Workshop Instructor

Dr. Wiley Larson is managing editor of the Space Technology Series that is sponsored by the United States Air Force Academy, DOD space-related organizations, NASA and the Federal Aviation Administration. He is a professor in the School of Systems and Enterprises, Stevens Institute of Technology.

Dr. Larson is editor and co-author of over 20 books on space related topics including space mission design, spacecraft design and operations, launch system design, mission operations, space systems engineering and project management.

This particular workshop is based on two books--Understanding Space and Aerospace Science: The Exploration of Space, 2nd Ed, by Jerry Sellers, Doug Kirkpatrick and Wiley Larson, etal. Support materials were created by a national team of educators dedicated to enhancing the classroom experience for teachers and students.

Dr. Larson’s dream is to help teachers motivate thousands of students to study science, technology, engineering and math by using space-related topics as a centerpiece. He and his team have created a complete semester–long set of course materials, professional videos, lesson plans, activities, automatically–graded quizzes and numerous support materials to ease the burden of preparation for teachers.

The Exploration of Space Workshop

Workshop Objectives
This workshop provides participating teachers with an overview of a complete semester–long course that is tailored to the needs of 8th- and 9th-grade students. This hands–on, experiential workshop is intended to provide teachers with the capability to teach the space–related materials to augment existing courses or entirely throughout a semester or year.

Who Should Attend
Any teacher that desires to motivate their students towards science, technology, engineering and math by using space–related materials will find this workshop highly beneficial.

Teachers that apply the workshop materials to teaching a semester–long course with 10 or more students and complete the evaluation forms will receive an honorarium and will enjoy use of the materials for as long as they teach the course.

Course Materials
Each teacher will be provided with access to a complete text, "Aerospace Science: The Exploration of Space," teacher’s manual, and a learning management system that provides tailored, up–to–date urls, video clips, activities, automatically–scored quizzes and course evaluations for each chapter of the text.
**Workshop Agenda**

**Day 1**

- **July 10, 2013**
- 8-8:30 am: Introductions
- 8:30-9:20: Overview of the Course
- 9:20-10:15: *Demonstration of Resources*
- 10:15-10:30: BREAK
- 10:30-11:00: Form Teaching Teams
- 11:00-12:00: Teaching Demonstration
- 12:00-1:00: LUNCH
- 1:00-2:45: Teams Prepare Lessons
- 2:45-3:00: BREAK
- 3:00-5:00: Teams Prepare Lessons

**Day 2**

- **July 11, 2013**
- 8:00-8:30: Select Lessons for Presentation
- 8:30-9:15: Team Presentation I
- 9:15-10:00: Team Presentation II
- 10:00-10:15: BREAK
- 10:15-11:00: Team Presentation III
- 11:00-11:45: Lessons Learned/Tips
- 11:45-12:30: Course Delivery Strategies and Research
- 12:30-1:00: Evaluations
- 1:00-4:30: Optional KSC Tour

*A Participants will be provided with a username and password to access the following on-line resources: text, presentation videos, teacher’s PowerPoint slides, activities, urls per topic, videos and simulations, checkpoints (quizzes), evaluations and grade book.

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**The Exploration of Space**

**Topics Explored**

| 1 | Space in Our Lives |
| 2 | Exploring Space |
| 3 | The Space Environment |
| 4 | Understanding Orbits |
| 5 | Maneuvering in Space |
| 6 | Interplanetary Travel |
| 7 | Getting Into Space |
| 8 | Returning From Space |
| 9 | Space Systems Engineering |
| 10 | Space Vehicle Attitude Control |
| 11 | Spacecraft Subsystems |
| 12 | Rockets and Launch Vehicles |
| 13 | Space Operations |
| 14 | Using Space |
| 15 | Crewed Space Exploration |

**Background**

This activity is an integral part of the Space Mission Analysis and Design (SMAD) Program’s research effort described in the United States Air Force Academy Grant. Questions regarding this activity should be directed to Dr. Wiley Larson, wileyjarson@mac.com, 1-719-582-0111.

Teachers successfully completing this workshop will be given the opportunity to teach The Exploration of Space Program in their schools. For teachers that complete the workshop, teach the program in their schools and complete the evaluation form there is a $1000 grant payable on completion.

**Additional Important Information**

**Dress** - Dress is business casual. Please consider daily weather changes and bring a jacket, sweater, umbrella if needed. Lunch - Lunch and snacks are available for purchase at any of the KSC Visitor Complex restaurants. Bringing a personal laptop computer is recommended and encouraged.

Children are not permitted to attend the workshop and childcare will NOT be provided. If going on the optional tour, participants must wear long pants and closed-toed shoes. Sunscreen is recommended. Once on tour, the bus cannot return you to the Visitor Complex until the tour is complete.