



APPLIED ENGINEERING FUNDAMENTALS COURSE UPDATE

Presented by Douglas Eddy
FTCP Virtual Meeting
August 2020


Status since the Feb FTCP F2F Meeting

| | Required Technical Knowledge Areas | | Responsible for slides |
|----------------------|---|----|------------------------|
| FR1 | Pump components and characteristics | M1 | Khatri |
| FR2 | Valve construction, operation, and application | M1 | Henderson |
| FR3 | Compressed air systems | M1 | Todd |
| FR4 | Heating, ventilation, and air conditioning systems | M1 | Eddy |
| FR5 | Electrical systems | E | Eddy |
| FR6 | Process instrumentation | E | Todd |
| FR7 | Control systems | E | Todd |
| FR8 | Corrosion and water treatment | M2 | Henderson |
| FR9 | Heat transfer and fluid flow | M2 | Khatri |
| FR10 | Engineering prints and drawings | M2 | Eddy |
| FR11 | Electrical prints, diagrams and schematics | E | Eddy |
| FR12 | Engineering fabrication, construction, and architectural drawings | M2 | Eddy |
| | | | |
| | Site-Specific Technical Knowledge Areas | | |
| 13 | Steam systems | M1 | Todd |
| 14 | Pneumatic and hydraulic systems | M1 | Eddy |
| 15 | Heat exchangers | M1 | Khatri |
| 16 | Lasers | E | Henderson |
| 17 | Chemistry theory | M2 | Henderson |
| 18 | Thermodynamics | M2 | Khatri |
| 19 | Material Science | M2 | Todd |
| | Diesel | M1 | Eddy |

Status since the Feb FTCP F2F Meeting

- The development team is in the process of finalizing the Session One presentations.
 - 15 lessons have been developed
 - NTC set up a collaboration link on the NTC Site
 - Knowledge checks have been developed for 13 of the lessons
 - Larry Perkins, Director EM-93 Operations Management Division, has volunteered to conduct a peer review of the presentations and has started his review of the first three lessons which we intend to offer as a webex.

Applied Engineering Fundamentals Session One Lessons



**DOE Applied Engineering Fundamentals** ▶ Shared Documents ▶ 1. Session 1 ▶ All Documents ▼
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|  | | Applied Engineering Fundamentals Session 1 course description |
|  | | Lesson 10 - Electrical Prints Diagrams and Schematics |
|  | | Lesson 11 Intstrumentation and Control Basics  NEW |
|  | | Lesson 12 Process Controls  NEW |
|  | | Lesson 13 Laser Fundamentals  NEW |
|  | | Lesson 1a -DC Electrical Terminology and Theory |
|  | | Lesson 1b - Methods of Producing Voltages and Potentials |
|  | | Lesson 1c - AC Electrical Terminology and Theory |
|  | | Lesson 2 - AC Generators |
|  | | Lesson 3 - DC generators |
|  | | Lesson 4 - DC motors |
|  | | Lesson 5 - AC motors |
|  | | Lesson 6 - Transformers |
|  | | Lesson 7 - Electrical test Instuments and Measuring Devices |
|  | | Lesson 8 - Batteries |
|  | | Lesson 9 - Power Distribution Systems |
|  | | Session 1 knowledge checks |

Path Forward

- Combine the first three lessons to be offered permanently as on-line prerequisite training: DC Electrical Terminology and Theory, Methods of Developing Voltage and Potentials, and AC Electrical Terminology and Theory.
- Dry run all the session 1 lessons via webex with new LFO FR new SSOs, and as Continuing Training for currently qualified FRs.
 - Gather feedback from dry run participants to improve lesson material.
 - Schedule revised Session 1 at Livermore for new participants when travel restrictions are lifted hopefully 1st quarter of calendar year 2021.
 - Dry run participants will go on facility tours along with the rest of the class at this time.
- Complete development of session 2 lessons with a goal of offering the course in 2nd quarter of Calendar Year 2021.

Open Discussion or Questions