

FY 04 CALENDAR (OCTOBER 2003 - SEPTEMBER 2004)

ENGINEERING & SCIENCES	COST	COURSE DATES AND COURSE CODES											
		OCT 03	NOV 03	DEC 03	JAN 04	FEB 04	MAR 04	APR 04	MAY 04	JUN 04	JUL 04	AUG 04	SEP 04
Acoustics, Basic	\$500						17-18						
Applied Statistics for Engineers	\$500			15-16								16-17	
Airborne Systems Test and Evaluation (TPS)	\$2000		11-21						17-28		19-30		
Airplane Flying Qualities Intro (TPS)	\$2027	20-31					29 Mar – 09 Apr						
Airworthiness	\$175			17			17			16			01
Class Desk & APML Orientation	None		03-07				22-26				12-16		
Crewstation Analysis (TPS)	\$1000			8-12		17-20							
Electromagnetic Interference and Compatibility (EMI/EMC)	\$1350							12-16					
Flight Test Introduction (TPS)	\$2000						15-26					16-27	
GPS-Based Targeting Systems	\$400						04					30	
Helicopter Stability & Control	\$3499						01-12						
Infrared Imaging Systems: An Introduction	\$775					17-18							
Intellectual Property and Technology Transfer	None	30		08		25		12		09		10	
Linear Algebra with Engineering Applications	\$500						15-16						
MIL-STD 1553 Multiplex Bus	\$850				27-29							17-19	

ENGINEERING & SCIENCES	COST	COURSE DATES AND COURSE CODES											
		OCT 03	NOV 03	DEC 03	JAN 04	FEB 04	MAR 04	APR 04	MAY 04	JUN 04	JUL 04	AUG 04	SEP 04
Rotary Wing Performance	\$500					23-27							
Spreadsheet Aided Engineering	TBD												
Systems Engineering, Fundamentals	\$1000						29 MAR – 02 APR				26-30		
SYSTEMS ENGINEERING TECHNICAL REVIEW (SETR) PROCESS	NONE									09-10		10-11	15-16
Underwater Acoustics I and Passive Sonar	\$500			08-09						16-17			
Underwater Acoustics II and Active Sonar	\$500			17-18								18-19	
Underwater Acoustics III and Sonobuoy Systems	\$500				06-07							24-25	
UAV Flight Test Intro (TPS)	\$1800	06-17										27 Sep b- 08 Oct	

COURSE TITLE:	ACOUSTICS, BASIC	
VENDOR:	Alan D. Stuart P.O. Box 393 Lemont, PA 16851	
LOCATION:	Employee Development Center, Building #2189	
	DATES: 17-18 MAR 04	NOMINATION DEADLINES: 17 FEB 04
TIME:	0800-1600	
DESCRIPTION:	This course provides an introductory overview of acoustics. Elements covered will include: acoustic waves in fluids and structures; plane and spherical waves; acoustic sensors and sources; wave and radiation impedance concepts; reference levels and dB scale; sound reflection, transmission, and refraction; Snell's law and coincident effect; sound radiation, source level and radiated power; directivity of simple sound sources and receivers; and acoustics filters, Helmholtz resonators and ducts.	
OBJECTIVE:	Emphasis is placed on illustrating phenomena and principles through demonstrations and examples from common experience. Topics are presented with a minimum of mathematics.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$500	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	APPLIED STATISTICS FOR ENGINEERS	
VENDOR:	Alan D. Stuart P.O. Box 393 Lemont, PA 16851	
LOCATION:	Employee Development Center, Building #2189	
	DATES: 15-16 DEC 03 16-17 AUG 04	NOMINATION DEADLINES: 15 NOV 03 16 JUL 04
TIME:	0800-1600	
DESCRIPTION:	This course provides a basic introductory overview of statistics and probability. Concepts introduced include: mean, variance, and standard deviation; probability density and cumulative distributions; sampling and decision theory; confidence levels and intervals; percentiles and probability plots; linear regression analysis; Venn diagrams, and combinational and conditional probabilities, etc. Engineering applications include: design-of-experiments, signal processing, manufacturing tolerances, system reliability. Participants receive a copy of the instructor's course notes, as well as a self-study review of text containing many worked-out examples.	
OBJECTIVE:	Students should complete the course with a basic understanding of statistical applications and how they relate to engineering.	
AUDIENCE:	This course is intended for engineers and technicians with a desire to learn about statistics and probability, or who need a refresher.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$500	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	AIRBORNE SYSTEMS TEST AND EVALUATION	
VENDOR:	United States Naval Test Pilot School	
LOCATION:	United States Naval Test Pilot School	
	DATE: 19-30 JUL 04	NOMINATION DEADLINE:
TIME:	0800-1530	
DESCRIPTION:	<p>Topics include:</p> <ul style="list-style-type: none"> ❖ Review of Report Writing ❖ Review of the Research and Evaluation Paragraph ❖ Airborne Systems Basics and Flight Test Techniques <ul style="list-style-type: none"> ❖ Radar Theory ❖ Electro-Optical Theory ❖ Navigation System Theory ❖ Software Test and Evaluation ❖ Integrated Systems Testing <ul style="list-style-type: none"> ❖ Test Design ❖ Safety and Technical Review ❖ Flying the Test <ul style="list-style-type: none"> ❖ Each student will conduct a radar, navigation and electro-optical integrated systems flight on the Airborne Systems Test and Research Support Airplane (ASTARS). ❖ Analysis of Results ❖ Data Presentation 	
OBJECTIVE:	<p>At the completion of this course, participants will:</p> <ul style="list-style-type: none"> ❖ Understand the theory of radar, navigation, and electro-optical systems individually and as part of an integrated system. ❖ Design and execute an integrated systems test plan. ❖ Report on test results both orally and several written formats. 	
AUDIENCE:	Engineers and scientists involved in the test and evaluation of airborne systems.	
NOMINATIONS:	<p>NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.</p>	
COST:	\$2000 (includes flight time)	
METHOD OF PAYMENT:	Internal Activity Allocation	
For more info., please contact the Short Course Department at the U.S. Naval TPS (301)757-5044		
POC:	(301) 757-4122	

COURSE TITLE:	AIRPLANE FLYING QUALITIES - INTRO	
VENDOR:	United States Naval Test Pilot School	
LOCATION:	USN Test Pilot School, B2168 (PAX River)	
	DATE: 20-31 OCT 03 29 Mar – 09 Apr 04	NOMINATION DEADLINE:
TIME:	Classes will be held in the morning Flights and labs will be scheduled throughout the day as required by course enrollment	
DESCRIPTION:	<p><u>Week One:</u> Aerodynamics Summary Longitudinal Statics Non-Maneuvering Flight Characteristics Maneuvering Flight Characteristics Flight Controls Aerodynamic Non-linearity Lateral Directional Statics Simulation Exercises 1 Static longitudinal, non-maneuvering and maneuvering Static lateral-directional Longitudinal Dynamics Longitudinal Dynamic Modes Longitudinal Transfer Modes Lateral-Directional Dynamic Modes Lateral-Directional Transfer Functions</p> <p><u>Week Two:</u> Longitudinal Handling Qualities/Testing Lateral-directional Handling Qualities/Testing Simulation Exercises 2 Longitudinal dynamic modes Lateral-directional dynamic modes Pilot Handling Qualities Evaluation Process Military Specifications and Standards Advanced Flight Control Systems This course includes two demonstration flights.</p>	
AUDIENCE:	Engineers and scientists involved in the test and evaluation of flight control systems.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$2027 (including two flights) Please contact USNTPS at the number below for information.	
METHOD OF PAYMENT:	Internal Activity Allocation	
For more information, please contact the Short Course Department at the United States Naval Test Pilot School. (301)757-5044.		
POC:	(301) 757-4122	

COURSE TITLE:	AIRWORTHINESS	
VENDOR:	Airworthiness/Flight Clearance AIR – 4.0P Patuxent River, MD 20670	
LOCATION:	Employee Development Center, B2189 (PAX River, MD)	
	DATE: 17 DEC 03 17 MAR 04 16 JUN 04 01 SEP 04	NOMINATION DEADLINE: 17 NOV 03 17 FEB 04 16 MAY 04 01 AUG 04
TIME:	0800-1530	
DESCRIPTION:	This course provides NAVAIR and NAVAIR ContractSupport personnel a working knowledge and a comprehensive understanding of the Airworthiness process. The course will define the three types of flight clearances and what an IFC, NATOPS or NATIP can authorize. This course will also explain the Naval Instructions that governs the Flight Clearance process: NAVAIRINST 13034.1B, 13034.2 and OPNAVIST 3510.15, 3710.7.	
OBJECTIVE:	At the completion of this course the participants should be able to: <ul style="list-style-type: none"> ❖ Understand NAVAIR policies and procedures pertaining to Airworthiness. ❖ Know what flight clearances are, when you need one, how to get one, and how to execute the process efficiently. ❖ Know the content of the NATIP and NATOPS and how they relate to interim flight clearances. ❖ Be familiar with the NATIP and NATOPS updates and change processes. 	
AUDIENCE:	System Eng, IPT Leads, Class Desks, Facilitators, Flight Clearance Performance Monitors, Flight Test Eng and mem of the NAVAIR RDT&E Community	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$175	
METHOD OF PAYMENT:	Internal Activity Allocation	
POC:	(301) 757-4122	

COURSE TITLE:	CLASS DESK – APML ORIENTATION	
VENDOR:	<i>Air 4.1 Naval Air Systems Command Patuxent River, Maryland 20670</i>	
LOCATION:	Employee Development Center, Building # 2189	
	DATE: 03-07 NOV 03 22-26 MAR 04 12-16 JUL 04	NOMINATION DEADLINE: 03 OCT 03 22 FEB 04 12 JUN 04
TIME:	0800-1530	
DESCRIPTION:	This five-day course provides a description of the roles and responsibilities for personnel assigned as Assistant Program Manager for Systems Engineering (Class Desk) or Assistant Program Manager for Logistics (APML) within a competency aligned organization, and the role of systems engineering and logistics in acquisition. Additional modules covering associated processes are presented including team capabilities, new acquisition model, systems engineering, logistics support, technical reviews, reliability and maintainability, engineering investigations and hazard material reports, grounding bulletins and red stripes, technical directives and bulletins, system safety & risk assessment, business and finance, software, design interface/maintenance planning, configuration management, initial operational capability supportability review (IOCSR), cost analysis, total ownership cost, earned value management, airworthiness, and test and evaluation.	
OBJECTIVE:	To provide basic skills and knowledge to enhance the performance of personnel newly assigned as assistant program manager for systems engineering (Class Desk) or assistant program manager for logistics.	
AUDIENCE:	Personnel newly assigned as class desks or APML's and supporting government and contract personnel. Other employees are welcome subject to space availability.	
PREREQUISITE:	None	
LENGTH:	4 Days	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	None	
POC:	(301) 757-4122	

COURSE TITLE:	CREWSTATION ANALYSIS	
VENDOR:	United States Naval Test Pilot School	
LOCATION:	USN Test Pilot School, B2168 (PAX River, MD)	
	DATE: 8-12 DEC 03 17-20 Feb 04	NOMINATION DEADLINE: 8 NOV 03
TIME:	0800-1600.	
DESCRIPTION:	<p>Topics include:</p> <ul style="list-style-type: none"> ❖ Introductory Concepts (Systems Engineering) ❖ Anthropometry ❖ Static Analysis Techniques ❖ Sensory Perception ❖ Information Processing ❖ Applications to Displays and Controls ❖ Mental Workload Measures ❖ Psychomotor Work ❖ Task Analysis ❖ Decision-making ❖ Operator Interfaces ❖ Human Performance in Extreme Environments ❖ Dynamic Crewstation Analysis Techniques <p>Two 3-hour practical exercises on USNTPS simulators/aircraft are incorporated to reinforce the classroom lectures.</p>	
OBJECTIVE:	At the completion of this course, participants will have a fundamental understanding of basic human factors considerations in order to enable safe and effective planning, direction, and execution of assessments of aircraft crewstations.	
AUDIENCE:	Engineers and scientists involved in the test and evaluation of aircraft crewstations.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$1000	
METHOD OF PAYMENT:	Internal Activity Allocation	
For more information, please contact the Short Course Department at the United States Naval Test Pilot School at (301) 757-5044 or -5045.		
POC:	(301) 757-4122	

COURSE TITLE:	ELECTROMAGNETIC INTERFERENCE AND COMPATABILITY (EMI/EMC)	
VENDOR:	The George Washington University Continuing Engineering Education Program 2029 K Street, N.W., Suite 600 Washington, D.C. 20052	
LOCATION:	Patuxent River, Maryland	
COURSE CODE:	DATE: 12-16 Apr 2004	NOMINATION DEADLINE:
TIME:	0800-1530	
DESCRIPTION:	This course presents a comprehensive review and the practical aspects of electromagnetic interference and electro-magnetic compatibility (EMI/EMC) testing under MIL-STDS 461, 462, and 464, their application to the design, development, test, and procurement of military electronic systems. Techniques for suppressing EMI including design and retrofits are discussed. Although some mathematical formulas are used, the course emphasizes the practical use of military standards. Basic principles are briefly reviewed at the beginning of the course.	
AUDIENCE:	Electrical engineers and technicians.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$1395 per person	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	FLIGHT TEST - INTRO	
VENDOR:	United States Naval Test Pilot School	
LOCATION:	USN Test Pilot School, B 2168 (PAX River, MD)	
COURSE CODE:	DATE: 16-27 AUG 04	NOMINATION DEADLINE: 16 AUG 04
TIME:	0800-1530	
DESCRIPTION:	<p>Topics to be covered during the course include:</p> <ul style="list-style-type: none"> ❖ The Acquisition Process ❖ The Test Planning Process ❖ Report Writing <ul style="list-style-type: none"> The Research and Evaluation Paragraph Types of Reports ❖ The DT-OT Transition Report ❖ Flight Clearances ❖ Data Collection and Instrumentation ❖ Airborne Systems Basics and Flight Test Techniques ❖ Introduction to Fixed and Rotary-wing Testing ❖ Test Planning an Inertial Navigation System Evaluation <ul style="list-style-type: none"> Flight Briefing Test Design Data Collection Safety and Technical Review ❖ Flying the Test ❖ Analysis of Results ❖ Data Presentation ❖ Naval Air Systems Command Ranges and Facilities <p>This course includes a navigation evaluation flight in the USNTPS Airborne Systems Test and Research Support aircraft. Medical screening will be conducted during the first week of the course. For individuals with questions concerning this process, please contact the USNTPS Short Course Staff at the number below.</p>	
AUDIENCE:	The intended audience for this course is personnel involved in rotary-wing, fixed-wing or systems flight-testing. This course is intended to provide the working level engineer with the information necessary to plan, brief, conduct, debrief and analyze flight test results.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$2000 Includes course tuition and the ASTARS navigation evaluation flight.	
METHOD OF PAYMENT:	Internal Activity Allocation	
For more information, please contact the Short Course Department at the United States Naval Test Pilot School. (301)757-5044		
POC:	(301) 757-4122	

COURSE TITLE:	GPS-BASED TARGETING SYSTEMS	
VENDOR:	Whitney, Bradley & Brown, Inc. 1604 Spring Hill Road, Suite 200 Vienna, VA 22182	
LOCATION:	Employee Development Center, Building #2189	
	DATES: 04 MAR 04 30 AUG 04	NOMINATION DEADLINES: 04 FEB 04 30 JUL 04
TIME:	0800-1200	
DESCRIPTION:	<p>This seminar discusses and examines current and future scenarios, threats, missions and requirements for GPS-based targeting. Attendees will be able to assess the importance of these new systems and technologies to current and future warfighting doctrines. Critical issues addressed will include:</p> <ul style="list-style-type: none"> • What are the missions and requirements for GPS-based technology? • What challenges/limitations exist in GPS technology? How will it be improved? • What are the targeting planning considerations for GPS-guided weapons? • Likely GPS-based targeting advancements in the next 1, 5, and 10 years. 	
OBJECTIVE:	Participants will receive valuable insight into future trends, technology challenges, and performance trade-offs between competing guidance systems.	
AUDIENCE:	This course is intended for anyone with a desire to learn GPS-based targeting systems.	
NOMINATIONS:	<p>NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.</p>	
COST:	\$400	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	Helicopter Stability & Control	
VENDOR:	University of Tennessee Space Institute (UTSI)	
LOCATION:	SMHEC	
	DATE: 1-12 MAR 04	NOMINATION DEADLINE: 9 FEB 04
TIME:	0800-1530	
DESCRIPTION:	The flying qualities course is designed for engineers and scientists involved in the test and evaluation of rotary wing aircraft. The course includes rotor theory, flight controls, mechanical characteristics, longitudinal statics, non-maneuvering and maneuvering flight characteristics, longitudinal dynamics, longitudinal dynamic modes, longitudinal transfer functions, lateral-directional statics, lateral-directional dynamics, lateral-directional dynamic modes, lateral-directional transfer functions, vibration analysis, aero-servo elastics, vortex ring state, and a review of the ADS-33 Handling Qualities specification. The students will have two flights in the OH-58 to execute flight test techniques and gather data.	
AUDIENCE:	Engineers and Scientists	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
LENGTH:	2 Week TPS Short Course	
COST:	\$3,499.00	
METHOD OF PAYMENT:	Vendor does accept credit cards.	
For more info.	Contact the Short Course Dept at the USNTPS (301) 757-5044	
POC:	(301) 757-4122	

COURSE TITLE:	INFRARED IMAGING SYSTEMS: (AN INTRODUCTION)	
VENDOR:	The George Washington University Continuing Engineering Education Program 2029 K Street, N.W., Suite 600 Washington, D.C. 20052	
LOCATION:	Patuxent River, Maryland	
COURSE CODE:	DATE: 17-18 Feb 2004	NOMINATION DEADLINE:
TIME:	0800-1530	
DESCRIPTION:	This course presents background information on light characteristics, two-dimensional mathematics, linear shift invariant systems and diffraction. Infrared systems components such as radiation sources, atmospheric, optics, detectors, electronics, and human vision are reviewed. System-level performance, including system resolution and sensitivity parameters, is discussed. Finally, design, with emphasis on sensitivity, resolution, coverage, and throughput, is introduced. Examples of progress in infrared imagers, from older to state-of-the-art systems, are presented.	
AUDIENCE:	Engineers and scientists.	
NOMINATIONS:	Nominations must be submitted through use of the Initial Training Request Form, NDW-NAWCAD 12410/28 (Rev. 05/01). The completed form, with appropriate signatures, is given to the competency training contact. The training contact forwards the request to the Workforce Relations and Development Division via the Training Information Processing System (TIPS). NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	TBD	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	INTELLECTUAL PROPERTY AND TECHNOLOGY TRANSFER	
VENDOR:	Office of Counsel & Office of Research and Tech. Applications Naval Air Warfare Center Aircraft Division Patuxent River, MD 20670	
LOCATION:	Patuxent River, Maryland	
	DATE: 30 OCT 03 08 DEC 03 25 FEB 04 12 APR 04 09 JUN 04 10 AUG 04	NOMINATION DEADLINE: 20 SEP 03 08 NOV 03 25 JAN 04 12 MAR 04 09 MAY 04 09 JUL 04
TIME:	0800-1530	
DESCRIPTION:	<p>Students will develop an understanding of technology transfer, the process in which technology or knowledge developed in one place or for one purpose is applied and exploited in another place for some other purpose. Within the DOD, this involves transfers occurring between federal laboratories and any nonfederal organization, including private industry, academia, and state and local governments, but can occur between federal agencies. A major long-term goal of the federal government is sustained economic growth; one way to achieve this is development and commercialization of new technologies. Federal labs try to foster and maintain advanced technical capabilities by partnering with private industry and academia.</p> <p>Students will learn about the specific mechanisms used for technology transfer, the legal issues associated with each, how an employee's innovation may be an invention that could be patented, and how and why intellectual property must be protected. They will also become acquainted with the NAWCAD Patuxent River Office of Research and Technology Applications (ORTA) and its role in implementing technology transfer at the command, and with the Office of Counsel and its responsibilities in protecting intellectual property.</p>	
OBJECTIVE:	<p>At the completion of the course, participants will understand:</p> <ul style="list-style-type: none"> ❖ Inventions and patents. ❖ Methods to accomplish technology transfer. ❖ Patent Licensing. ❖ Cooperative research and development agreement. ❖ Commercial service agreement. ❖ Memorandum of agreement. ❖ Command processes and offices involved in technology transfer. ❖ Major technology transfer legislation. 	
AUDIENCE:	RDT&E scientists and engineers	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel are NOT eligible to attend.	
COST:	None	
POC:	(301) 757-4122	

COURSE TITLE:	LINEAR ALGEBRA WITH ENGINEERING APPLICATIONS	
VENDOR:	Alan D. Stuart P.O. Box 393 Lemont, PA 16851	
LOCATION:	Employee Development Center, Building #2189	
	DATES: 15-16 MAR 04	NOMINATION DEADLINES: 15 FEB 04
TIME:	0800-1600	
DESCRIPTION:	This course provides a basic introductory overview of linear algebra and matrix analysis techniques used in engineering. Basic concepts are developed and explored through examples and geometrical interpretations. Topics include: a review of basic vector and matrix algebra; systems of linear equations; linear transforms; eigen-value and eigen-vectors problems; inverse matrix and determinants. Engineering applications include: engineering mechanics and vibrations; electrical circuits; state variables and control systems; signal processing; linear programming and numerical analysis; system reliability.	
OBJECTIVE:	Emphasis is placed on how to use math as a tool to set up and interpret engineering problems. Students review problems and discuss their results in class.	
AUDIENCE:	This course is intended for those taking technical classes, pursuing graduate or undergraduate studies, or desiring a review or introductory overview.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$500	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	MIL-STD-1553-MULTIPLEX BUS	
VENDOR:	Test Systems, Inc. 217 W Palmaire Phoenix, AZ 85021	
LOCATION:	Employee Development Center, Building #2189	
	DATE: 27-29 JAN 04 17-19 AUG 04	NOMINATION DEADLINE: 27 DEC 03 17 JUL 04
TIME:	0800-1600	
DESCRIPTION:	The MIL-STD-1553 data bus is presently used in many advanced military programs and is also used to update systems in older programs. The applications are expanding rapidly requiring more trained engineers to deal with the technology. This 3-day seminar presents a thorough discussion of MIL-STD-1553 theory, application and testing. Two lab sessions illustrate the material being taught by providing students with "hands on" experience in identifying 1553 communication and trouble shooting remote terminal problems. Both experienced 1553 personnel and novices will find the seminar profitable.	
OBJECTIVE:	<p>By the end of the course, each participant will be able to:</p> <ul style="list-style-type: none"> ❖ State the definition of basic 1553 terms, data bus operation, date encoding, word sync, word forms, message formats, intermessage gap and response time. ❖ Understand MIL-STD-1553 Protocol including: Command. ❖ Word, Mode Codes, Mode Command Formats, Data ❖ Word Status Word, and Message Error Bit. ❖ Describe MIL-STD-1553 Hardware Characteristics. ❖ Describe System and Software Designs associated with ❖ MIL-STD-1553 data buses. ❖ Understand the philosophy of testing and phases of testing. ❖ State test requirements and test equipment requirements. 	
AUDIENCE:	Engineers, Technicians, System Designers and Managers who may be required to specify, design or test of systems employing the standard. Those attending should have a general knowledge of how digital busses work.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractors should contact the vendor directly to obtain a seat.	
COST:	\$ 850 per person	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	Rotary Wing Performance	
VENDOR:	United States Naval Test Pilot School	
LOCATION:	USN Test Pilot School B2168 (PAX River)	
	DATE: 23-27 FEB 04	NOMINATION DEADLINE: 9 FEB 04
TIME:	0800-1530	
DESCRIPTION:	The performance course is designed for engineers and scientists involved in the test and evaluation of rotary wing aircraft. The course includes a review of pitot-static system calibration and develops a generalized performance model for engine assessment, hover, vertical climb, level flight, and climb and descent performance. Participants (1) will learn test techniques to collect data with engineering variables determined by the model and (2) will use a USNTPS data reduction program to analyze data and unreference the data to some pre-specified mission configuration and environment to determine whether the aircraft performance met design specifications and whether it is satisfactory for a given mission.	
AUDIENCE:	Engineers and Scientists	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
LENGTH:	5 Days	
COST:	\$500.00	
METHOD OF PAYMENT:	Internal Activity Allocation	
For more info.	Contact the Short Course Dept at the USNTPS (301) 757-5044	
POC:	(301) 757-4122	

COURSE TITLE:	SPREADSHEET AIDED ENGINEERING	
VENDOR:	SpreadsheetWorld, Inc. P.O. Box 261158 Encino, CA 91426-1158	
LOCATION:	Employee Development Center, Building #2189	
COURSE CODES:	DATES: TBD	NOMINATION DEADLINES:
TIME:	0800-1600	
DESCRIPTION:	Excel Spreadsheets are used to establish a platform for performing engineering system design, analysis, optimization and uncertainty analysis. Participants are led through a structured approach to systems design, with the basic principle of object-oriented programming introduced along the way. Techniques are introduced for spreadsheet architecture and communication for large-scale systems engineering.	
OBJECTIVE:	At the completion of this course, students should have an increased understanding of their systems and processes, an increased integration of engineering disciplines, and better intuition of performance dependence on controlling design parameters.	
AUDIENCE:	Engineers of all disciplines who have a computer background that includes basic keyboard and Excel skills.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	TBD	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	SYSTEMS ENGINEERING, FUNDAMENTALS	
VENDOR:	Johns Hopkins University Dorsey Center 6810 Deerpath Road, Suite 200 Elkridge, MD 21075	
LOCATION:	Employee Development Center, Building #2189	
	DATES: 29 MAR - 02 APR 04 26-30 JUL 04	NOMINATION DEADLINES: 27 FEB 04 26 JUN 04
TIME:	0800-1600	
DESCRIPTION:	This course covers the application of systems engineering principles and methods to the management of engineering efforts in technical development programs, as well as the variation in responsibilities and techniques as a project moves from initial mission statement through engineering design to deployment. Topics include requirements analysis, interface definition and control, system trade and sensitivity studies, concept definition and assessment, system design and integration, system test and evaluation, and software system fundamentals from a systems engineering perspective. Special topics include modeling and simulations, quality teams, and engineering processes, which are discussed from a system viewpoint. Students are introduced to a knowledge base for the functional allocation and analysis of complex systems. Students address typical systems engineering problems that highlight important issues and methods of technical problem resolution.	
OBJECTIVE:	To approach and solve complex technical problems and acquisition systems by learning to "think like a systems engineer" -- develop a systems engineering viewpoint.	
AUDIENCE:	Students are expected to hold an engineering, science, or mathematics degree and have a minimum of two years professional experience. Significant technical experience can serve as a substitute for a non-technical degree.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$1000	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	Systems Engineering Technical Review (SETR) Process	
VENDOR:	NAVAIR 4.1G Naval Air Systems Command Patuxent River, MD 20670	
LOCATION:	Employee Development Center, B2189	
	DATE: 09-10 JUN 04 10-11 AUG 04 CANCELLED 15-16 SEP 04	NOMINATION DEADLINE: 09 MAY 04 09 JUL 04 16 AUG 04
TIME:	0800-1300	
DESCRIPTION:	Using the SETR process in accordance with NAVAIR INST 4355.19B	
OBJECTIVE:	Students will learn how to implement the Systems Engineering Technical Review Process, and use the execution modules and risk assessment checklists that it contains.	
AUDIENCE:	The Systems Engineering Community	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator.	
LENGTH:	2 days (5 hours per day)	
COST:	None	
POC:	(301) 757-4122	

COURSE TITLE:	UNDERWATER ACOUSTICS I AND PASSIVE SONAR	
VENDOR:	Alan D. Stuart P.O. Box 393 Lemont, PA 16851	
LOCATION:	Employee Development Center, Building #2189	
	DATES: 08-09 DEC 03 16-17 JUN 04	NOMINATION DEADLINES: 08 NOV 03 16 MAY 03
TIME:	0800-1600	
DESCRIPTION:	This course provides an introductory overview of passive sonar systems and their relationship to the underwater acoustics environment in which they function. Topics include: Historical background and introduction to US Naval sonar systems and platforms including sonobouys; review of decibel (dB) scales and references used in underwater acoustics; sound propagation in sea water including sound velocity profiles; cavitation considerations including threshold and limits; sound spreading and absorption losses; ambient, self and radiated noise characteristics; basics of sonar transducers and arrays including beam forming, steering, and bearing angle; passive sonar equation and signal processing including detection threshold concepts, figure of merit and range considerations; topics of interest to course participants. Participants receive a copy of the instructor's course notes.	
OBJECTIVE:	Emphasis is placed on illustrating phenomena and principles through demonstrations and examples from common experience. Topics are presented with a minimum of mathematics.	
AUDIENCE:	This course is intended for anyone with a desire to learn about sonar acoustics, or anyone in need of a refresher.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$500	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	UNDERWATER ACOUSTICS II AND ACTIVE SONAR	
VENDOR:	Alan D. Stuart P.O. Box 393 Lemont, PA 16851	
LOCATION:	Employee Development Center, Building #2189	
	DATES: 17-18 DEC 03 18-19 AUG 04	NOMINATION DEADLINES: 17 NOV 03 18 JUL 04
TIME:	0800-1600	
DESCRIPTION:	This course provides an introductory overview of active sonar systems and their relationship to the underwater acoustics environment in which they function. Topics include: A more detailed description of underwater sound propagation such as ray acoustics and convergence zones; sound channels: surface ducts, SOFAR, RAP; sea surface effects: scattering, Lloyd mirror; bottom effects: scattering, lateral waves; shallow water and littoral ASW considerations; active sonar equation and signal processing including range-Doppler representation; active sonar reverberation: volume, surface, and bottom; target characteristics and constructions including target strength measurements; mono-static and multi-static target scattering including geometric and hull structure effects; echo formation and anechoic coatings; topics of interest to course participants. Participants receive a copy of the instructor's course notes.	
OBJECTIVE:	Emphasis is placed on illustrating phenomena and principles through demonstrations and examples from common experience. Topics are presented with a minimum of mathematics.	
AUDIENCE:	This course is intended for anyone with a desire to learn about sonar acoustics, or anyone in need of a refresher.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$500	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	UNDERWATER ACOUSTICS III AND SONOBUOY SYSTEMS	
VENDOR:	Alan D. Stuart P.O. Box 393 Lemont, PA 16851	
LOCATION:	Employee Development Center, Building #2185	
	DATES: 06-07 JAN 04 / 24-25 AUG 04	NOMINATION DEADLINES: 06 DEC 03 / 24 JUL 04
TIME:	0800-1600	
DESCRIPTION:	This course provides a more in-depth overview of sonobuoy systems and their relationship to the underwater acoustics environment in which they function. Topics include: A more detailed description of underwater sound propagation in shallow water or littoral environments. Design and construction considerations of sonobuoys with related deployment and tactical implications. Sonobuoys discussed include bathythermograph, ambient noise measurement, LOFAR, DICASS, DIFAR, VLAD as well as active and other advanced concept systems. The course will feature special presentations from operator and system performance specialists, and some representative in-tank experiments. Participants receive a copy of the instructor's course notes.	
OBJECTIVE:	Emphasis is placed on illustrating phenomena and principles through demonstrations and examples from common experience. Topics are presented with a minimum of mathematics.	
AUDIENCE:	This course is intended for anyone with a desire to learn about sonar acoustics, or anyone in need of a refresher.	
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$500	
METHOD OF PAYMENT:	Vendor DOES accept credit cards.	
POC:	(301) 757-4122	

COURSE TITLE:	UAV FLIGHT TEST INTRO	
VENDOR:	United States Naval Test Pilot School	
LOCATION:	United States Naval Test Pilot School B#2168	
	DATES: 27 SEP - 08 OCT	NOMINATION DEADLINES: 26 AUG 03
TIME:	0800-1600	
DESCRIPTION:		
OBJECTIVE:		
AUDIENCE:		
NOMINATIONS:	NAVAIR TEAM employees should request training via Employee Self Service at https://ess.navair1.navy.mil NOTE: Contractor personnel may attend on a space-available basis. Nominations must be made by letter addressed to the Program Coordinator. Once the nominee receives a confirmation of acceptance, a check made payable to the vendor must be sent directly to the Program Coordinator at the Employee Development Center prior to the first day of class.	
COST:	\$1800	
METHOD OF PAYMENT:	Internal Activity Allocation	
POC:	(301) 757-4122	