
Principles of Project/Systems Engineering

Course No. 421

FOR WHOM INTENDED This course is designed for all levels of engineers and managers working on/with technology and technical related projects/programs; military and civilian engineers of all disciplines, project engineers, program managers, and scientists.

BRIEF COURSE DESCRIPTION This course provides an introduction to project engineering principles, processes and practices. Quality assurance/control and system engineering techniques and their application to project engineering will be covered.

Because of the highly interactive format, a semester long course can be presented and should be understood in this time frame. The instructor welcomes questions and comments during lectures. Private discussions can be arranged between instructor and participants after class. There will be a final review to evaluate the students' understanding of the course material presented.

CERTIFICATE PROGRAMS: This course may be used as an elective for any TTI [specialist certificate program](#).

PREREQUISITES: There are no specific prerequisites. This course is aimed toward individuals actively involved in related technical fields. This course is designed to serve the varied needs of technicians and engineers. The Instructor maintains a good balance between practical training and theory, wherever possible.

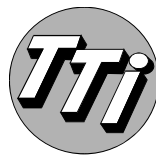
TEXT Each participant will receive a course workbook, which contains most of the viewgraphs used during the presentation.

COURSE HOURS, CERTIFICATE AND CEUs
Open courses meet seven hours per day. Upcoming presentation dates can be found on our current open course schedule. Class hours/ days for on-site courses can vary from 14–35 hours over 2–5 days as requested by our clients. Upon successful course completion, each participant receives a certificate of completion and one Continuing Education Unit (CEU) for every ten class hours.

For [schedules](#), [general information](#) and a [registration form](#), see TTI's web site.

Course Outline No. 421

- Introduction
- History of Quality Initiatives
 - Quality • Total Quality Management (TQM)
 - Maintenance and Material Management (MMM)
 - Standard Deviation
 - Six Sigma
- Current Initiatives in Quality
 - SOO: Statement of Objective
 - SOW: Statement of Work
 - Exercise 1
- Introduction to System Engineering (SE) Basics
 - Definitions
- Introduction to SE Process
 - Exercise 2
- Requirements Analysis
- Functional Analysis and Allocation
- Design Synthesis
- Verification
- Sound Engineering Outputs
- System Analysis
 - Work Breakdown Structure (WBS)
 - Configuration Management
- Technical Reviews: System Requirements Review (SRR)
 - System Design Review (SDR) • Preliminary Design Review (PDR) • Critical Design Review (CDR) • Test Readiness Review (TRR) • Production Readiness Review (PRR)
 - Functional Configuration Audit (FCA) • System Verification Review (SVR) • Physical Configuration Audit (PCA)
 - Department of Defense (DoD)
- Trade Off Analysis
- Risk Management
 - Exercise 3
- Lean Six Sigma
 - Exercise 4
- Course Content Review
- Summary, Final Review
- Award of Certificates for Successful Completion



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