several proven accelerated test methods including accelerated reliability, step stress, FSLT (Full System Life Test), FMVT® (Failure Mode Verification Testing), HALT (Highly Accelerated Life Testing), and HASS (Highly Accelerated Stress Screening). A combination of hands-on exercises, team activities, discussion, and lecture are used throughout the course. Participants will also receive a copy of the instructor's book, *Accelerated Testing and Validation Management*, which includes numerous hands-on exercises and a CD with analytical spreadsheets.

Attendees are requested to bring a calculator to the seminar.

Instructor: Alexander (Alex) J. Porter

Fee $1,225; SAE Members $1,105 **1.3 CEUs**

PROFESSIONAL DEVELOPMENT SCHEDULE FOR 2010

Seminars, Webinars & Telephone/Webcasts for Mobility Engineers

Many courses are added throughout the year, please check online for the most current schedule at http://t.sae.org/seminarsAC.

Troy, MI - SAE Automotive Headquarters

Jan 11-12 Diesel Engine Technology - I.D.# 93014
Jan 11-13 Fundamentals of Heavy Truck Dynamics - I.D.# C0837
Jan 14-15 Adhesive Bonding Technology - I.D.# 90023
Jan 18-19 The Basics of Internal Combustion Engines - I.D.# C0103
Jan 20-21 Automotive Glazing Materials - I.D.# 99002
Jan 20-22 Designing On-Board Diagnostics for Light and Medium Duty Emissions Control Systems - I.D.# C0707
Jan 25-26 Piston Ring Design/Materials - I.D.# 86009
Jan 28-29 Acquiring and Analyzing Data from Sensors and In-Vehicle Networks - I.D.# C0522

Webinars - via telephone/internet

Jan 12 Introduction to Hybrid Powertrains Webinar - I.D.# C0903
Jan 14 Basic Hybrid and Electric Vehicle Safety Webinar - I.D.# C0904
Jan 19-28 Root Cause Problem Solving: Methods and Tools Webinar - I.D.# WB0931
Jan 20 Plug-in Hybrids: Opportunities and Challenges Webinar - I.D.# C0905
Jan 22 Hybrid and Electric Vehicles: Current Production, Future Strategies Webinar - I.D.# C0906

Troy, MI - SAE Automotive Headquarters

Feb 8 Basic Noise Control - I.D.# 86028
Feb 8-9 Control Systems Simplified - I.D.# C0525
Feb 10-12 Strategic Leadership - I.D.# C0620
Feb 15-16 The Role of the Expert Witness in Product Liability Litigation - I.D.# 92054
Feb 15-16 Fundamentals of Automotive Fuel Delivery Systems - I.D.# C0303
Feb 18-19 Modern Fluids for Crankcase Engines: An Overview - I.D.# C0704
Feb 18-19 Side Impact Occupant Safety and CAE - I.D.# C0717
Feb 22-24 Fundamentals of Modern Vehicle Transmissions - I.D.# 99018
Feb 25 Introduction to Gears - I.D.# C0822
Feb 25-26 Alternative Fuels: Impact on SI and CI Fuel Systems, Distribution, and Storage - I.D.# C0729

Webinars - via telephone/internet

Feb 2-18 Design of Experiments (DOE) for Engineers Webinar - I.D.# WB0932
Feb 3-26 Fundamentals of Geometric Dimensioning & Tolerancing (GD&T) Webinar - I.D.# WB0933

Troy, MI - SAE Automotive Headquarters

Mar 1-2 Introduction to Commercial and Off-Road Vehicle Cooling Airflow Systems - I.D.# C0738
Mar 8-9 Wet Brake & Clutch Technology - I.D.# 90002
Mar 8-10 Motor Fuel: Technology, Performance, Testing, and Specifications - I.D.# 98003
Mar 10-12 Automotive Fuel Cell Systems - I.D.# C0112
Mar 12 Exhaust Flow Performance and Pressure Drop of Exhaust Components and Systems - I.D.# C0235
Mar 15-16 Selective Catalytic Reduction for Diesel Engines - I.D.# C0913
Mar 15-17 Injuries, Anatomy, Biomechanics & Federal Regulation - I.D.# 85049
Mar 17-19 Combustion & Emissions for Engineers - I.D.# 97011
Mar 18-19 Fundamentals of Steering Systems - I.D.# C0716
Mar 22-23 Introduction to Hydraulic Hybrid Systems for Road Vehicles - I.D.# C0833
Mar 22-24 Turbocharging Internal Combustion Engines - I.D.# C0314
Mar 25-26 Introduction to Brake Control Systems: ABS, TCS, and ESC - I.D.# C0315

Phoenix, AZ, USA - Exponent Inc

Mar 22-23 Fundamentals of Motor Vehicle Fire Investigation - I.D.# C0915

Detroit, MI - Detroit Marriott at the Renaissance Center (during SAE International World Congress)

Apr 12 High Performance Engine Design and Development - I.D.# C0725
Apr 12 Automotive Lighting: LED Applications - I.D.# C0727
Apr 12-13 Threaded Fasteners and the Bolted Joint - I.D.# 95030
Apr 12-13 Diesel Emissions and Control Technologies - I.D.# C0206
Apr 12-14 Vehicle Dynamics for Passenger Cars and Light Trucks - I.D.# 99020
Apr 12-14 Fundamentals of Hybrid Electric Vehicles - I.D.# C0511
Apr 12-14 Managing Engineering and Technical Professionals - I.D.# C0608
Apr 12-14 Principles of Cost and Finance for Engineers - I.D.# C0828
Apr 12-14 Fundamentals of Heavy Truck Dynamics - I.D.# C0837
Apr 13-14 Catalytic Converters: Design and Durability - I.D.# 98017
Apr 13-14 Engineering Project Management - I.D.# 99003
Apr 13-14 Accelerated Test Methods for Ground and Aerospace Vehicle Development - I.D.# C0316
Apr 14-15 Automotive Lighting: Design and Technology - I.D.# C0202
Apr 14-15 Advanced Diesel Particulate Filtration Systems - I.D.# C0502
Apr 14-15 Evaporative and Refueling Emission Control - I.D.# C0928
Apr 14-15 Mechatronics: Introduction, Modeling and Simulation - I.D.# C0949
Apr 14-16 Fundamentals of Metal Fatigue Analysis - I.D.# 94024
Apr 15 The Tire as a Vehicle Component - I.D.# C0101
Apr 15-16 Vehicle Accident Reconstruction Methods - I.D.# C0416
Apr 15-16 Introduction to Hybrid and Electric Vehicle Battery Systems - I.D.# C0626
Apr 15-16 High-Performance Brake Systems - I.D.# C0718
Apr 15-16 Successfully Working in Virtual Teams - I.D.# C0943
Apr 16 Tire & Wheel Safety Issues - I.D.# C0102
Apr 16 Automotive Lighting: Testing and Requirements - I.D.# C0618

Troy, MI - SAE Automotive Headquarters (during SAE International World Congress)

Apr 12-13 Embedded Control Systems Design Workshop - I.D.# C0922
Apr 14-15 Vehicle Frontal Crash Occupant Safety and CAE - I.D.# C0621

Troy, MI - SAE Automotive Headquarters

Apr 26-28 Internal Combustion Systems: HCCI, DoD, VCT/VVT, DI and VCR - I.D.# C0613
May 3-4 Finite Element Analysis for Design Engineers-Hands-On FEA Workshop - I.D.# 93006
May 3-4 Leading High Performance Teams - I.D.# C0410
May 5-6 Design for Manufacturing & Assembly (DFM/DFA) - I.D.# 92047
May 5-6 Vibration Analysis using FEA: A Hands-on Workshop - I.D.# C0830
May 5-7 Hydraulic Brake Systems for Passenger Cars & Light Trucks - I.D.# C0509
May 10 Design Reviews for Effective Product Development - I.D.# C0004
May 10-11 Sound Package Materials for Vehicle Noise Control - I.D.# 92032
May 11-12 Introduction to FMEA for Product Design & Manufacturing Process Design - I.D.# 92002
May 12-14 Geometric Dimensioning & Tolerancing - I.D.# C0133
May 13-14 Controller Area Network (CAN) for Vehicle Applications - I.D.# C0120
May 17-18 Diesel Engine Technology - I.D.# 93014
May 17-19 Weibull-Log Normal Analysis Workshop - I.D.# 86034
May 19 Common Rail Diesel Fuel Injection - I.D.# C0920
May 20 A Familiarization of Drivetrain Components - I.D.# 98024
May 21 Fundamentals of Automotive All-Wheel Drive Systems - I.D.# C0305
May 24-25 Static and Dynamic Sealing - I.D.# 92020
May 24-26 Advanced Vehicle Dynamics for Passenger Cars and Light Trucks - I.D.# C0415
May 26 Fundamentals of Shielding Design for EMC Compliance - I.D.# C0835

Webinar - via telephone/internet

May 11-13 Patent Litigation in the U.S.: What You Need to Know Webinar- I.D.# WB0940

Greer, SC - BMW Performance Center

May 3-5 Applied Vehicle Dynamics - I.D.# C0414

Troy, MI - SAE Automotive Headquarters

Jun 3-4 In-Vehicle Networking with LIN and FlexRay Applications - I.D.# C0136
Jun 3-4 Advanced High Strength Steels for Vehicle Weight Reduction - I.D.# C0916
Jun 14-15 Tolerance Stack-Up Analysis - I.D.# C0022
Jun 17-18 Powertrain Selection for Fuel Economy and Acceleration Performance - I.D.# C0243
Jun 17-18 Acquiring and Analyzing Data from Sensors and In-Vehicle Networks - I.D.# C0522
Jun 23-25 Chassis & Suspension Component Design for Passenger Cars & Light Trucks - I.D.# 95025
Jun 24-25 Compact Heat Exchangers for Automotive Applications - I.D.# 97002
Jun 28-29 Metal Corrosion and Its Prevention - I.D.# 99006
Jun 28-30 Commercial Vehicle Braking Systems - I.D.# C0233

To register, go to: http://t.sae.org/seminarsAC or call 1-877-606-7323 (U.S. & Canada) or 1-724-776-4970

PROFESSIONAL DEVELOPMENT SCHEDULE FOR 2010

Seminars, Webinars & Telephone/Webcasts for Mobility Professionals

Many courses are added throughout the year, please check online for the most current schedule at http://t.sae.org/seminarsAC.

Troy, MI - SAE Automotive Headquarters

Jul 12-13 Practical NVH Signal Processing Methods - I.D.# C0431
Jul 12-13 Selective Catalytic Reduction for Diesel Engines - I.D.# C0913
Jul 15-16 Automotive Cooling Airflow Systems: A Vehicle Perspective - I.D.# C0616
Jul 19-20 The Basics of Internal Combustion Engines - I.D.# C0103
Jul 21-22 Automotive Glazing Materials - I.D.# 99002
Jul 26-27 Piston Ring Design/Materials - I.D.# 86009
Jul 26-28 Fundamentals of Metal Fatigue Analysis - I.D.# 94024
Jul 29-30 Adhesive Bonding Technology - I.D.# 90023
Jul 29-30 Threaded Fasteners and the Bolted Joint - I.D.# 95030

Webinars - via telephone/internet

Jul 14-21 Design FMEA Update: What's New in J1739 Webinar - I.D.# WB0955
Jul 23-30 Process FMEA Update: What's New in J1739 Webinar - I.D.# WB0956

Troy, MI - SAE Automotive Headquarters

Aug 2-4 Fundamentals of Hybrid Electric Vehicles - I.D.# C0511
Aug 5-6 Design of Experiments for Engineers - I.D.# C0406
Aug 5-6 Introduction to Hybrid and Electric Vehicle Battery Systems - I.D.# C0626
Aug 9-11 Strategic Leadership - I.D.# C0620
Aug 11-13 Automotive Fuel Cell Systems - I.D.# C0112
Aug 19-20 Engineering Project Management - I.D.# 99003
Aug 23-24 Side Impact Occupant Safety and CAE - I.D.# C0717
Aug 25-27 Managing Engineering and Technical Professionals - I.D.# C0608
Aug 30-31 Modern Fluids for Crankcase Engines: An Overview - I.D.# C0704

Troy, MI - SAE Automotive Headquarters

Sep 9-10 Vehicle Frontal Crash Occupant Safety and CAE - I.D.# C0621
Sep 9-10 Alternative Fuels: Impact on SI and CI Fuel Systems, Distribution, and Storage - I.D.# C0729
Sep 13-15 Combustion & Emissions for Engineers - I.D.# 97011
Sep 13-15 Vehicle Dynamics for Passenger Cars and Light Trucks - I.D.# 99020
Sep 16-17 Introduction to Brake Control Systems: ABS, TCS, and ESC - I.D.# C0315
Sep 16-17 Control Systems Simplified - I.D.# C0525
Sep 20 Statistical Tolerance Design - I.D.# 88033
Sep 20 Exhaust Flow Performance and Pressure Drop of Exhaust Components and Syste - I.D.# C0235
Sep 22-24 Motor Fuel: Technology, Performance, Testing, and Specifications - I.D.# 98003
Sep 27-28 Fundamentals of Automotive Fuel Delivery Systems - I.D.# C0303
Sep 27-29 Fundamentals of Modern Vehicle Transmissions - I.D.# 99018
Sep 29-30 Introduction to Commercial and Off-Road Vehicle Cooling Airflow Systems - I.D.# C0738
Sep 30 Introduction to Gears - I.D.# C0822

Webinars - via telephone/internet

Sep 8-17 Tolerance Stack-up Fundamentals Webinar - I.D.# C0842
Sep 14 Introduction to Hybrid Powertrains Webinar - I.D.# C0903
Sep 16 Basic Hybrid and Electric Vehicle Safety Webinar - I.D.# C0904
Sep 21 Plug-in Hybrids: Opportunities and Challenges Webinar - I.D.# C0905
Sep 23 Hybrid and Electric Vehicles: Current Production, Future Strategies Webinar - I.D.# C0906

Troy, MI - SAE Automotive Headquarters

Oct 4-5 Vehicle Accident Reconstruction Methods - I.D.# C0416
Oct 4-5 Embedded Control Systems Design Workshop - I.D.# C0922
Oct 7-8 Evaporative and Refueling Emission Control - I.D.# C0928
Oct 11-13 Injuries, Anatomy, Biomechanics & Federal Regulation - I.D.# 85049
Oct 11-13 Weibull-Log Normal Analysis Workshop - I.D.# 86034
Oct 18 Patent Law for Engineers - I.D.# 88007
Oct 18-19 Diesel Emissions and Control Technologies - I.D.# C0206
Oct 19-20 Catalytic Converters: Design and Durability - I.D.# 98017
Oct 21-22 Accelerated Test Methods for Ground and Aerospace Vehicle Development - I.D.# C0316
Oct 28 The Tire as a Vehicle Component - I.D.# C0101
Oct 29 Design Reviews for Effective Product Development - I.D.# C0004
Oct 29 Tire & Wheel Safety Issues - I.D.# C0102

Webinar - via telephone/internet

Oct 5-28 Sound Package Materials for Vehicle Noise Control Webinar - I.D.# C0813

Troy, MI - SAE Automotive Headquarters

Nov 1 A Familiarization of Drivetrain Components - I.D.# 98024
Nov 1-2 Static and Dynamic Sealing - I.D.# 92020
Nov 2 Fundamentals of Automotive All-Wheel Drive Systems - I.D.# C0305
Nov 3-5 Geometric Dimensioning & Tolerancing - I.D.# C0133
Nov 3-5 Advanced Vehicle Dynamics for Passenger Cars and Light Trucks - I.D.# C0415
Nov 8 Fundamentals of Shielding Design for EMC Compliance - I.D.# C0835
Nov 8-9 Advanced Diesel Particulate Filtration Systems - I.D.# C0502
Nov 9 High Performance Engine Design and Development - I.D.# C0725
Nov 11-12 Introduction to FMEA for Product Design & Manufacturing Process Design - I.D.# 92002
Nov 11-12 Powertrain Selection for Fuel Economy and Acceleration Performance - I.D.# C0243
Nov 15-16 Fundamentals of Steering Systems - I.D.# C0716
Nov 15-16 Introduction to Hydraulic Hybrid Systems for Road Vehicles - I.D.# C0833
Nov 17-19 Principles of Cost and Finance for Engineers - I.D.# C0828
Nov 22-23 Finite Element Analysis for Design Engineers-Hands-On FEA Workshop - I.D.# 93006
Nov 22-23 Tolerance Stack-Up Analysis - I.D.# C0022
Nov 30 Common Rail Diesel Fuel Injection - I.D.# C0920

Greer, SC - BMW Performance Center

Nov 1-3 Applied Vehicle Dynamics - I.D.# C0414

Troy, MI - SAE Automotive Headquarters

Dec 1-3 Hydraulic Brake Systems for Passenger Cars & Light Trucks - I.D.# C0509
Dec 1-3 Managing Engineering and Technical Professionals - I.D.# C0608
Dec 6-8 Commercial Vehicle Braking Systems - I.D.# C0233
Dec 6-8 Fundamentals of Hybrid Electric Vehicles - I.D.# C0511
Dec 8-10 Fundamentals of Heavy Truck Dynamics - I.D.# C0837
Dec 9-10 Introduction to Hybrid and Electric Vehicle Battery Systems - I.D.# C0626
Dec 13-14 Leading High Performance Teams - I.D.# C0410
Dec 13-15 Fundamentals of Metal Fatigue Analysis - I.D.# 94024
Dec 16-17 Engineering Project Management - I.D.# 99003

For additional information or to register visit http://t.sae.org/seminarsAC or call 1-877-606-7323 in the U.S. & Canada or 1-724-776-4970.

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