RCTC PROGRAM PLAN

FACILITY AND SERVICE TECHNOLOGY

Associate of Applied Science

I. MINNESOTA TRANSFER CURRICULUM (MnTC)/
GENERAL EDUCATION REQUIREMENTS.....15 CREDITS
GOAL 1: WRITTEN AND ORAL COMMUNICATION .....3 credits minimum
COMM 1130, Interpersonal Communication (MnTC Goal 1, Goal 7), 3 cr

GOAL 3: NATURAL SCIENCES OR
GOAL 4: MATHEMATICS/LOGICAL REASONING.....3 credits minimum

GOAL 6: HUMANITIES - THE ARTS, LITERATURE AND PHILOSOPHY....3 credits minimum
Six credits of any additional MnTC courses.....6 credits minimum

II. PROGRAM CORE REQUIREMENTS..... .....54 CREDITS

Semester I
FST 1500, Power Plant Theory, 4 cr
FST 1510, Welding Theory, 1 cr
FST 1520, Welding Equipment Repair, 1 cr
FST 1530, Plumbing Theory, 1 cr
FST 1540, Power Plant Operation, 4 cr
FST 1550, Plumbing Lab, 2 cr
FST 1560, Basic Pneumatics/Hydraulics, 2 cr
FST 1570, Basic Boiler Theory, 1 cr

Semester II
FST 1611, Basic Electricity, 2 cr
FST 1621, Electrical Theory I, 3 cr
FST 1631, Electrical Lab I, 3 cr
FST 1641, Electrical Theory II, 3 cr
FST 1651, Electrical Lab II, 3 cr
FST 1661, Electrical Safety National Electric Code, 2 cr

Semester III
FST 2500, Refrigeration Theory, 3 cr
FST 2506, Refrigeration Lab, 3 cr
FST 2512, Commercial Refrigeration, 3 cr
FST 2518, Commercial Refrigeration Lab, 2 cr

Semester IV
FST 2602, HVAC/Refrigeration Systems Theory, 4 cr
FST 2612, HVAC/Refrigeration Systems Lab, 2 cr
FST 2622, HVAC/Control Systems Lab, 2 cr
FST 2632, HVAC Control Systems Theory, 3 cr

TOTAL .....69 CREDITS

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PROGRAM OUTCOMES:
Upon completion of the Facility and Service Technology program at RCTC, students will achieve the following outcomes:

- Identify and work with boiler types and their related systems. Feedwater, steam, condensate, turbine, combustion and related controls.
- Identify and work with different welding processes. GTAW, GMAW, SMAW, Oxy-Acetylene, plasma and different applications.
- Identify and work with different plumbing fixtures and their repair. Understand potable, non-potable, DWV systems and their usages.
- Identify and work with hydraulic and pneumatic systems and their repair. Understand the application and working properties of each.
- Identify and work with electrical components, symbols and systems. Understand properties of electricity, diagnose, troubleshoot and repair electrical systems.
- Identify and work with different refrigeration systems. (Commercial and Domestic) Understand properties of Physics and Chemistry involved. Learn to diagnose, troubleshoot, maintain and repair the different systems.
- Identify and work with different residential and commercial HVAC systems and building computerized controls. Understand properties of each system, diagnose, troubleshoot, maintain and repair each system.
- In each step of education understand the trade related tools, personal protection equipment, and on the job, safety related to each system.
- Demonstrate professional ethics and accountability in each subject. Demonstrate job ready skills.
- In each area test and obtain state and federal licensing in each area of knowledge and practiced skill set. (if available)

NOTES:
PURPOSE: The Facility and Service Technology major is designed to prepare students for careers requiring skills in the operation, maintenance, troubleshooting, and repair of electrical and mechanical equipment found in commercial electrical controls and programmable controls. Courses in residential and commercial refrigeration, air conditioning, pneumatics, heating and cooling control, and computerized energy management systems comprise the second year instruction. Graduates usually start at entry level positions in various maintenance operation areas in medical clinics, hospitals, waste to energy plants, power plants, hotels, educational manufacturing, processing and industrial facilities. Graduates have been employed as service technicians in the heating/ventilation/air conditioning (H.V.A.C.) field, building trades, and some are self-employed in the H.V.A.C. field. After completion of the second year, students who qualify may take the State examination for Second class "A" steam engineer's license and/or refrigeration certifications.

ADDITIONAL NOTE: Students must test at READ 0900 level before enrolling or obtain instructor permission. Students must have tested at appropriate Math level or successfully completed MATH 1015 before beginning Semester II courses or obtain instructor permission.

Revised: 02/08/2022
Implementation: Fall 2022