EVT 166 Calculations for Wastewater Operators

Course Description: A course on calculations for wastewater treatment applications. Topics include: volumes, flow, and velocity; conversions; pumping and loading rates; F/M ratio; sludge age; MCRT; and efficiency.

Prerequisites(s): EVS 110 and MAT 125 **Corequisite(s):** No corequisite

Lecture Hours: 2	Lab Hours: 2	Credit Hours: 3
Lab Fee: 70	Supplemental Fee: 0	Purpose:
☐ Transfer Assurance Guide Course (TAG)	☐ Transfer Module Course (TM)	
Course Format: Lec/Lab	Grading: A/B/C/D/F/I	
Delivery Method: □ Web	□ Hybrid	☒ Classroom
Semesters Offered: □ Fall	☒ Spring	□ Summer

Course Primary Text:

Title: Applied Math for Wastewater Treatment Plant Operators	Edition: 2nd
Author(s): Joanne Kirkpatrick Price	
Publisher: Technomic Publishing Co	

Supplemental Materials:

Workbook - Applied Math for Wastewater Treatment Plant Operators, Technomic Publishing Co., Joanne Kirkpatrick Price.
Handouts

Course Outcomes:

1	EVT Students will apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined environmental engineering problems.
2	EVT Students will design solutions for well-defined environmental engineering technology problems and assist with the engineering design of systems, components, or processes appropriate to the discipline.
3	EVT Students will apply written, oral and graphical communication in well-defined technical and non-technical environments, while identifying and using appropriate technical literature.
4	EVT Students will perform standard tests, measurements and experiments then analyze and interpret the results.

5	EVT Students will perform effectively as a member of a technical team.
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Course Topics:

Week 1	Orientation / Volume Calculations
Week 2	Flow & Velocity Calculations / mg/L to lbs/day Calculations
Week 3	Loading Rate Calculations / Detention Time Calculations
Week 4	Efficiency & Percent Calculations
Week 5	Pumping Calculations / WW Collection
Week 6	Preliminary Treatment
Week 7	Sedimentation / Mid-Term
Week 8	Trickling Filters
Week 9	Rotating Biological Contactors
Week 10	Waste Treatment Ponds
Week 11	Activated Sludge
Week 12	Sludge Production & Thickening
Week 13	Sludge Dewatering & Disposal
Week 14	Sludge Digestion / Lab Calculations
Week 15	Final Exam

Methods of Evaluation/Assessment

□ Formative: □ Summative

List assessment activities (e.g. quizzes, discussions, essays, research papers, debates, oral presentations, exams):

Quizzes
Handouts
Field Trips
Powerpoints

Exams

Course Keeper: Barbara Ann Browne

Date Completed: 07/07/20