ENGINEERING

Water Quality Technician
Pathway Certificate

PROGRAM DESCRIPTION
The Water Quality Pathway Certificate provides introductory coursework for entry-level positions as water and wastewater operators, and to prepare for taking the Level I certification exam. The water quality technology classes in the certificate are found in the Civil Engineering & Surveying Technology, AAS degree.

PROGRAM OUTCOMES
Students who successfully complete the Pathway Certificate in Water Quality will:
1. Be prepared for entry-level jobs in water quality operations
2. Develop new surveying and drafting skills

CAREER CONSIDERATIONS
All community water and wastewater systems must be operated under the supervision of certified operators. There is a desirable career with low turnover. Many experienced operators are reaching retirement age.

PROGRAM COURSE REQUIREMENTS
Year One
Program Requirements
WQT 227  Wastewater Treatment  3
WQT 228  Plane Surveying II  4
WQT 260  Water Treatment  3
WQT 261  Water Distribution  3
Total Credits 13

Engineering & Drafting Technician
Pathway Certificate

PROGRAM DESCRIPTION
The one-year certificate prepares graduates for entry-level positions as engineering or drafting technicians. All courses in the certificate are found in the Civil Engineering & Surveying Technology, AAS degree.

PROGRAM OUTCOMES
Students who successfully complete the Completion Certificate as an Engineering & Drafting Technician will:
1. Use AutoCAD, Civil3D, and SolidWorks CAD software, and ArcGIS software.
2. Interpret and prepare 2D and 3D drafting representation
3. Prepare and plot drawings to scale using drafting standards, templates, and layer management
4. Use Microsoft Office Products, including Word, Excel, PowerPoint, and Notepad, in engineering applications
5. Use of surveying equipment to perform basic field surveying and data collection
6. Work effectively on a team

CAREER CONSIDERATIONS
Engineering and drafting technicians work with and provide technical support to licensed architects, engineers and surveyors. Technicians prepare design drawings and assist with field work. Technicians utilize knowledge of building materials, engineering practices, and mathematics to complete detailed drawings and to collect or evaluate data in the field. Theory and principles of design and graphics are implemented under the direction of engineering or surveying staff.

PROGRAM COURSE REQUIREMENTS
Year One
Program Requirements
CIV 214  Virtual Design -CAD -Civil3D  3
DRF 112  Computer Aided Drafting (CAD) I  3
DRF 113  Computer Aided Drafting (CAD) II  3
ENGR 111  Engineering Orientation  3
ENGR 112A  Problem Solving & Technology  2
ENGR 112B  Problem Solving & Technology  1
ENGR 245  Engineering Graphics -SolidWorks  3
GIS 203  Digital World & Geospatial Concepts  4
GIS 234  GIS: Intro to Geographic Systems  4
GIS 235  GIS II: Analysis and Applications  4
SUR 161  Plane Surveying I  4
General Education Requirements
Human Relations Elective, from Approved List on page 43  3
MTH 111  College Algebra  5
MTH 112  Elementary Functions  4
WR 121  Academic Composition  4
Total Credits 50