TURBINE GENERATOR MAINTENANCE, INSPECTION AND REPAIR

MASTER PLAN OF INSTRUCTION
2024 – 2025

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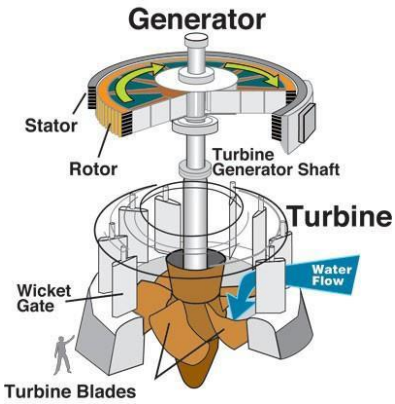

MISSION

The mission of Fort Myers Technical College is to provide high quality career and technical training, in order to prepare students for current and emerging industries, delivered by a professional and caring staff in a positive learning environment.

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The Turbine Generator Maintenance, Inspection and Repair program is a 1200-hour program responsible for training individuals to attain an entry-level status in the power generation maintenance industry. The program covers a broad range of instruction that may be found in the program outline. An appropriate amount of time is spent in each area to thoroughly cover needed instructional material as well as to gain manipulative skills. The program utilizes both theory and practical application of material to help the students gain needed knowledge and skills. Each student must successfully complete written test material on theory and related topics as well as successfully demonstrate the practical application of this information in the laboratory environment. Prerequisites for this program should include a solid background in math and science in general with emphasis on basic math, formulas, fraction and decimal conversion, and the use of precision measuring equipment, physics, chemistry and metallurgy. These areas are taught as part of the program of study, but it would be helpful to have these skills in advance. Materials used are self-paced which allow students to progress at their own pace. Competencies in each area are completed after both written and performance testing.

PROGRAM MISSION

The mission of the Turbine Generator Maintenance, Inspection and Repair program is to prepare students for employment in the power generation maintenance mechanic field.

PROGRAM PHILOSOPHY

- We believe in education and work.
- We believe in careful assessment of abilities and interests so that all students, including those with special needs, may formulate realistic occupational goals.
- We believe in equal access to training programs and in providing comprehensive support services.
- We believe in providing an active learning environment that develops technical skills, academic skills, and effective work habits.
- We believe in continuous program and curriculum revision based on input from employers, advisory committee members, concerned citizens, students, and school personnel.
- We believe in innovative teaching methods that prepare students to meet industry standards.
- We believe in lifelong learning, responsible citizenship, and promoting individual self-worth to help our students become productive citizens in today's global society.

PROGRAM CONTENT

The program content for the Turbine Generator Maintenance, Inspection and Repair program is as follows:

- Health, safety, and environmental issues
- Industrial – turbine generator equipment maintenance
- Precision measuring equipment
- Plumbing
- Management
- Cost management skills
- Technical and production skills
- Principles of technology
- Labor issues

ESSENTIAL TRAINING TASKS

Physical Requirements

Ability to:

- Maintain a high degree of manual dexterity
- Stoop
- Kneel
- Lift at least 50 pounds and walk with it
- Use voice, hearing and sight effectively to perform jobs
- Crouch or bend
- High degree of finger dexterity

- Crawl
- Differentiate colors
- Handle and manipulate supplies
- Use depth perception
- Work in an atmosphere of loud noise
- Work in an atmosphere of changes in temperature
- Perform repetitive tasks
- Measure accurately
- Work without close, direct supervision
- Work on multiple tasks and priorities
- Perform and complete tasks of relative complexity

Cognitive Requirements

- Handle confrontation and frustration and assist in problem solving
- Interpret a variety of instructions furnished in written, oral, and diagrammatic form
- Collaborate with others
- Cope with high levels of stress
- Perform mathematical computations at a level of tenth grade or higher
- Make fast decisions under pressure
- Demonstrate a high degree of patience
- Read and understand precision measuring devices and related equipment
- Work in close or crowded areas

ACCOMMODATIONS

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's IEP or 504 plan or post-secondary student's accommodations plan to meet individual needs to ensure equal access. Post-secondary students with disabilities must self-identify, present documentation, required accommodations if needed, and develop a plan with their post-secondary service provider. Accommodations received in post-secondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology, and special communication systems. Documentation of the accommodations requested and services provided are maintained in a confidential file.

TUITION

Tuition is charged for adult students at a reasonable rate that may vary slightly from year to year and is due prior to the first day of each payment period. Current fee information is available from Student Services. Tuition is waived for eligible high school dual-enrolled students. Failure to pay all fees due at the time class begins will result in the student not being able to attend class and/or clinical.

CLASS SCHEDULE

Classes meet Monday through Friday from 8:00 A.M. until 2:30 P.M. This amounts to 30 hours of classroom instruction per week. Lunch breaks are 30 minutes in length.

ATTENDANCE POLICY

In an effort to develop appropriate employability skills, FMTC students are expected to attend all class sessions. As is expected in the workplace, when it is necessary to be absent due to illness or emergency situations, all students are to notify the instructor on or before the date of the absence. The student attendance policy for each post-secondary program is consistent with industry standards.

Campus attendance is kept via a computerized system. It is the responsibility of the student to **log in** and **out** in order to receive credit for class time. This allows the school to keep accurate attendance records for the actual number of hours and minutes attended.

All adult students are expected to be in attendance at least 90% of their scheduled hours during each payment period. Adult students failing to maintain the 90% attendance standard may not be permitted to continue in their program and may be withdrawn.

Absences
A student who is absent for 6 consecutive class sessions, without prior approval and without contacting the instructor, will be withdrawn from enrollment in his/her program. Students exhibiting a pattern of 4 consecutive absences may be subject to dismissal as determined by a School Intervention Team. School Intervention Team meetings will be held as necessary to attempt to alleviate issues resulting in excessive absences and to counsel the student of possible alternatives and consequences.

Students who are late for class, including returning late from lunch, must clock in. Students who leave school early must notify their instructor and clock out. This time out of class is recorded as time absent and is counted against the required 90% attendance.

Adult students who know they will be out of school for an extended period of time may apply for a Leave of Absence from their program. students who exercise a leave of absence may have to extend their time in their program and pay additional fees.

Leaving Campus During School Hours
Students must notify their instructor when leaving campus early. This is for the safety of students, to accurately track time, and to allow the instructor to best utilize instructional resources.

PLAN OF INSTRUCTIONAL PRACTICES

Teaching Methods
Material used is self-paced and competency-based. Students proceed at their own pace with written, audio-visual, and hands-on training. They are tested periodically with written and practical testing. Practical shop experiences are designed to enhance and reinforce the theories involved as well as to develop manipulative skill and good work and safety practices. Teaching aids utilizing digital presentations, DVDs, CBTs, etc., are used to a great extent throughout all instruction. Wall charts, specification charts, and other reference materials are on constant display throughout the classroom and laboratory. A great deal of equipment must be utilized for "hands-on" skill requirements. The students will acquire rapport in working with such equipment. Materials are reviewed and updated periodically to keep them as current and as relevant as possible. Students are made responsible for all laboratory requirements such as maintaining tools, equipment, and facilities, writing all required job reports, tool room management, and cleanup of shop areas.

Safety
A basic outline of safety standards and practices is covered the first week of class along with a continuous implementation of safety principles. Students will also need to receive their OSHA 10, Twic, and in some states, Basic Plus.

Evaluation
Class performance, quizzes, tests, attendance, portfolio assessments, completion of project assignments, decision-making, work habits, achievement of entry-level competencies, and other methods are used for evaluation.

Work-Based Activities
Work-based learning activities play an integral part of the curriculum of FMTC's career-technical training programs. These activities are planned with two objectives in mind. First, the activity provides students with the opportunity to develop and apply 'real world' experience using the knowledge and skills attained in the program. Second, the activity provides the instructor with objective input from potential employers or customers of program graduates. Each work-based activity has a written instructional plan outlining objectives, experiences, competencies, and evaluation required during the activity.

Work-based activities are program specific and may include:

- Unpaid in-school shop activities to provide customer service opportunities under the direct supervision of the program instructor.
- Unpaid job shadowing experiences that may include in-school or off-campus employer-based experiences under the

supervision of a qualified employer representative who is working closely with the program instructor.
- Paid or unpaid cooperative training experiences conducted at the employer's work location under the supervision of a qualified employer representative and under the direction of the program instructor.

Cooperative Education
Cooperative training is available for students and coordinated by the instructor and career specialist. Cooperative training if for students who have shown competence in program training that indicates readiness for placement in an on-the-job program. High school students participating in the cooperative job placement program must be in the 12th grade. To be eligible for a cooperative education experience, students must have completed at least one-half of the required program hours and requirements.

Student may be returned to the program for additional training if they do not function satisfactorily on the job or when the cooperative agreement is terminated at the request of the student, parent, employer, or program instructor. Veterans will be accepted into the program in accordance with the Department of Veterans Affairs approved program.

Additional information regarding cooperative training opportunities may be obtained from the program instructor or career specialist.

GRADING POLICIES

Grading Categories:

Assessments	20%
Career Application (shop)	30%
Employability Skills	50%

Grading Scale:

A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

Each program has an employability skills rubric based on employee expectations in the industry.

Program Progress
Students are required to complete the program of training within the hours allotted by the state of Florida for completion. Progress must be at a rate that will allow completion of the program with the number of hours stated in the Curriculum Frameworks.

Work Habits
Effective work habits are the cornerstone to successful employment. Students are expected to demonstrate productive work habits during all phases of enrollment. Instructors will work with students who need assistance in this area to improve all overall possibility for successful employment.
Attendance: Attends class, arrives/leaves on time; begins and ends work as expected.
Character: Displays loyalty, honesty, trustworthiness, dependability, reliability, initiative, self-discipline, and self-responsibility; displays a high level of effort and commitment to performing and completing work.
Teamwork: Respects the right of others; respects confidentiality; is cooperative; is assertive; displays a customer service attitude; seeks opportunities for continuous learning; demonstrates mannerly behavior; encourages and facilitates cooperation, pride, trust, and group identity; fosters commitment and team spirit.
Appearance: Displays appropriate dress, grooming, hygiene, and etiquette; wears full regulation uniform.
Attitude: Displays a willingness to cooperate and accept constructive criticism; sets realistic expectations; approaches assignments with interest.
Productivity: Is prepared for class by reading assignments and completing homework; contributes to class discussions; and

involvement in lab activities (in other words, no sleeping or daydreaming). Follows safety practices; conserves and maintains equipment and supplies; keeps work area neat and clean; follows directions and procedures; makes up assignments and tests punctually; notifies proper authorities of situations presenting potential safety hazards; does not use or knowingly permit others to use tools and equipment improperly; stays on task and utilizes time constructively.
Organization: Manifests skill in prioritizing and managing time and stress; demonstrates flexibility in adapting to changes.
Communication: Communicates accurate information to others in a professional and courteous manner; displays appropriate nonverbal (eye contact, body language) and oral (listening, telephone etiquette, grammar) skills; asks pertinent questions; listens attentively to others, notifies instructor in advance of absences or tardies.

SATISFACTORY ACADEMIC PROGRESS

In order to receive and continue to receive financial assistance of any type, a student must maintain satisfactory academic progress. The Financial Aid Administrator will require a progress report to be completed and submitted to the Financial Aid Office prior to each disbursement.

Students are considered to be making Satisfactory Academic Progress (SAP) if they successfully complete their scheduled clock hours, achieve a specific cumulative grade average (CGA), and do not exceed the maximum time limits to complete their course of study. Each student's academic progress will be checked at 450 clock hours (300 hours for CHCA) and prior to subsequent disbursements for students enrolled in programs one academic year or greater. Progress will be checked at the half-way point for programs less than one academic year.

No SAP is required prior to the first disbursement.

REQUIREMENTS FOR CERTIFICATE

Certification for FULL program completion is determined by (1) mastery of 85% of program competencies as determined by the instructor, (2) a final grade of 75% or better (80% Health Sciences) in each course, and (3) proof of state-mandated basic skills levels; (4) attendance of a minimum of 90% of scheduled program hours (95% of scheduled hours for some Health Science programs). Under unique circumstances, instructors in our competency-based programs have the discretion to graduate students who fall short of 90% as long as #1-3 above are met. Students meeting these requirements are awarded a full program certificate.

A record of the student's progress is kept up-to-date by the instructor and available to the student in the FOCUS Student Portal. High school grades are reported to the assigned high school.

STUDENT DRESS CODE

Each program at FMTC has a designated uniform.

Uniform Required: FMTC uniform hunter green work shirt, navy long-sleeved shirt (for shop activities), belt, jeans, steel-toed work boots, and visible FMTC student ID badge.

PROGRAM STRUCTURE

Below is a summary of the Turbine Generator Maintenance, Inspection and Repair program structure. For more detailed information for each course, visit the FLDOE Curriculum Framework website: https://www.fldoe.org/academics/career-adult-edu/career-tech-edu/curriculum-frameworks/2023-24-frameworks/energy.stml.

OCP A **Turbine Generator Maintenance Tech I**
Students that complete OCP A will likely be able to obtain employment as a Millwright/Mechanic helper in industry related companies. They will be able to identify safety issues, organize and identify tools, read blue prints, manage money.

OCP B: **Turbine Generator Maintenance Tech II**
Students that complete OCP B will likely be able to obtain employment as a Millwright/Mechanic helper in industry related companies or maintenance mechanic for smaller companies that perform industrial maintenance. They will be able to identify safety issues, organize and identify tools, read blue prints, manage money, understand lubrication, pump maintenance, bolted flanges, removal of galled bolts.

OCP C Turbine Generator Maintenance Mechanic

Students that complete OCP C are completers of the program and will be able to obtain employment as an entry level steam or gas turbine mechanic/millwright for industry related companies located all over the United States. All of the above and alignment principles, vibration principles, rigging and lifting, control valves, NDE testing, failure analysis, generator maintenance and testing.