

11. New Business

Subject **A. Curriculum**

Meeting Mar 13, 2018 - Board of Trustees Regular Meeting

Access Public

Type Action

Recommended Action That the Board review and approve the recommendations of the Curriculum Committee as reflected in the attached Curriculum Summary.

Proposal:

That the Board review and approve the recommendations of the Curriculum Committee as reflected in the attached Curriculum Summary.

Background:

The Curriculum Summary lists courses and programs approved by the Curriculum Committee.

Budgetary Implications:

None.

Follow Up/Outcome:

Curriculum modifications are incorporated into the college schedule and catalog.

Recommended By: Kathleen A. Rose, Superintendent/President

File Attachments

20180313_Curriculum.doc (193 KB)

APPROVED BY THE BOARD OF TRUSTEES
DATE 3/13/18
Bailey

**Board of Trustees
Curriculum Summary
March 13, 2018**

CONSENT AGENDA

MATH 700 Arithmetic (Fall 2018) 0 Units, 3 Lec, 1 Lab

Description:

This course covers arithmetic procedures with whole numbers, fractions, decimals, order of operations, ratios, proportions, percent, integers, measurements and geometry. This course may be offered in an open entry/open exit format.

Justification:

This is a new noncredit course that was approved at the December 27, 2017 Curriculum Committee meeting. The change of course title was requested by the Technical Review Committee, but was overlooked.

Correct course title:

FROM: "Noncredit Arithmetic"

TO: "Arithmetic"

Deactivate Course

GUID 531 Career Exploration and Job Readiness Training - WorkAbility 3 (Fall 2018), 0.5 - 2 Units, 0 Lec, 2 - 6.8 Lab

Description:

Guidance 531 is a course designed to provide individualized job preparation skills and vocational guidance to students with disabilities who are in the process of developing their career plans. Students will receive support as they actively pursue employment through regular meetings with WorkAbility 3 staff members, maintenance of job search log, participation in basic education classes and registration with internet based employment websites. To meet course requirements, students must complete a progress report each semester and arrange to perform community service with a non-profit organization. This course is repeatable.

ADVISORY: Student must be an active participant in the WorkAbility 3 program.

Justification:

We will be making course this inactive because we will not be offering it at this time.

Deactivate Course

GUID 532 Career Development and Work Experience - WorkAbility 3 (Fall 2018), 0.5 - 2 Units, 0 Lec, 2 Lab

Description:

Guidance 532 offers students with disabilities the opportunity to receive course credit for participating in paid employment situations including on-the-job training, internships and entry-level positions. Students will utilize a variety of work alternatives and settings according to

individual needs and vocational objectives. To meet course requirements, students must arrange monthly meetings with a WorkAbility 3 staff member, complete and submit time sheets on a regular basis, review their progress report and submit an employer evaluation form once a semester. This course may be repeated. ADVISORY: Student must be an active participant in the WorkAbility 3 program.

Justification:

We will be making course this inactive because we will not be offering it at this time.

NEW COURSE PROPOSAL – SECOND READING

New Course - Second Reading

HVAC 205 Commercial Refrigeration and Ice Machines (Fall 2018), 4 Units, 3 Lec, 3 Lab

Description:

This course introduces refrigeration and applications. Topics include defrost methods, safety and operational control, refrigerant piping, refrigerant recovery and charging, and leak testing. This course covers the installation and startup of common commercial refrigeration systems. Topics include display/storage boxes or cases, walk-in systems, and supermarket racks. In addition to that this course introduces the students to commercial ice machines. Emphasis is placed on dispensing machines, ice making equipment, electrical and mechanical operation sequences, control adjustment procedures, preventative maintenance, repair, and installation procedures using a variety of refrigerants and blends. PREREQUISITE: HVAC 201 and HVAC 202 with a grade of "C" or better.

Justification:

This is the fifth of six courses being developed that will make up the start of Gavilan College's new Heating, Air-Conditioning and Refrigeration Technology program. The HVAC/R program is being developed based on labor market needs. According to the Air-Conditioning, Heating and Refrigeration Institute, an estimated 57,000 skilled workers are needed each year to work in the HVAC/R industry. A recent national study estimates the number of employees in the industry could double by 2025. The development of the Gavilan College HVAC/R program has the support and recommendation of the Bay Area Region of the Bay Area Community College Consortium. The Bay Region has recently supported the regional venture project related to expanding current HVAC/R programs at Bay Region colleges and developing the Gavilan College HVAC/R program. HVAC/R is within the industry sector of Clean Energy, Energy, Construction and Utilities which has been identified by the Bay Region as one of the top priority industry sectors with strong labor demand.

The College's strategies and goals from the 2015 – 2020 Strategic Plan support this new program:

STRATEGY #1 Optimize enrollment, course offerings, and services to reflect community needs and growth.

Goal #2 Strengthen career programs by participating in regional career technical education collaboratives and initiatives from the Chancellor's Office.

STRATEGY #2 Improve student services and enhance curriculum and programs in order to help students meet their educational, career, and personal goals.

In addition, it is supported by the CTE's program plan. Which states, the main objective of the program is: To improve the quality and increase the quantity of career technical education provided by our system; courses, programs, pathways, credentials (licensure), certificates, and degrees.

MODIFICATION TO EXISTING COURSES

Modify Course

ACCT 20 Financial Accounting (Fall 2018), 4 Units, 4 Lec, 0 Lab

Description:

An introduction to accounting as an information system, examining why it is important and how it is used by investors, creditors, and others to make decisions. The course covers the accounting information system including the process, purpose, concepts, rules, and theory. The course will include the application of accounting principles, concepts, and theory used to accumulate and summarize financial data into financial statements. The course will include issues relating to asset, liability, and equity valuation, revenue and expense recognition, cash flow, internal controls, and ethics. The course will include the critical analysis and interpretation of financial information and financial statements. This course has the option of a letter grade or pass/no pass. (C-ID: ACCT 110) ADVISORY: Intermediate Algebra (Math 233 or Math 240), English College Reading (English 260), English Practical Writing (English 250), and basic computerized spreadsheet knowledge.

Justification:

This course is on the 5 year cycle for review. Modified content to include updated textbook.

Modify Course

AH 51 LVN - Semester 1 - Medical Surgical Nursing I (Fall 2018), 11 Units, 6 Lec, 15 Lab

Description:

This course is designed to provide a basic introduction to patient care within the role of the Licensed Vocational Nurse. Emphasizes principles and skills necessary for safe, effective care. Content includes introduction to health care, therapeutic communication, client rights and needs, cultural aspects of care, asepsis, personal care, safety, patient education, gerontology, death and dying, assessment of multiple body systems, fluid and electrolytes and nutrition therapy. Related pharmacology and basics of medication administration are included. \$100 course material fee, payable at registration. ADVISORY: AH 8 and AH 9. PREREQUISITE: Admission to the nursing program.

Justification:

This is to update the course outline so that it mirrors the updated Instructional Plan as mandated by the Board of Vocational Nursing.

Modify Course

AH 52 LVN - Semester 2 - Medical-Surgical Nursing II (Spring 2019), 11 Units, 6 Lec, 15 Lab

Description:

Course is designed to provide both theoretical and clinical experience in the care of adult, medical-surgical clients. This course will further refine basic nursing skills and procedures. It will introduce more complicated nursing situations. Content includes pre-operative and post-operative care of the client with pain, cancer, and care of the client with disorders of musculoskeletal, integument, gastrointestinal, liver and respiratory systems. Related pharmacology is included. \$100 course material fee, payable at registration. PREREQUISITE: Completion of AH 51.

Justification:

This is to update the course outline so that it mirrors the updated Instructional Plan as mandated by the Board of Vocational Nursing.

Modify Course

AH 53 LVN-Semester 3-Medical-Surgical Nursing III & Maternity/Newborn (Fall 2018), 11 Units, 6 Lec, 15 Lab

Description:

Course contains two components to provide theoretical and clinical experience in medical-surgical and maternal- neonatal nursing. Content includes care of clients with disorders of the circulatory, urinary and reproductive systems, normal pregnancy and birth, common and major complications of pregnancy and childbirth, care of the normal newborn, and care of the neonate with problems. Related pharmacology is included. \$100 course material fee, payable at registration. PREREQUISITE: Completion of AH 51 and AH 52.

Justification:

This is to update the course outline so that it mirrors the updated Instructional Plan as mandated by the Board of Vocational Nursing.

Modify Course

AH 54 LVN-Semester 4 - Medical-Surgical Nursing IV & Pediatric Nursing (Spring 2019), 11 Units, 6 Lec, 15 Lab

Description:

Course contains two components to provide theoretical and clinical experience in medical surgical and pediatric nursing. Content includes care of clients with disorders of the endocrine and neurosensory systems, mental health, emergency nursing and care of the child, including preventative measures and health teaching. A leadership component is included to prepare the student for the realistic work assignment of the Licensed Vocational Nurse. \$100 course material fee, payable at registration. PREREQUISITE: Completion of AH 51, 52 and 53.

Justification:

This is to update the course outline so that it mirrors the updated Instructional Plan as mandated by the Board of Vocational Nursing.

Modify Course

AJ 100A Basic Police Academy (Fall 2013), 21 - 24 Units, 12 - 15 Lec, 37 - 44 Lab

Description:

This 884 - 1062 variable unit course satisfies required training mandates governed by the Commission on Peace Officer Standards and Training (POST) entry level Peace Officers. The course includes principles, procedures and techniques of law enforcement, including: Criminal Justice Law, Patrol and Investigation procedures, Defensive Tactics, Firearms/Chemical Agents, Leadership, Ethics, Community Relations, Police Vehicles Operations, Traffic Enforcement, Cultural Diversity, Report Writing, and First Aid/CPR. Course requires significant time commitment and outside course work including uniform preparation, homework assignments and equipment maintenance. PREREQUISITES: 1) Completion of POST approved pre-entry English skills assessment examination and physical agility test. 2) Medical clearance by a licensed physician. 3) Penal Code Section 13511.5 requires that each applicant for admission to the Basic Police Academy course shall be required to submit written certification from the Department of Justice that the applicant has no criminal history background which would disqualify him or her, from owning, possessing, or having under his or her control a firearm.

Justification:

No changes to course fundamentals - hours and curriculum mandated by the State of California are unchanged. Instead, changes have been made due CurricUNET idiosyncratic missing elements; elements contained in old paper process that did not make it into the online system. These changes are:

Units/Hours/Status - required field update for Curricnet - Course is for credit

Out of Class assignments - as reflected in the course outline, explicitly stated here: Out of class reading assignments in preparation for next day of training.

Text Books - California State Peace Officers Standards in Training Learning Domain Workbooks (provided by the Sheriffs Office)

Transfer - Not transferrable course.

Modify Course

AJ 107A Adult Corrections Officer Core Academy (Spring 2013), 4 - 6 Units, 3.26 - 5.9 Lec, 6.52 - 7.87 Lab

Description:

This 176-248 hour variable course is designed to meet the California Corrections Standard Authority (CSA) requirements for entry-level training of Correctional Officers for adult institutions. The course includes lecture and practical application skills and knowledge including roles and responsibilities of the adult corrections officer, Title 15, Title 24, professionalism and ethics, and proper techniques to maintain the safety and security of inmates. PREREQUISITE: 1. Successful completion of STC approved pre-entry written and physical assessment examinations provided by the Academy. 2. Students must complete a Department of Justice background

investigation and meet requirements as set forth in Government Code 1029 for qualification as a Corrections Officer. 3. Medical clearance by a licensed physician.

Justification:

No changes to course fundamentals - hours and curriculum mandated by the State of California are unchanged. Instead, changes have been made due CurricUNET idiosyncratic missing elements; elements contained in old paper process that did not make it into the online system.

These changes are:

Units/Hours/Status - required field update for Curricnet - Course is for credit

Out of Class assignments - as reflected in the course outline, explicitly stated here: Out of class reading assignments in preparation for next day of training.

Text Books - ACO Core Workbook (provided by the Sheriffs Office)

Transfer - Not transferrable course.

Modify Course

AMT 225 Introduction to Drones (Fall 2018), 3 Units, 3 Lec, 0 Lab

Description:

This course introduces students to the foundations of drones including the history, systems, maintenance, payloads, data links, ground support equipment, classes of systems, categories, applications, mission planning and control and recovery systems.

Justification:

Non-substantial changes: 1. This course is adding the option of being taught online and/or in a hybrid format based on the recommendation of the instructors, who are experts in the field and currently work in the industry. It is felt that these options (online and/or hybrid) may help with enrollment and appeal to prospective students who are already in the work force. 2. Adding information in the textbook area that states the students are required to provide software for use in the class.

Modify Course

AMT 226 Drone Flight Operations and Pilot Certification (Fall 2018), 3 Units, 2 Lec, 3 Lab

Description:

This course will instruct students in the basic flight operations for both fixed wing and rotor wing drone aircraft, as well as prepare them to take the FAA pilot certification exam.

Justification:

Non-substantial changes: 1. This course is adding the option of being taught online and/or in a hybrid format based on the recommendation of the instructors, who are experts in the field and currently work in the industry. It is felt that these options (online and/or hybrid) may help with enrollment and appeal to prospective students who are already in the work force. 2. Adding information in the textbook area that states the students are required to provide software for use in the class.

Modify Course

AMT 227 Drone Aerial Photography and Videography (Fall 2018), 3 Units, 2 Lec, 3 Lab

Description:

This course is designed to provide the student with the skills which will allow them to capture and analyze photos and videos from drones. Emphasis is placed on cameras and image software available, applications, and techniques for analyzing imagery.

Justification:

Non-substantial changes: 1. This course is adding the option of being taught online and/or in a hybrid format based on the recommendation of the instructors, who are experts in the field and currently work in the industry. It is felt that these options (online and/or hybrid) may help with enrollment and appeal to prospective students who are already in the work force. 2. Adding information in the textbook area that states the students are required to provide software for use in the class.

Modify Course

AMT 228 Drone Maintenance Technician (Fall 2018), 3 Units, 2 Lec, 3 Lab

Description:

This course is designed to provide students with the skills to maintain and repair drones. Emphasis is on the various systems, including the fuel, electrical, flight control and power plant systems as well as digital central processor assembly and system support equipment. Also covers system performance criteria, operational safety, inspection techniques and diagnosis of the drone.

Justification:

Non-substantial changes: 1. This course is adding the option of being taught online and/or in a hybrid format based on the recommendation of the instructors, who are experts in the field and currently work in the industry. It is felt that these options (online and/or hybrid) may help with enrollment and appeal to prospective students who are already in the work force. 2. Adding information in the textbook area that states the students are required to provide software for use in the class.

Modify Course

ATH 90 Intercollegiate Beach Volleyball (Spring 2019), 2.5 - 3 Units, 0 Lec, 7.5 - 10 Lab

Description:

This course provides practice and competition in intercollegiate beach volleyball for women. Before participating, students must have competed a physical exam and their athletic eligibility paperwork. May be repeated three times for credit. This course has the option of a letter grade or pass/no pass.

Justification:

Non-substantial change. The title of the course is being changed from Intercollegiate Sand Volleyball to Intercollegiate Beach Volleyball. When the sport was first recognized by the California Community College Athletic Association, the organization that governs community college intercollegiate athletics in the state, it was called sand volleyball. However it is now

called beach volleyball and to stay consistent with our governing body and the other beach volleyball classes the college offers we are making this change. Besides the title change, we are replacing the term sand with beach in the course description, student learning outcomes, and in some areas of the content. Also reduced the number of SLO's by consolidating them.

Modify Course

CD 6 Games & Rhythms Child's Physical Development:Foundation/Framework (Spring 2019), 3 Units, 3 Lec, 0 Lab

Description:

Nature, function and organization of physical activities for children. Introduction to the physical domain of the California Preschool Learning Foundations and Frameworks. Emphasis is given to the understanding of movement skills and concepts. Designed for those planning to work with children. Provides practical strategies for implementing the curriculum frameworks developed for this domain. Applicable to required or Child Development Permit holders, pre-school, transitional kindergarten, and early-primary teachers. Also listed as Kinesiology 6. This course has the option of a letter grade or pass/no pass. ADVISORY: Eligible for English 250 and English 260.

Justification:

Non-substantial changes. Aligning the course with the CAP Transitional Kindergarten information so that Child Development Permit holders, pre-school, transitional kindergarten, and early-primary teachers will be able to take this course to meet professional development unit requirements. This will provide the opportunity to increase course enrollment. Modified the title and course description to include CAP TK language, revised the SLOs, moved some of the old SLOs into the content as student performance objectives for specific topics, included in the content information about CAP TK CA Foundations and Frameworks requirements, and updated the textbook information.

Modify Course

CD 9 Child Health/Nutrition and Safety-Foundations and Frameworks (Fall 2018), 3 Units, 3 Lec, 0 Lab

Description:

The key components that promote physical health, mental health and safety for both children and staff will be identified along with the importance of collaboration with families and health professionals. Introduction to the laws, regulations, standards, policies, procedures, curriculum, and to the health domain of the California Preschool Learning Foundations and Frameworks related to early childhood health habits, safety and nutrition. Focus on integrating the concepts into curriculum planning and program development. Applicable to required or professional development units for Child Development Permit holders, as well as pre-school, transitional kindergarten, and early-primary teachers. This course may be taken for a letter grade or pass/no pass. (C-ID: ECE 220) ADVISORY: Eligible for English 250 and English 260.

Justification:

Non-substantial changes. Aligning the course with the CAP Transitional Kindergarten information so that Child Development Permit holders, pre-school, transitional kindergarten, and early-primary teachers will be able to take this course to meet professional development unit requirements. This will provide the opportunity to increase course enrollment. Modified the title and course description to include CAP TK language, revised the SLOs, moved some of the old SLOs into the content as student performance objectives for specific topics, included in the content information about CAP TK CA Foundations and Frameworks requirements, moved the homework to the appropriate Out of Class Assignments box, and updated the textbook information. At the same time, maintaining the information to meet C-ID requirements. Also included Hybrid as a distance education delivery method. Note, this course already had online as a delivery method.

Modify Course

CD 20 Children's Language and Literature-Foundations and Frameworks (Fall 2018), 3 Units, 3 Lec, 0 Lab

Description:

A developmental view of children's language and literacy learning in a framework of children's literature, including the strands of listening and speaking, reading, and writing. Provides practical considerations for implementing the curriculum frameworks developed for this domain. Applicable to required or professional development units for Child Development Permit holders, pre-school, transitional kindergarten, and early-primary teachers. This course has the option of a letter grade or pass/no pass. ADVISORY: Eligible for English 250 and English 260.

Justification:

Non-substantial changes. Aligning the course with the CAP Transitional Kindergarten information so that Child Development Permit holders, pre-school, transitional kindergarten, and early-primary teachers will be able to take this course to meet professional development unit requirements. This will provide the opportunity to increase course enrollment. Modified the title and course description to include CAP TK language, revised and reduced the number of SLOs, moved some of the old SLOs into the content as student performance objectives for specific topics, included in the content information about CAP TK CA Foundations and Frameworks requirements, moved the homework to the appropriate Out of Class Assignments box, and updated the textbook information.

Modify Course

CD 11A Administration of Programs for Young Children (Fall 2018), 3 Units, 3 Lec, 0 Lab

Description:

The principles and practices of the organization and administration of early childhood programs. Covers program types, budgets, management, regulations, laws, development and implementation of policies and procedures. examines administrative tools, philosophies, and techniques needed to organize, open and operate an early care and education program. ADVISORY: Child Development 1 and 2

Justification:

Removal from suspension, CAP Alignment, update of textbook, SLOs and PLOs.

Modify Course

ECON 1 Principles of Macroeconomics (Fall 2018), 3 Units, 3 Lec, 0 Lab

Description:

Introduction to the principles of macroeconomic analysis, economic institutions, and economic policy; supply and demand, determinants and distribution of output, income, and welfare through the market system; international trade and globalization. Measurement, determinants of, and policies relating to long-run economic growth, business cycle fluctuations, unemployment, and inflation. This course has the option of a letter grade or pass/no pass. (C-ID: ECON 202) PREREQUISITE: MATH 430 or MATH 205

Justification:

5 year update: updated textbook, modified SLO's, added an out of class assignment.

Modify Course

ECON 2 Principles of Microeconomics (Fall 2018), 3 Units, 3 Lec, 0 Lab

Description:

Introduction to microeconomic principles, theory, and analysis. Topics include scarcity and resource allocation, specialization and exchange, and the determinants and distribution of output, income, and welfare through the market system, as well as elasticity, production and cost theory, and market failure caused by externalities and asymmetric information. Includes consumer choice and utility maximization, as well as profit maximization in various competitive settings. This course has the option of a letter grade or pass/no pass. (C-ID: ECON 201) PREREQUISITE: MATH 430 or MATH 205

Justification:

5 year update: updated textbook, modified SLO's, added an out of class assignment.

Modify Course

KIN 6 Games & Rhythms Child's Physical Development:Foundation/Framework (Spring 2019), 3 Units, 3 Lec, 0 Lab

Description:

Nature, function and organization of physical activities for children. Introduction to the physical domain of the California Preschool Learning Foundations and Frameworks. Emphasis is given to the understanding of movement skills and concepts. Designed for those planning to work with children. Provides practical strategies for implementing the curriculum frameworks developed for this domain. Applicable to required or Child Development Permit holders, pre-school, transitional kindergarten, and early-primary teachers. Also listed as CD 6. This course has the option of a letter grade or pass/no pass. ADVISORY: Eligible for English 250 and English 260.

Justification:

Non-substantial changes. Aligning the course with the CAP Transitional Kindergarten information so that Child Development Permit holders, pre-school, transitional kindergarten, and early-primary teachers will be able to take this course to meet professional development unit requirements. This will provide the opportunity to increase course enrollment. Modified the title and course description to include CAP TK language, revised the SLOs, moved some of the old SLOs into the content as student performance objectives for specific topics, included in the content information about CAP TK CA Foundations and Frameworks requirements, and updated the textbook information.

Modify Course

MATH 8A First Half of Precalculus (Spring 2018), 4 Units, 4 Lec, 0 Lab

Description:

Math 8A prepares the student for the study of calculus by providing important skills in algebraic manipulation, interpretation, and problem solving at the college level. Topics will include basic algebraic concepts, complex numbers, equations and inequalities of the first and second degree, functions, and graphs, linear and quadratic equations, polynomial functions, exponential and logarithmic functions, systems of equations, and matrices.

Justification:

Course needs to be updated to obtain C-ID approval. Textbook, methods of instruction, SLO, course description, and course content updates.

Modify Course

MATH 8B Second Half of Precalculus (Spring 2018), 4 Units, 4 Lec, 0 Lab

Description:

Math 8B prepares students for the study of calculus by providing important skills in algebraic manipulation, interpretation, and problem solving at the college level. Topics will include trigonometric functions, identities, inverse trigonometric functions, and equations; applications of trigonometry, vectors, complex numbers, polar and parametric equations; sequences, series, and mathematical induction; conic sections. PREREQUISITE: Mathematics 8A with a grade of 'C' or better.

Justification:

Course needs to be updated to obtain C-ID approval. Textbook, methods of instruction, SLO, course description, and course content updates.

Modify Course

PSYC 10 Introduction to Psychology (Spring 2018), 3 Units, 3 Lec, 0 Lab

Description:

The nature, scope, methods, presuppositions, history, and fields of psychology together with the scientific study of factors influencing human behavior, human development, perception, learning, memory, emotion, personality, frustration, and psychotherapy. This course was previously listed as PSYC 1A. (C-ID: PSY 110) ADVISORY: Eligible for English 250 and English 260.

Justification:

This course is being updated because it is on the five-year curriculum update cycle. Updated the textbook and added the Outside of Class Assignments section, Also updated the SLOs and methods of instruction.

Modify Course

PSYC 11 Biological Psychology (Spring 2018), 3 Units, 3 Lec, 0 Lab

Description:

This course stresses the biological basis of behavior including: neuroanatomy, the senses, perception, learning, thinking, and psychological disorders. This course was previously listed as PSYC 1B. (C-ID: PSYC 150) PREREQUISITE: Completion of PSYC 1A or PSYC 10 with a grade of 'C' or better.

Justification:

Updating course for 5-year cycle, reviewed SLOs, updated textbook, and methods of instruction.

Modify Course

SPAN 1B Elementary Spanish (Fall 2018), 5 Units, 5 Lec, 0 Lab

Description:

Continuation of Spanish 1A. Further development of the four skills of understanding, speaking, reading and writing Spanish. This course will continue to emphasize the study of Hispanic culture and institutions. This course has the option of a letter grade or pass/no pass. PREREQUISITE: Spanish 1A or equivalent.

Justification:

This course is due for its general update. After review of the course outline, we have updated the following: textbook and we have added a prerequisite to this course.

MODIFICATION TO EXISTING PROGRAM

**Wastewater Collection Technology Education
AA Degree**

Modification: Per the Articulation Officers research and recommendation, all WTRM courses were renumbered from 100's to 200's. Therefore the WTRM programs degrees and certificates needed to be updated to include the renumbered courses. In addition, the Program Learning Outcomes have been reviewed and reduced to a more meaningful and measurable number. Also adding WTRM 217 as an additional electives choice under List B. This is an appropriate course option for this degree and the program is trying to provide opportunities for the student to be able to complete their requirements.

Description

The Wastewater Collection Technology Education program is designed to prepare students to maintain and operate equipment; maintain, restore, monitor, evaluate and adjust collection systems; and maintain

lift stations. Students completing the required courses for this degree will qualify to take nearly a dozen wastewater related certification examinations offered by the California Water Environment Association (CWEA). Although current State regulations do not require certification of wastewater collection system personnel, many public sector employers either require or prefer job applicants who have obtained the CWEA Wastewater Collection and Maintenance certifications.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Given a wastewater collection map book and using common terminology pertaining to collection system components; identify pipeline dimensions, pipe construction materials, pipe fittings, direction of flow, location of valves, services, and lift stations.
2. Describe how to locate, inspect, clean, operate, and manage quality control practices within a collection system.
3. Perform basic mathematical computations and conversions relating to wastewater collection systems, pressure, volume, velocity, chemical dosage, and hydraulic and organic loading.
4. Identify regulations and operate the plant accordingly.
5. Be able to pass the California licensure examination in the water industry.

Required Core

Credit Hours: (21 Required)

WTRM201	Introduction to Water, Wastewater Technology	3
WTRM202	Beginning Water, Wastewater, Distribution Math	3
WTRM203	Introduction to Electrical and Instrumentation Processes	3
WTRM204	Motors and Pumps, Operation and Maintenance	3
WTRM207	Beginning Wastewater Treatment Operations	3
WTRM213	Beginning Wastewater Collection	3
WTRM216	Advanced Wastewater Collections	3

List A: Select one of the following: 3 Units

Credit Hours: (3 Required)

WTRM205	Water Distribution 1	3
WTRM206	Beginning Water Treatment Plant Operation	3
WTRM209	Advanced Water Treatment Plant Operation	3
WTRM210	Advanced Water/Wastewater/Distribution Math	3
WTRM211	Advanced Wastewater Treatment Plant Operation	3
WTRM212	Applied Hydraulics	3
WTRM214	Laboratory Analysis for Water, Wastewater	3
WTRM215	Leadership and Supervision in the Water Industry	3

LIST B - Select two of the following: 4 - 8 Units

Credit Hours: (4 - 8 Required)

WTRM217	Water Use Efficiency Practitioner	3
WTRM218	Introduction to Occupational Health and Safety	3
WTRM221	Mechanical Maintenance	3
WTRM232	Advanced Water Distribution	3
WTRM233	Water Conservation	3
WTRM234	Industrial Wastewater and Stormwater Management	4
WTRM235	Pollution Prevention	3
WTRM290	Occupational Work Experience/Water/Wastewater Technology	1 - 4

General Education Requirements: (35 - 39)

Total: 28.00 - 32.00

Wastewater Collection Technology Education

Certificate of Achievement

Modification: Per the Articulation Officers research and recommendation, all WTRM courses were renumbered from 100's to 200's. Therefore the WTRM programs degrees and certificates needed to be updated to include the renumbered courses. In addition, the Program Learning Outcomes have been reviewed and reduced to a more meaningful and measurable number.

Description

The Wastewater Collection Technology Education program is designed to prepare students to maintain and operate equipment; maintain, restore, monitor, evaluate and adjust collection systems; and maintain lift stations. Students completing the required courses for this certificate will qualify to take nearly a dozen wastewater related certification examinations offered by the California Water Environment Association (CWEA). Although current State regulations do not require certification of wastewater collection system personnel, many public sector employers either require or prefer job applicants who have obtained the CWEA Wastewater Collection and Maintenance certifications.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Given a wastewater collection map book and using common terminology pertaining to collection system components; identify pipeline dimensions, pipe construction materials, pipe fittings, direction of flow, location of valves, services, and lift stations.
2. Describe how to locate, inspect, clean, operate, and manage quality control practices within a collection system.
3. Perform basic mathematical computations and conversions relating to wastewater collection systems, pressure, volume, velocity, chemical dosage, and hydraulic and organic loading.
4. Identify regulations and operate the plant accordingly.
5. Be able to pass the California licensure examination in the water industry.

Required Core:

Course	Units
WTRM 201 Introduction to Water, Wastewater Technology	3.00
WTRM 202 Beginning Water, Wastewater, Distribution Math	3.00
WTRM 203 Introduction to Electrical and Instrumentation Processes	3.00
WTRM 204 Motors and Pumps, Operation and Maintenance	3.00
WTRM 207 Beginning Wastewater Treatment Operations	3.00
WTRM 213 Beginning Wastewater Collection	3.00
WTRM 216 Advanced Wastewater Collections	3.00
	Total: 21 Units

Wastewater Technology Education

AA Degree

Modification:

Per the Articulation Officers research and recommendation, all WTRM courses were renumbered from 100's to 200's. Therefore the WTRM programs degrees and certificates needed to be updated to include the renumbered courses. In addition, the Program Learning Outcomes have been reviewed and reduced to a more meaningful and measurable number. Also adding WTRM 217 as an additional elective choice under List B. This is an appropriate course option for this degree and the program is trying to provide opportunities for the student to be able to complete their requirements.

Description

The Wastewater Technology Education program is designed to prepare students to operate or control an entire system of machines, often through the use of control boards, to transfer or treat wastewater. This includes monitoring gauges, dials or other indicators to make sure machines are working properly and troubleshooting and/or performing routine maintenance on equipment. Students completing the required courses for this degree will qualify to take the SWRCB certification examination for the Grade 1 Wastewater Plant Operator as well as nearly a dozen wastewater related certification examinations offered by CWEA.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Identify, describe, and define the basic principles of wastewater and collection systems and of conventional wastewater treatment plants.
2. Compare and contrast wastewater treatment unit processes including preliminary, primary, secondary, and tertiary treatment.
3. Perform basic mathematical calculations and conversions relating to water flow, pressure, volume, velocity, chemical dosage, and hydraulic and organic loading.
4. Identify regulations and operate the plant accordingly.
5. Be able to pass the California licensure examination in the water industry.

Core Requirements: (21 Units)

Course	Units
WTRM 201 Introduction to Water, Wastewater Technology	3.00
WTRM 202 Beginning Water, Wastewater, Distribution Math	3.00
WTRM 203 Introduction to Electrical and Instrumentation Processes	3.00
WTRM 204 Motors and Pumps, Operation and Maintenance	3.00
WTRM 207 Beginning Wastewater Treatment Operations	3.00
WTRM 211 Advanced Wastewater Treatment Plant Operation	3.00
WTRM 213 Beginning Wastewater Collection	3.00

LIST A / Electives: (3 Units - Select one of the following:)

Course	Units
WTRM 209 Advanced Water Treatment Plant Operation	3.00
WTRM 210 Advanced Water/Wastewater/Distribution Math	3.00
WTRM 212 Applied Hydraulics	3.00
WTRM 214 Laboratory Analysis for Water, Wastewater	3.00
WTRM 215 Leadership and Supervision in the Water Industry	3.00
WTRM 232 Advanced Water Distribution	3.00

LIST B: (4 - 8 Units) Select two of the following:

Course	Units
WTRM 216 Advanced Wastewater Collections	3.00
WTRM 217 Water Use Efficiency Practitioner	3.00
WTRM 218 Introduction to Occupational Health and Safety	3.00
WTRM 221 Mechanical Maintenance	3.00
WTRM 233 Water Conservation	3.00
WTRM 234 Industrial Wastewater and Stormwater Management	4.00
WTRM 235 Pollution Prevention	3.00
WTRM 290 Occupational Work Experience/Water/Wastewater Technology	1.00 - 4.00

General Education Requirements: (35 - 39)

Total: 28-32 Units

**Wastewater Technology Education
Certificate of Achievement**

Modification:

Per the Articulation Officers research and recommendation, all WTRM courses were renumbered from 100's to 200's. Therefore the WTRM programs degrees and certificates needed to be updated to include the renumbered courses. In addition, the Program Learning Outcomes have been reviewed and reduced to a more meaningful and measurable number.

Description

The Wastewater Technology Education program is designed to prepare students to operate or control an entire system of machines, often through the use of control boards, to transfer or treat wastewater. This includes monitoring gauges, dials or other indicators to make sure machines are working properly and troubleshooting and/or performing routine maintenance on equipment. Students completing the required courses for this certificate will qualify to take the SWRCB certification examination for the Grade 1 Wastewater Plant Operator as well as nearly a dozen wastewater related certification examinations offered by CWEA.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Identify, describe, and define the basic principles of wastewater and collection systems and of conventional wastewater treatment plants.
2. Compare and contrast wastewater treatment unit processes including preliminary, primary, secondary, and tertiary treatment.
3. Perform basic mathematical calculations and conversions relating to water flow, pressure, volume, velocity, chemical dosage, and hydraulic and organic loading.
4. Identify regulations and operate the plant accordingly.
5. Be able to pass the California licensure examination in the water industry.

Required Core: (21 Units)

Course	Units
WTRM 201 Introduction to Water, Wastewater Technology	3.00
WTRM 202 Beginning Water, Wastewater, Distribution Math	3.00
WTRM 203 Introduction to Electrical and Instrumentation Processes	3.00
WTRM 204 Motors and Pumps, Operation and Maintenance	3.00
WTRM 207 Beginning Wastewater Treatment Operations	3.00
WTRM 211 Advanced Wastewater Treatment Plant Operation	3.00
WTRM 213 Beginning Wastewater Collection	3.00
	Total 21 Units

Water Distribution Technology Education

Modification:

Per the Articulation Officers research and recommendation, all WTRM courses were renumbered from 100's to 200's. Therefore the WTRM programs degrees and certificates needed to be updated to include the renumbered courses. In addition, the Program Learning Outcomes have been reviewed and reduced to a more meaningful and measurable number. Also adding WTRM 217 as an additional elective choice under List B. This is an appropriate course option for this degree and the program is trying to provide opportunities for the student to be able to complete their requirements.

AA Degree

Description

The Water Distribution Technology Education program is designed to teach students the methods, processes, technology and current practices involved in operating and maintaining modern, complex water distribution systems. Students who satisfactorily complete the required courses for this degree will qualify to take the CDPH Grade D-1 through D-5 Water Distribution Operator examinations required to obtain certification and employment with a water district.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Compare and contrast the different types of water distribution systems, including its components: pumps, motors, meters, valves, pipes, and instrumentation and controls.
2. Utilize calculations and conversions to determine water flow, pressure, volume, velocity and force, and chemical dosage used in water distribution systems.
3. Utilize water maps and drawings to determine location, type, and characteristics of water distribution systems and its sources.
4. Explain pump cavitation, corrosion, cross-connection, air valves, head loss, and main flushing in relation to water, wastewater, collection, distribution, and treatment.
5. Identify regulations and operate the plant accordingly.
6. Be able to pass the California licensure examination in the water industry.

Core Requirements: (21 Units)

Course	Units
WTRM 201 Introduction to Water, Wastewater Technology	3.00
WTRM 202 Beginning Water, Wastewater, Distribution Math	3.00
WTRM 203 Introduction to Electrical and Instrumentation Processes	3.00
WTRM 204 Motors and Pumps, Operation and Maintenance	3.00
WTRM 205 Water Distribution 1	3.00
WTRM 206 Beginning Water Treatment Plant Operation	3.00
WTRM 232 Advanced Water Distribution	3.00

LIST A: (3 Units - Select one of the following)

Course	Units
WTRM 207 Beginning Wastewater Treatment Operations	3.00
WTRM 209 Advanced Water Treatment Plant Operation	3.00
WTRM 210 Advanced Water/Wastewater/Distribution Math	3.00
WTRM 211 Advanced Wastewater Treatment Plant Operation	3.00
WTRM 212 Applied Hydraulics	3.00
WTRM 213 Beginning Wastewater Collection	3.00
WTRM 214 Laboratory Analysis for Water, Wastewater	3.00
WTRM 215 Leadership and Supervision in the Water Industry	3.00

LIST B: (4 - 8 Units - Select two of the following)

Course	Units
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WTRM 216 Advanced Wastewater Collections	3.00
WTRM 217 Water Use Efficiency Practitioner	3.00
WTRM 218 Introduction to Occupational Health and Safety	3.00
WTRM 221 Mechanical Maintenance	3.00
WTRM 233 Water Conservation	3.00
WTRM 234 Industrial Wastewater and Stormwater Management	4.00
WTRM 235 Pollution Prevention	3.00
WTRM 290 Occupational Work Experience/Water/Wastewater Technology	1.00 - 4.00

General Education Requirements: (35 - 39)

Course

Total 28 – 32 Units

Water Distribution Technology Education

Certificate of Achievement

Modification:

Per the Articulation Officers research and recommendation, all WTRM courses were renumbered from 100's to 200's. Therefore the WTRM programs degrees and certificates needed to be updated to include the renumbered courses. In addition, the Program Learning Outcomes have been reviewed and reduced to a more meaningful and measurable number.

Description

The Water Distribution Technology Education program is designed to teach students the methods, processes, technology and current practices involved in operating and maintaining modern, complex water distribution systems. Students who satisfactorily complete the required courses for this certificate will qualify to take the CDPH Grade D-1 through D-5 Water Distribution Operator examinations required to obtain certification and employment with a water district.

Upon successful completion of this program, students will be able to:

1. Compare and contrast the different types of water distribution systems, including its components: pumps, motors, meters, valves, pipes, and instrumentation and controls.
2. Utilize calculations and conversions to determine water flow, pressure, volume, velocity and force, and chemical dosage used in water distribution systems.
3. Utilize water maps and drawings to determine location, type, and characteristics of water distribution systems and its sources.
4. Explain pump cavitation, corrosion, cross-connection, air valves, head loss, and main flushing in relation to water, wastewater, collection, distribution, and treatment.
5. Identify regulations and operate the plant accordingly.
6. Be able to pass the California licensure examination in the water industry.

Required Core:

Course	Units
WTRM 201 Introduction to Water, Wastewater Technology	3.00
WTRM 202 Beginning Water, Wastewater, Distribution Math	3.00

WTRM 203 Introduction to Electrical and Instrumentation Processes	3.00
WTRM 204 Motors and Pumps, Operation and Maintenance	3.00
WTRM 205 Water Distribution 1	3.00
WTRM 206 Beginning Water Treatment Plant Operation	3.00
WTRM 232 Advanced Water Distribution	3.00
	Total Units: 21

Water Resource Management

Modification:

Per the Articulation Officers research and recommendation, all WTRM courses were renumbered from 100's to 200's. Therefore the WTRM programs degrees and certificates needed to be updated to include the renumbered courses. In addition, the Program Learning Outcomes have been reviewed and reduced to a more meaningful and measurable number. Also adding WTRM 233 as an additional elective choice under the "LIST B: Electives - Select two of the following". It is a new course to the program and is appropriate as an elective under this WTRM degree.

Description

The Water Resources Management degree program is designed to prepare students for employment by municipal drinking water and wastewater treatment departments or industrial treatment facilities. Careers in water/wastewater technology generally involve the administration, operation and maintenance of both drinking water and wastewater treatment facilities as well as distribution and collection systems. Gavilan's Water Resources Management Program provides educational courses that prepare students for careers in Water Resources Management. Courses prepare students for certification examinations administered by the State of California as well as those administered by professional associations within the water and wastewater industry. Current instructors are experienced water and wastewater professionals, expert and up-to-date in best-of-breed industry practices. Classes are built around practical examples of real-world scenarios, demonstrations, and field trips whenever possible to maximize understanding of subject matter. Internships are available, too, through Cooperative Work Experience.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Follow safe practices while applying chemical, microbiological, and mechanical knowledge and skills to maintain proper water and wastewater plant operations.
2. Apply math and hydraulics skills in proper water and wastewater plant, collection system, and distribution system operations.
3. Identify regulations and operate the plant accordingly.
4. Be able to pass the California licensure examination in the water industry.

Core Requirements

Course	Units
WTRM 201 Introduction to Water, Wastewater Technology	3.00

WTRM 202 Beginning Water, Wastewater, Distribution Math	3.00
WTRM 203 Introduction to Electrical and Instrumentation Processes	3.00
WTRM 205 Water Distribution 1	3.00
WTRM 206 Beginning Water Treatment Plant Operation	3.00
WTRM 207 Beginning Wastewater Treatment Operations	3.00

LIST A: Electives - Select one of the following

Course	Units
WTRM 208 Water Distribution 2	3.00
WTRM 209 Advanced Water Treatment Plant Operation	3.00
WTRM 210 Advanced Water/Wastewater/Distribution Math	3.00
WTRM 211 Advanced Wastewater Treatment Plant Operation	3.00
WTRM 212 Applied Hydraulics	3.00
WTRM 213 Beginning Wastewater Collection	3.00
WTRM 214 Laboratory Analysis for Water, Wastewater	3.00
WTRM 215 Leadership and Supervision in the Water Industry	3.00

LIST B: Electives - Select two of the following

Course	Units
WTRM 204 Motors and Pumps, Operation and Maintenance	3.00
WTRM 216 Advanced Wastewater Collections	3.00
WTRM 217 Water Use Efficiency Practitioner	3.00
WTRM 218 Introduction to Occupational Health and Safety	3.00
WTRM 219 Industrial Wastewater Management and Treatment	3.00
WTRM 220 Pollution Prevention and Storm Water Management	3.00
WTRM 221 Mechanical Maintenance	3.00
WTRM 233 Water Conservation	3.00
WTRM 290 Occupational Work Experience/Water/Wastewater Technology	1.00 - 4.00

General Education requirements (35 – 39)

Total: 25 -28 Units

NOTE: A course may be used to satisfy both general education and major courses. See "Double Counting Rule."

Water Resource Management

Modification:

Per the Articulation Officers research and recommendation, all WTRM courses were renumbered from 100's to 200's. Therefore the WTRM programs degrees and certificates needed to be updated to include the renumbered courses. In addition, the Program Learning Outcomes have been reviewed and reduced to a more meaningful and measurable number.

Certificate of Achievement

Description

The Water Resources Management degree program is designed to prepare students for employment by municipal drinking water and wastewater treatment departments or industrial treatment facilities. Careers in water/wastewater technology generally involve the administration, operation and maintenance of both drinking water and wastewater treatment facilities as well as distribution and collection systems. Gavilan's Water Resources Management Program provides educational courses that prepare students for careers in Water Resources Management. Courses prepare students for certification examinations administered by the State of California as well as those administered by professional associations within the water and wastewater industry. Current instructors are experienced water and wastewater professionals, expert and up-to-date in best-of-breed industry practices. Classes are built around practical examples of real-world scenarios, demonstrations, and field trips whenever possible to maximize understanding of subject matter. Internships are available, too, through Cooperative Work Experience.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Follow safe practices while applying chemical, microbiological, and mechanical knowledge and skills to maintain proper water and wastewater plant operations.
2. Apply math and hydraulics skills in proper water and wastewater plant, collection system, and distribution system operations.
3. Identify regulations and operate the plant accordingly.
4. Be able to pass the California licensure examination in the water industry.

Requirements

Course	Units
WTRM 201 Introduction to Water, Wastewater Technology	3.00
WTRM 202 Beginning Water, Wastewater, Distribution Math	3.00
WTRM 203 Introduction to Electrical and Instrumentation Processes	3.00
WTRM 205 Water Distribution 1	3.00
WTRM 206 Beginning Water Treatment Plant Operation	3.00
WTRM 207 Beginning Wastewater Treatment Operations	3.00
	Total 18 Units

Water Technology Education

AA Degree

Modification:

Per the Articulation Officers research and recommendation, all WTRM courses were renumbered from 100's to 200's. Therefore the WTRM programs degrees and certificates needed to be updated to include the renumbered courses. In addition, the Program Learning Outcomes have been reviewed and reduced to a more meaningful and measurable number. Also adding WTRM 217 as an additional elective choice under List B. This is an appropriate course option for this degree and the program is trying to provide opportunities for the student to be able to complete their requirements.

Description

The Water Technology Education program is designed to teach students the key steps, processes, and current technology involved in operating modern water treatment plants. Students who satisfactorily complete the required courses in this degree will qualify to take the California Department of Public Health (CDPH) Grade T-1 and T-2 Water Treatment Plant Operator examinations required for certification and employment at water treatment plants.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Identify in detail characteristics and sources of ground water and surface water supplies and explain the effects on quality of geological formations, stratifications, and watershed management.
2. Compare and contrast the basic principles of each water treatment process and list them in the order performed.
3. Perform basic mathematical calculations and conversions relating to water flow, pressure, volume, velocity, chemical dosage, and hydraulic and organic loading.
4. Identify regulations and operate the plant accordingly.
5. Be able to pass the California licensure examination in the water industry.

Required Core: (21 Units)

Course	Units
WTRM 201 Introduction to Water, Wastewater Technology	3.00
WTRM 202 Beginning Water, Wastewater, Distribution Math	3.00
WTRM 203 Introduction to Electrical and Instrumentation Processes	3.00
WTRM 204 Motors and Pumps, Operation and Maintenance	3.00
WTRM 205 Water Distribution 1	3.00
WTRM 206 Beginning Water Treatment Plant Operation	3.00
WTRM 209 Advanced Water Treatment Plant Operation	3.00

Restricted Electives/ LIST A: (3 Units - Select one of the following)

Course	Units
WTRM 207 Beginning Wastewater Treatment Operations	3.00
WTRM 210 Advanced Water/Wastewater/Distribution Math	3.00
WTRM 211 Advanced Wastewater Treatment Plant Operation	3.00
WTRM 212 Applied Hydraulics	3.00
WTRM 213 Beginning Wastewater Collection	3.00
WTRM 214 Laboratory Analysis for Water, Wastewater	3.00
WTRM 215 Leadership and Supervision in the Water Industry	3.00
WTRM 232 Advanced Water Distribution	3.00

LIST B: (4 - 8 Units - Select two of the following)

Course	Units
WTRM 216 Advanced Wastewater Collections	3.00
WTRM 217 Water Use Efficiency Practitioner	3.00
WTRM 218 Introduction to Occupational Health and Safety	3.00
WTRM 221 Mechanical Maintenance	3.00
WTRM 233 Water Conservation	3.00
WTRM 234 Industrial Wastewater and Stormwater Management	4.00
WTRM 235 Pollution Prevention	3.00
WTRM 290 Occupational Work Experience/Water/Wastewater Technology	1.00 - 4.00
General Education Requirements (35 - 39)	

Total Units: 28 - 32

Water Technology Education

Certificate of Achievement

Modification:

Per the Articulation Officers research and recommendation, all WTRM courses were renumbered from 100's to 200's. Therefore the WTRM programs degrees and certificates needed to be updated to include the renumbered courses. In addition, the Program Learning Outcomes have been reviewed and reduced to a more meaningful and measurable number.

Description

The Water Technology Education program is designed to teach students the key steps, processes, and current technology involved in operating modern water treatment plants. Students who satisfactorily complete the required courses in this certificate will qualify to take the California Department of Public Health (CDPH) Grade T-1 and T-2 Water Treatment Plant Operator examinations required for certification and employment at water treatment plants.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Identify in detail characteristics and sources of ground water and surface water supplies and explain the effects on quality of geological formations, stratifications, and watershed management.
2. Compare and contrast the basic principles of each water treatment process and list them in the order performed.
3. Perform basic mathematical calculations and conversions relating to water flow, pressure, volume, velocity, chemical dosage, and hydraulic and organic loading.
4. Identify regulations and operate the plant accordingly.
5. Be able to pass the California licensure examination in the water industry.

Required Core: (21 Units)

Course	Units
WTRM 201 Introduction to Water, Wastewater Technology	3.00
WTRM 202 Beginning Water, Wastewater, Distribution Math	3.00
WTRM 203 Introduction to Electrical and Instrumentation Processes	3.00
WTRM 204 Motors and Pumps, Operation and Maintenance	3.00
WTRM 205 Water Distribution 1	3.00
WTRM 206 Beginning Water Treatment Plant Operation	3.00
WTRM 209 Advanced Water Treatment Plant Operation	3.00
	Total 21 Units

