

# Applied Engineering— Specialist Diploma Programs

The responsibilities of the Environmental Engineering Specialist are defined in MIL-STD-810; however universities do not provide programs directed at this activity. TTI has been teaching in the environmental engineering field for forty years. Thus, TTI was ideally prepared to develop the Applied Engineering Specialist Diploma Program to assist in the development of knowledge and understanding required to be able to act as an Environmental Engineering Specialist.

The program provides individuals already working in government or industry the opportunity to enhance their understanding of their everyday work by following a structured program over several years. TTI's courses are developed and presented by qualified experienced engineers who continue to work professionally in their chosen engineering fields.

The successful completion of a TTI Specialist Diploma Program demonstrates that the individual has pursued a continuing educational program while obtaining experience and has kept up to date in the latest applicable technologies.

**Technology Training Inc.'s** Level II Specialist Diploma Programs are offered to personnel actively involved in various aspects of engineering. Through these programs, individuals can acquire specific application-oriented advanced education with particular emphasis on current technologies and methodologies. Completion of a TTI Level II Diploma program will add breadth and depth to the participants' knowledge and skills and will assist them in preparing for increased responsibility in their careers.

The requirements for a TTI Level II Specialist Diploma are:

- Practical Experience,
- [Specific application-oriented continuing education courses,](#)
- Thesis on a practical activity.

**Practical Experience** Each participant shall be actively involved in the selected engineering field and have "hands on" practical experience, a description of which shall be submitted to TTI. A minimum of forty-eight (48) months related experience is required prior to award of the TTI Diploma.

## **Application-Oriented Continuing Education Courses**

Each specialist program consists of seven courses. During the period when the participant is obtaining the required practical experience in the "real world," the participant also undertakes an educational program consisting of approximately 130 to 140 hours of classroom instruction. This training program has been designed so that the complete seven (7) courses comprise a balanced program covering the major areas of interest to the participant.

In most cases, this classroom instructional phase is spread over three or more years. This is generally not the only education the participant obtains during this period. Many participants also pursue formal college or university degree programs, attend engineering society seminars or pursue other self improvement methods such as keeping current with the latest advances in the technology by reading technical society and trade publications.

**Thesis** After successfully completing the basic Specialist Diploma requirements, the participant prepares a Thesis on a practical activity, directly related to the subject area studied and personally accomplished by the participant. This Thesis is submitted to TTI for review and evaluation. During the period leading up to the completion of the experience and training phases of the program, the participant will select the appropriate project and begin to keep relevant notes, results, photographs etc. as basic material for the Thesis. Please note that participants should not select for their Thesis either commercial or defense related activities which may be considered sensitive or secret.

The format of the Thesis is prescribed and includes:

Objective of Activity, Description of Activity, Date of Activity, Location, Equipment used, Standards, Specifications, Procedures, Results and Conclusions.

Individuals wishing to earn two or more specialist Diplomas will be required to complete a separate thesis for each Diploma. Candidates for multiple Diplomas are urged to contact TTI to discuss course requirements.

**Level III** For individuals who want additional training, TTI has developed the Senior Environmental Specialist Diploma program. This program prepares the participant for more senior and responsible technical positions. The requirements are as follows:

- Successful completion and award of a Specialist Diploma
- Successful completion of five (5) additional courses that have not been applied in the level II Diploma.
- Both of the following:
  - a. A critique of the thesis previously submitted.
  - b. A thesis on realistic and practical ideals for improvement in technical management techniques.

The Senior Specialist Critique should evaluate in some detail the procedures, requirements, results and conclusion of the previous work, based on additional knowledge and experience obtained by further study and participation in TTI's Diploma program.

**General** Individuals may apply for entrance to a Diploma program at any time via a letter of application addressed to TTI. When all the requirements have been met, participants may apply to TTI for evaluation of their individual program and issuance of the Diploma.

TTI will review the applicant's experience, course work and thesis prior to the award of the Diploma. TTI does not endorse the actual capabilities of any individual awarded a TTI Diploma. TTI certifies only that, to the best of its knowledge, the recipient has completed the conditions specified in the program.

Participating in and successfully completing a TTI Diploma program indicates that the individual has been actively involved in a structured, continuing education program over an extended period of time. These programs are designed to help individuals to maintain and improve their skills, to stay abreast of today's technology and to prepare for advancement in their careers.

# Technology Training Inc. — Diploma Program Courses

## Environmental Engineering Specialist Certificate (EES)

116 Fundamentals of Vibration for Test Applications  
130 Metrology Concepts  
163 Instrumentation for Test and Measurement  
230 Climatic Test Techniques  
425 Environmental Testing Procedures  
450 Environmental Test Specifications  
451 Understanding MIL-STD-810G

## Dynamic Test Specialist Diploma (DTS)

104 Electronics for Non Electronic Engineers  
116 Fundamentals of Vibration for Test Applications  
142 Mechanical Shock Techniques  
163 Instrumentation for Test and Measurement  
194 Vibration and Shock Test Control Techniques  
196 Digital Data Acquisition  
450 Environmental Test Specifications

## Climatic Test Specialist Diploma (CTS)

130 Metrology Concepts  
163 Instrumentation for Test and Measurement  
230 Climatic Test Techniques  
240 Accelerated Testing: ESS, HALT and HASS  
320 Corrosion Control Techniques  
425 Environmental Testing Procedures  
450 Environmental Test Specifications

## Electronic Design Specialist Diploma (EDS)

105 Understanding Digital Electronics  
108 Mechanical and Structural Theory  
130 Metrology Concepts  
161 Grounding and Shielding for EMI, EMC and ESD  
162 Test Procedures for EMI/EMC/ESD  
166 Applied Measurements  
471 Cooling Methods for Electronics Design

## Electronic Telecommunications Specialist Diploma (ETS)

104 Electronics for Non Electronic Engineers  
105 Understanding Digital Electronics  
162 Test Procedures for EMI/EMC/ESD  
171 Telemetry Systems  
172 Fiber Optic Systems  
173 Global Positioning Systems (GPS)  
199 DSP: Digital Signal Processing

## Instrumentation Test Specialist Diploma (ITS)

104 Electronics for Non Electronic Engineers  
130 Metrology Concepts  
136 Electrical Instrumentation Calibration Procedures  
161 Grounding and Shielding for EMI, EMC and ESD  
162 Test Procedures for EMI/EMC/ESD  
164 Instrumentation for Electrical Test and Measurement  
199 DSP: Digital Signal Processing

## Mechanical Design Specialist Diploma (MDS)

104 Electronics for Non Electronic Engineers  
117 Fundamentals of Vibration for Design Applications  
166 Applied Measurements  
310 Mechanical Design for Product Reliability  
312 Mechanical Stress Analysis  
320 Corrosion Control Techniques  
535 Geometric Dimensioning & Tolerancing

## Metrology/Calibration Specialist Diploma (MCS)

131 Dimensional Calibration Procedures  
132 Measurement Uncertainty  
133 Thermodynamic Calibration Procedures  
134 Calibration Laboratory Procedures  
135 Calibration of Electrical Power Instruments  
139 Understanding ISO 17025  
166 Applied Measurements

## Required for all Level II Diplomas:

110 Thesis Presentation and Review

## TTi Diploma Programs Under Development

**Electrical Power Specialist (EPS)**

**Facility Operation Specialist (FOS)**

**Facility Safety Specialist (FSS)**

**Industrial Safety Specialist (ISS)**

**Nuclear Plant Design Specialist (NPD)**

**PCB Design Specialist (PDS)**

**Power Plant Design Specialist (PPD)**

**Piping, Valves & Pumps Specialist (PV&P)**

## Level II Optional Courses:

Optional Courses that are not included in the required courses may be valuable for your diploma.

For a complete list of available courses, visit <http://www.ttiedu.com/courselist.html>

For a schedule of upcoming TTi open courses, visit <http://www.ttiedu.com/schedule.html>

## Level III

## Master Environmental Specialist Diploma (MES)

Prior completion of a TTi specialist Diploma and five (5) courses that have not been applied in the Level II Diploma. Plus:

- A critique of the thesis previously submitted
- A thesis on realistic and practical ideas for improvement in technical management techniques.

