

## COURSE OFFERINGS

Courses taken for college credit may be applied toward a certificate or an Associate in Arts degree.

Courses numbered under 100 are not intended for transfer credit.

### UP 85 Basic Upholstery (3)

1 hour lecture - 6 hours laboratory

**Note:** May be taken 4 times

Upholstering or replacing existing upholstery for various types of furniture. Commercial sewing machines, cushion stuffer, pneumatic tools, and hand tools will be used to complete individual projects.

### UP 86 Advanced Upholstery (3)

1 hour lecture - 6 hours laboratory

**Recommended preparation:** UP 85

**Note:** May be taken 2 times

Advanced upholstery principles and techniques. Power sewing equipment, pneumatic tools, and specialized hand tools will be used to complete complex upholstery projects. Includes estimating, customer relations, tax laws, and other fundamentals of upholstery business operation.

### UP 88 Antique Furniture Restoration (3)

1½ hours lecture - 4½ hours laboratory

**Recommended Preparation:** UP 85

**Note:** May be taken 2 times

Covers basic antique furniture restoration techniques, specialized tools, authentic materials, and standard terminology. Students will learn to identify style, approximate age, original fabrics, and types of exterior woods. Essential business concepts and practices will also be addressed.

### UP 90 Automotive Upholstery (3)

1 hour lecture - 6 hours laboratory

**Note:** May be taken 2 times

Skills and techniques required to replace, repair or customize automotive and related upholstery. Fabrication of interiors and accessories for automobile interiors, watercraft and other recreational vehicles. Techniques and considerations related to auto alarm or sound system installation. Students will complete individual or group projects.

### UP 95 Window Treatments (1.5)

1 hour lecture - 1½ hours laboratory

**Note:** May be taken 2 times

Design and fabrication of various window treatments. Includes industry standards, design and fabric options, measuring and estimating, and related business concepts. Students will complete sample projects.

### UP 96 Decorator Accessories (1.5)

1 hour lecture - 1½ hours laboratory

**Note:** May be taken 2 times

Skills and techniques necessary for creation of a variety of decorator accessories: upholstered headboards; designer cushions; custom pillows; lampshades; duvet covers, bedspreads and dust ruffles; table runners and covers; and simple slip-covers. Includes design and fabric/materials selection, industry standards, cost estimating/pricing and other business considerations. Students will complete individual projects.

### UP 97 Upholstery Topics (.5 - 4)

Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture or laboratory may be scheduled by the department. Refer to Class Schedule.

**Note:** May be taken 3 times

Topics in upholstery. See Class Schedule for specific topic offered. Course title will designate subject covered.

## Wastewater Technology Education (WWT)

Contact Occupational & Noncredit Programs for further information.  
(760) 744-1150, ext. 2284  
Office: AA-135

### Associate in Science Degrees -

AS Degree requirements are listed in Section 6 (green pages).

• Wastewater Technology Education

### Certificates of Achievement -

Certificate of Achievement requirements are listed in Section 6 (green pages).

• Wastewater Technology Education

## PROGRAM OF STUDY

### Wastewater Technology Education

Provide comprehensive education to a diverse constituency for a career in the water and wastewater field that prepares students to contribute effectively in a profession responsible for protecting public health.

### A.S. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

| Program Requirements              |   | Units     |
|-----------------------------------|---|-----------|
| WWT/WTE 50                        | Waterworks Mathematics                      | 3         |
| WWT 52                            | Treatment Plant Operations                  | 3         |
| WWT 54                            | Collection Systems Operator                 | 3         |
| WWT/WTE 56                        | Instrumentation and Controls                | 3         |
| WWT/PWM/<br>WTE 60                | Supervision                                 | 3         |
| WWT 64                            | Treatment Process Control                   | 3         |
| WWT/WTE 66                        | Motors and Pumps, Operation and Maintenance | 3         |
| <b>Electives (Select 6 units)</b> |   |           |
| WWT/WTE 58                        | Backflow Prevention                         | 3         |
| WWT/WTE 62                        | Cross Connection Specialist                 | 3         |
| WWT 97                            | Wastewater Technology Education Topics      | 0.5 - 4   |
| * CE 100                          | Cooperative Education                       | 3 - 4     |
| <b>TOTAL UNITS</b>                |   | <b>27</b> |

\*Cooperative Education must be related to this major.

## COURSE OFFERINGS

Courses numbered under 100 are not intended for transfer credit.

### WWT 50 Waterworks Mathematics (3)

3 hours lecture

**Note:** Cross listed as WTE 50; may be taken 4 times

Provides instruction in entry-level to intermediate-level mathematical calculations used in the operation and evaluation of conventional water/wastewater treatment processes and water distribution systems. The course content has been developed to meet requirements for entry to water/wastewater education program courses. Course will cover basic geometry, metric conversions, flows, pressure, and chemical dosage as it relates to the water/wastewater industry. Material will parallel some of the problems found on State Certification examinations.

**WWT 52 Treatment Plant Operations (3)**  
3 hours lecture**Note:** May be taken 4 times

An introductory wastewater treatment plant operations course. Topics covered include: the various origins and characteristics of wastewater; an overview of wastewater collections systems; preliminary treatment; primary treatment; fixed film secondary biological treatment processes; treatment ponds and disinfection. Emphasis is given to the role of the operator and preparation for solving practical problems and problems typical of those found in Operator Certification examinations.

**WWT 54 Collection Systems Operator (3)**  
3 hours lecture**Note:** May be taken 4 times

Wastewater collection systems and collection system equipment, pipeline cleaning and maintenance, system design, safety procedures, inspecting and testing procedures used in collections systems.

**WWT 56 Instrumentation and Controls (3)**  
3 hours lecture**Prerequisite:** A minimum grade of 'C' in WTE/WWT 50**Note:** Cross listed as WTE 56; may be taken 4 times

Introduction to basic electrical theory, applications, common uses, and real world examples of control systems and instrumentation used in water distribution, water and wastewater treatment plants; including switches, relays, alarms, motors, instrumentation, valve actuators, computers, and communication.

**WWT 58 Backflow Prevention (3)**  
2½ hours lecture - 1½ hours laboratory**Note:** Cross listed as WTE 58; may be taken 4 times

Provides intensive training focused on the field testing procedure for backflow prevention devices and training in the recognition and abatement of cross connections in water and plumbing systems. Students will acquire the knowledge, skills, and abilities required to test as a certified backflow tester.

**WWT 60 Supervision (3)**  
3 hours lecture**Note:** Cross listed as WTE 60/PWM 60

Supervisory aspects of public agencies including organization, decision making, coordination, communication, and public relations. Personnel supervision including coaching, training, evaluation, discipline, team building, morale, and grievances. Safety programs and encouraging safe conditions, actions and attitudes.

**WWT 62 Cross Connection Specialist (3)**  
3 hours lecture**Recommended preparation:** WTE/WWT 58**Note:** Cross listed as WTE 62; may be taken 4 times

The study of the various levels of administrative and technical procedures necessary to operate a cross connection control program. Students will obtain the knowledge to become certified as a "Cross Connection Control Specialist" under the provisions set forth by the American Water Works Association.

**WWT 64 Treatment Process Control (3)**  
3 hours lecture**Recommended preparation:** WWT/WTE 50**Note:** May be taken 4 times

A wastewater treatment and disposal course with an emphasis on control of these processes. Topics covered include: the activated sludge secondary treatment process and its variations; sludge digestion, treatment and disposal; safety and housekeeping; maintenance and an overview of effluent disposal, tertiary treatment and reclamation. Emphasis is also given to the role of the operator and provides preparation for solving process control calculations and problems typical of those found in Operator Certification examinations.

**WWT 66 Motors and Pumps, Operation and Maintenance (3)**  
3 hours lecture**Recommended preparation:** WTE/WWT 50**Note:** Cross listed as WTE 66; may be taken 4 times

Identification of problems encountered, causes of problems, corrective solutions, and repairs in the operation of pumps and motors. Implementation of maintenance programs including scheduling and recordkeeping.

**WWT 97 Wastewater Technology Education Topics (.5 - 4)**

Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture and/or laboratory may be scheduled by the department. Refer to Class Schedule.

**Note:** May be taken 4 times

Topics in Wastewater Technology Education. See Class Schedule for specific topic offered. Course title will designate subject covered.

## Water Technology Education (WTE)

Contact Occupational & Noncredit Programs for further information.

(760) 744-1150, ext. 2284

Office: AA-135

**Associate in Science Degrees -**

AS Degree requirements are listed in Section 6 (green pages).

- Water Technology Education

**Certificates of Achievement -**

Certificate of Achievement requirements are listed in Section 6 (green pages).

- Water Technology Education

**PROGRAM OF STUDY****Water Technology Education**

Provide comprehensive education to a diverse constituency for a career in the water and wastewater field that prepares students to contribute effectively in a profession responsible for protecting public health.

**A.S. DEGREE MAJOR OR  
CERTIFICATE OF ACHIEVEMENT**

| Program Requirements              |   | Units     |
|-----------------------------------|---|-----------|
| WTE/WWT 50                        | Waterworks Mathematics                      | 3         |
| WTE 52                            | Waterworks Distribution                     | 3         |
| WTE 54                            | Water Treatment Plant Operation I           | 3         |
| WTE/WWT 56                        | Instrumentation and Controls                | 3         |
| WTE/ PWM/                         |   |           |
| WWT 60                            | Supervision                                 | 3         |
| WTE 64                            | Water Quality Monitoring                    | 3         |
| WTE/WWT 66                        | Motors and Pumps, Operation and Maintenance | 3         |
| <b>Electives (Select 9 units)</b> |   |           |
| WTE/WWT 58                        | Backflow Prevention                         | 3         |
| WTE/WWT 62                        | Cross Connection Specialist                 | 3         |
| WTE 72                            | Waterworks Distribution II                  | 3         |
| WTE 74                            | Water Treatment Plant Operation II          | 3         |
| WTE 97                            | Water Technology Education Topics           | 0.5 - 4   |
| * CE 100                          | Cooperative Education                       | 3 - 4     |
| <b>TOTAL UNITS</b>                |   | <b>30</b> |

\* Cooperative Education must be related to this major.