SAN BERNARDINO COMMUNITY COLLEGE DISTRICT

TO: Board of Trustees

FROM: Bruce Baron, Chancellor

REVIEWED BY: Dr. Debra S. Daniels, President, SBVC

PREPARED BY: Dr. Larry Buckley, Vice President, Instruction SBVC

DATE: June 16, 2011

SUBJECT: Consideration of Approval of Curriculum - SBVC

RECOMMENDATION

It is recommended that the Board of Trustees approve the SBVC curriculum modifications.

OVERVIEW

The courses, certificates and degrees at SBVC are continually being revised and updated to reflect and meet student needs.

ANALYSIS

These courses, certificates and degrees have been approved by the Curriculum Committee of the Academic Senate and will be included in the 2012-2013 College Catalog.

BOARD IMPERATIVE

II. Learning Centered Institution for Student Access, Retention and Success

FINANCIAL IMPLICATIONS

None

SAN BERNARDINO VALLEY COLLEGE
SUBMITTED FOR BOARD OF TRUSTEE APPROVAL
June 16, 2011

NEW COURSES

Department: Diesel
Course ID: DIESEL 038
Course Title: Heavy-Duty Diesel Emissions
Units: 2
Lecture: 1.5 contact hour(s) per week
24 - 27 contact hours per semester
Laboratory: 1.5 contact hour(s) per week
24 - 27 contact hours per semester
Prerequisite: DIESEL 026x3
Catalog Description: This is an advanced course in heavy-duty diesel emissions with emphasis on exhaust aftertreatment and related equipment.
Schedule Description: This is an advanced course in heavy-duty diesel emissions with emphasis on exhaust aftertreatment and related equipment.
Effective Date: FA12
Stand-Alone Course: Approved
Rationale: This course will help the technicians get certified to repair and troubleshoot the heavy-duty diesel engine and equipment.

Department: English
Course ID: ENGL 222
Course Title: Independent Study in English
Units: 1 - 3
Prerequisite: None
Catalog Description: Students with previous course work in English may do assigned projects involving research and analysis of selected topics. This independent study is for students who are interested in furthering their knowledge of English. Prior to registration, a written contract must be prepared jointly by the instructor and the student.
Schedule Description: Students with previous course work in English may do assigned projects involving research and analysis of selected topics. Prior to registration, a written contract must be prepared jointly by the instructor and the student.
Effective Date: FA12
Rationale: The college and department must maintain flexibility in insuring transfer opportunities for our students despite challenging budget constraints.

MODIFY COURSES

COURSE ID	COURSE TITLE
ACAD 600Ex4	SUPERVISED TUTORING – LIBRARY, LEARNING RESOURCES AND COMMUNICATION MEDIA

Course Title: Supervised Tutoring – Library and Learning Support Services
Effective Date: SP12
Rationale: Division name changed to Library and Learning Support Services.

COURSE ID	COURSE TITLE
ARCH 145	HISTORY OF ARCHITECTURE: EARLY DESIGN TO GOTHIC

Course Title: History of Architecture: Early Design Through Gothic
Corequisite: ENGL 015 or eligibility for ENGL 101 or ENGL 101H as determined by the SBVC assessment process
Catalog Description: This course is a survey of Western architectural history from the early Egyptians through the Gothic period, including a comparative study of architecture and architects with emphasis on the people, locations, structures, materials, and methods of construction and additional influences on the built environment.
Schedule Description: This course is a survey of Western architectural history from the early Egyptians through the Gothic period, including a comparative study of architecture and architects with emphasis on the people, locations, structures, materials, and methods of construction and additional influences on the built environment.
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
BIOL 109	HISTORY OF LIFE

Prerequisites: ENGL 015 or eligibility for ENGL 101 as determined through the SBVC assessment process and MATH 942 or eligibility for MATH 952 as determined through the SBVC assessment process
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
BIOL 109H	HISTORY OF LIFE - **HONORS**

Prerequisites: ENGL 015 or eligibility for ENGL 101 as determined by the SBVC assessment process and MATH 942 or eligibility for MATH 952 as determined by the SBVC assessment process.
Effective Date: FA12
Rationale: Content Review

MODIFY COURSES

COURSE ID	COURSE TITLE
BUSAD 013	MARKETING PRINCIPLES

Catalog Description: This course covers the basic principles and methods of marketing as practiced by all successfully managed business firms. This course is management-oriented, covering demand analysis, forecasting, product development, price determination, distribution channels, material handling, advertising and personal selling.
Schedule Description: This course covers the marketing concepts with emphasis on marketing strategy. It includes a study of the customer, market institutions and functions.
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
BUSAD 015	SMALL BUSINESS MANAGEMENT / ENTREPRENEURSHIP

Catalog Description: This course is designed for business majors and non-business majors who desire a greater knowledge of the fundamentals specifically related to the opening and operation of a small business. The course is designed to provide a working knowledge of the pitfalls associated with small business operations and how to recognize, prevent and solve problems.
Schedule Description: This course is designed for business majors and non-business majors who desire a greater knowledge of the fundamentals specifically related to the opening and operation of a small business.
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
CULART 161	QUANTITY FOOD PREPARATION

Departmental Advisory: CULART 160
Catalog Description: This course details the basic principles, standards, procedures, and techniques necessary to prepare food for quantity production.
Schedule Description: This course details the basic principles, standards, procedures, and techniques necessary to prepare food for quantity production.
Effective Date: FA12
Rationale: Content Review

MODIFY COURSES

COURSE ID	COURSE TITLE
CULART 225	SANITATION AND SAFETY

Departmental Advisory: CULART 160
Catalog Description: This course focuses on the sanitation and safety issues involved with handling food through the food service process. Topics include the prevention of food borne illnesses; responsibilities of the food service manager and employees; the characteristics of a food-safe facility; food safety guidelines; and Hazard Analysis and Critical Control Point (HACCP) system and Serve Safe.
Schedule Description: This course focuses on the sanitation and safety issues involved with handling food through the food service process. Topics include the prevention of food borne illnesses; responsibilities of the food service manager and employees; the characteristics of a food-safe facility; food safety guidelines; and Hazard Analysis and Critical Control Point (HACCP) system and Serve Safe.
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
CULART 240	PROCUREMENT, PURCHASING AND SELECTION

Departmental Advisories: CULART 160 and CULART 235
Catalog Description: This course includes purchasing policies, specifications, procedures and controls and their implementation in the procurement of quantity foods, merchandise and supplies.
Schedule Description: This course includes purchasing policies, specifications, procedures and controls and their implementation in the procurement of quantity foods, merchandise and supplies.
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
ENGR 100	ENGINEERING CAREER EXPLORATION

Catalog Description: This course introduces students to the major fields of specialization within engineering and engineering technology professions. This course gives students a broad understanding of various career opportunities and the specialized demands and rewards of each field.
Schedule Description: This course introduces students to the major fields of specialization within engineering and engineering technology professions. This course gives students a broad understanding of various career opportunities and the specialized demands and rewards of each field.
Effective Date: FA12
Rationale: Content Review

MODIFY COURSES

COURSE ID	COURSE TITLE
ENGR 265	ENGINEERING MECHANICS - STATICS

Course Title: Engineering Mechanics
Catalog Description: This is a foundation course in engineering and a pre-requisite to many subsequent courses. Some of the topics covered are two and three dimensional equilibrium of particles and rigid bodies, analysis of frames, machines, trusses, non-coplanar force systems, and the principle of friction.
Schedule Description: This is a foundation course in engineering and a pre-requisite to many subsequent courses. Some of the topics covered are two and three dimensional equilibrium of particles and rigid bodies, analysis of frames, machines, trusses, non-coplanar force systems, and the principle of friction.
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
MATH 103	PLANE TRIGONOMETRY

Prerequisite: MATH 095 or eligibility for MATH 103 as determined through the SBVC assessment process
Departmental Advisory: MATH 093
Catalog Description: This course provides a study of trigonometric functions, identities, trigonometric equations, periodicity, graphs of trigonometric functions, inverse trigonometric functions, and the solutions of triangles.
Schedule Description: This course provides a study of trigonometric functions, identities, trigonometric equations, periodicity, graphs of trigonometric functions, inverse trigonometric functions, and the solutions of triangles.
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
MATH 151	PRECALCULUS

Prerequisites: MATH 102 and MATH 103 or eligibility for MATH 151 as determined through the SBVC assessment process
Catalog Description: This course provides foundational skills to facilitate success in calculus. The course includes polynomials and rational functions, exponential and logarithmic functions, systems of nonlinear equations and inequalities, parametric and polar equations, trigonometric functions, and limits.
Schedule Description: This course provides foundational skills to facilitate success in calculus. The course includes polynomials and rational functions, exponential and logarithmic functions, systems of nonlinear equations and inequalities, parametric and polar equations, trigonometric functions, and limits.
Effective Date: FA12
Rationale: Content Review

MODIFY COURSES

COURSE ID	COURSE TITLE
SPEECH 100	ELEMENTS OF PUBLIC SPEAKING

Course ID: COMMST 100
Departmental Advisory: ENGL 015 or eligibility for ENGL 101 or ENGL 101H as determined by the SBVC assessment process
Catalog Description: This course focuses on training in the application of the concepts, principles, and skills of effective public speaking. Concepts such as structure, adapting messages to culturally diverse audiences, research principles, and critical evaluation of evidence and arguments are explored. Delivery, listening, and feedback skills are also discussed and practiced in a variety of presentations. *(Formerly SPEECH 100)*
Schedule Description: This course focuses on training in the application of the concepts, principles, and skills of effective public speaking. Concepts such as structure, adapting messages to culturally diverse audiences, research principles, and critical evaluation of evidence and arguments are explored. Delivery, listening, and feedback skills are also discussed and practiced in a variety of presentations. *(Formerly SPEECH 100)*
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
SPEECH 100H	ELEMENTS OF PUBLIC SPEAKING - **HONORS**

Course ID: COMMST 100**H**
Departmental Advisory: or eligibility for ENGL 101 or ENGL 101H as determined by the SBVC assessment process ENGL 015
Catalog Description: This course focuses on training in the application of the concepts, principles, and skills of effective public speaking. Concepts such as structure, adapting messages to culturally diverse audiences, research principles, and critical evaluation of evidence and arguments are explored. Delivery, listening, and feedback skills are also discussed and practiced in a variety of presentations. **This course is intended for students in the Honors Program, but is open to all students who desire more challenging course work.** *(Formerly SPEECH 100**H**)*
Schedule Description: This course focuses on training in the application of the concepts, principles, and skills of effective public speaking. Concepts such as structure, adapting messages to culturally diverse audiences, research principles, and critical evaluation of evidence and arguments are explored. Delivery, listening, and feedback skills are also discussed and practiced in a variety of presentations. **This course is intended for students in the Honors Program, but is open to all students who desire more challenging course work.** *(Formerly SPEECH 100**H**)*
Effective Date: FA12
Rationale: Content Review

MODIFY COURSES

COURSE ID	COURSE TITLE
SPEECH 111	INTERPERSONAL COMMUNICATION

Course ID: COMMST 111
Departmental Advisory: ENGL 015 or eligibility for ENGL 101 or ENGL 101H as determined by the SBVC assessment process
Catalog Description: Interpersonal communication examines the dynamics of the communication process within the context of interpersonal relationships (those with friends, families, romantic partners, and co-workers). Influences of self-concept, perception, listening, verbal and non-verbal communication, and emotional expression are explored. Principles of relationship development, communication climate, self-disclosure, and conflict management are also discussed. Rhetorical principles are also practiced and faculty supervised/evaluated in a variety of ways. *(Formerly SPEECH 111)*
Schedule Description: Interpersonal communication examines the dynamics of the communication process within the context of interpersonal relationships (those with friends, families, romantic partners, and co-workers). *(Formerly SPEECH 111)*
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
SPEECH 125	CRITICAL THINKING THROUGH ARGUMENTATION AND DEBATE

Course ID: COMMST 125
Departmental Advisories: ENGL 015 or COMMST 100 and COMMST 100H or eligibility for ENGL 101 or ENGL 101H as determined by the SBVC assessment process
Catalog Description: This course is designed to provide an oral approach to critical thinking skills which includes individual and group debates. It also provides instruction in language, argument structure, types of reasoning, evaluation of evidence, fallacies in reasoning, and case development strategies. *(Formerly SPEECH 125)*
Schedule Description: This course is designed to provide an oral approach to critical thinking skills which includes individual and group debates. *(Formerly SPEECH 125)*
Effective Date: FA12
Rationale: Content Review

MODIFY COURSES

COURSE ID	COURSE TITLE
SPEECH 135	MASS MEDIA AND SOCIETY

Course ID: COMMST 135
Departmental Advisory: ENGL 015 or eligibility for ENGL 101 or ENGL 101H as determined by the SBVC assessment process
Catalog Description: This course explores the history, effects, and role of the mass media in the U.S. The major forms of mass communication are studied (television, radio, film, newspapers and magazines). There is also a focus on critical analysis of media messages, effects of media on individual and society, and theories of communication. Students move beyond being "consumers" of media to "analysts" of media. *(Formerly SPEECH 135)*
Schedule Description: This course explores the history, effects, and role of the mass media in the U.S. The major forms of mass communication are studied (television, radio, film, newspapers and magazines). There is also a focus on critical analysis of media messages, effects of media on individual and society, and theories of communication. *(Formerly SPEECH 135)*
Effective Date: FA12
Rationale: Content Review

COURSE ID	COURSE TITLE
SPEECH 174	INTERCULTURAL COMMUNICATION

Course ID: COMMST 174
Departmental Advisory: ENGL 015 or eligibility for ENGL 101 or ENGL 101H as determined by the SBVC assessment process
Catalog Description: This course focuses on the communication behaviors and values common to all cultures and ethnic groups and on the differences that insulate and divide people. Students will examine influences on the communication process, including aspects such as stereotyping, perception, prejudice, values and expectations. Students will learn to overcome the communication problems that can result when members of other cultures communicate by evaluating their own intercultural communication patterns and learning skills to increase their effectiveness. Students will also acquire a greater appreciation for others. *(Formerly SPEECH 174)*
Schedule Description: This course focuses on the communication behaviors and values common to all cultures and ethnic groups and on the differences that insulate and divide people. *(Formerly SPEECH 174)*
Effective Date: FA12
Rationale: Content Review

MODIFY COURSES

COURSE ID	COURSE TITLE
SPEECH 176	GENDER DIFFERENCES IN COMMUNICATION

Course ID: COMMST 176
Departmental Advisory: ENGL 015 or eligibility for ENGL 101 or ENGL 101H as determined by the SBVC assessment process ENGL 015
Catalog Description: This course explores the gender differences evident in communication. Students will examine the theories concerning gender differences, issues of gender in a variety of contexts (families, relationships, the workplace, the media, school), and the differences in the communication patterns resulting from gender. *(Formerly SPEECH 176)*
Schedule Description: This course explores the gender differences evident in communication. Students will examine the theories concerning gender differences, issues of gender in a variety of contexts (families, relationships, the workplace, the media, school), and the differences in the communication patterns resulting from gender. *(Formerly SPEECH 176)*
Effective Date: FA12
Rationale: Content Review

DELETE COURSES

SPEECH 130
SPEECH 910

Effective Date: FA12
Rationale: These courses are no longer offered.

DISTRIBUTED EDUCATION

ARCH 145	**100% ONLINE**
BUSAD 013	**100% ONLINE**
BUSAD 015	**100% ONLINE**
BUSAD 039	**100% ONLINE**
BUSAD 100	**100% ONLINE**
COMMST 100	**HYBRID**
COMMST 100H	**HYBRID**
COMMST 135	**100% ONLINE**
COMMST 174	**100% ONLINE**
COMMST 176	**100% ONLINE**
MATH 103	**100% ONLINE**
MATH 151	**100% ONLINE**

Effective Date: FA12
Rationale: One of the planning themes of San Bernardino Valley College (SBVC) is access. For career technical courses, the issue of scheduling is crucial. Students working the night shift can only take class in the morning while those working traditional day schedules can only take evening classes. Given these variables and difficult schedules, students need the flexibility of time that an online class affords. An asynchronous online class allows students to study when their schedules allow and where they have the space and materials to do so effectively. The online delivery method of these courses supports the mission of SBVC by providing access to education to a diverse community of learners who find themselves in a community with complicated lives and difficult and demanding schedules and responsibilities.

Computer Numerical Control: CAD/CAM A.S. Degree Major

To graduate with a specialization in Computer Numerical Control: CAD/CAM, students must complete the following required courses for the certificate plus the general breadth requirements for the Associate of Science Degree (minimum total = 60 units).

REQUIRED MACHINE TECHNOLOGY CORE COURSES:		**Units**
MACH 021	Machine Shop I	4
MACH 022	Machine Shop II	4
MACH 090	Mechanical Print Reading, Geometric Dimensioning and Tolerancing	3
MACH 120	Machine Shop Theory	2
MACH 123	Machine Shop III	4
MACH 124	Machine Shop IV	4

REQUIRED SPECIALIZED COURSES:		**Units**
MACH 070	Computer Numerical Control Machining I	3
MACH 071	Computer Numerical Control Machining II	3
MACH 072	Computer Aided Design and Manufacturing I	3
MACH 073	Computer Aided Design and Manufacturing II	3
MACH 074	Set-up and Operation of CNC Machines	3
MACH 129	Manufacturing Processes	3

Total Units **39**

Effective Date: FA12
Rationale: Content Review

Machinist Standard A.S. Degree Major

To graduate with a specialization in Machinist Standard, students must complete the following required courses for the certificate plus the general breadth requirements for the Associate of Science Degree (minimum total = 60 units).

REQUIRED MACHINE TECHNOLOGY CORE COURSES:		**Units**
MACH 021	Machine Shop I	4
MACH 022	Machine Shop II	4
MACH 090	Mechanical Print Reading, Geometric Dimensioning and Tolerancing	3
MACH 120	Machine Shop Theory	2
MACH 123	Machine Shop III	4
MACH 124	Machine Shop IV	4

REQUIRED SPECIALIZED COURSES:		**Units**
MACH 070	Computer Numerical Control Machining I	3
MACH 129	Manufacturing Processes	3

Total Units **27**

Effective Date: FA12
Rationale: Content Review

Tool and Die A.S. Degree Major

To graduate with a specialization in Tool and Die, students must complete the following required courses for the certificate plus the general breadth requirements for the Associate of Science Degree (minimum total = 60 units).

REQUIRED MACHINE TECHNOLOGY CORE COURSES:		**Units**
MACH 021	Machine Shop I	4
MACH 022	Machine Shop II	4
MACH 090	Mechanical Print Reading, Geometric Dimensioning and Tolerancing	3
MACH 120	Machine Shop Theory	2
MACH 123	Machine Shop III	4
MACH 124	Machine Shop IV	4

REQUIRED SPECIALIZED COURSES:		**Units**
MACH 061	Jig and Fixture Machining	4
MACH 129	Manufacturing Processes	3
MACH 160	Tool and Die	4

Total Units **32**

Effective Date: FA12
Rationale: Content Review

Water Technology A.S. Degree Major

The Water Supply Technology Program is designed to serve students who are employed or interested in employment in water/wastewater occupations. The program provides technical classes in water distribution, water treatment, wastewater collection, and wastewater treatment. The courses prepare students to upgrade their skills and/or prepare them for licensing examinations and certifications from the California Department of Public Health, the California State Water Resource Control Board, the American Water Works Association, and the California Water Environment Association.

The certificate program is designed to prepare students for entry level jobs in water treatment, water distribution, and wastewater reclamation industries. The associate of science degree graduates often work in city, county, or state agencies in positions such as plant operator, engineering technician, surface water manager, environmental laboratory coordinator, and industrial pre-treatment coordinator.

To graduate with a specialization in Water Technology, students must complete the following required courses in addition to the general breadth requirements for Associate of Science degree (total = 60 units).

Required Courses		**Units**
CHEM 101	Introductory Chemistry	4
	or	
CHEM 110	Environmental and Consumer Chemistry	3

18 units from the following Water Supply Technology courses		**Units**
WST 031	Water Use Efficiency Practitioner I	3
WST 045	Backflow Prevention Devices	3
WST 048	Cross-Connection Control	3
WST 061	Water Distribution I	3
WST 062	Water Distribution II	3
WST 063	Water Distribution III	3
WST 071	Water Treatment I	3
WST 072	Water Treatment II	3
WST 073	Water Treatment III	3
WST 074	Water/Wastewater Analysis	2
WST 081	Wastewater Collection I	3
WST 082	Wastewater Collection II	3
WST 091	Wastewater Treatment I	3
WST 092	Wastewater Treatment II	3
WST 093	Wastewater Treatment III	3

One course from this list of RECOMMENDED courses		**Units**
CIT 101	Introduction to Computer Literacy	3
GIS 130	Introduction to Geographic Information Systems (GIS)	3

Total Units **24 - 25**

Effective Date: FA12
Rationale: The degree has been updated to give students more flexibility to fulfill the graduation requirements in a timely manner.

Curriculum Meetings: 05-02-11; 05-16-11
Conjoint Meeting: 05-23-11
Board of Trustees Meeting: June 16, 2011

DELETE DEGREE

MACHINIST TECHNOLOGY

Effective Date: FA12
Rationale: The same core of courses is required in several of the certificates within the Machine Technology program. Students may earn a degree upon completion of the certificate requirements and their general education courses.

NEW CERTIFICATES

California State University General Education-Breadth Certificate

Students must complete a minimum of 39 units total as specified in Areas A, B, C, D, and E of the CSU GE-Breadth requirements as stated in the SBVC catalog. Students must receive full certification and all courses used for this certificate must be grades of C or better.

Total Units **39**

Effective Date: FA12
Rationale: The CCC Chancellor's Office has encouraged community colleges to develop a certificate of completion for CSU GE-Breadth as an option for students who want to transfer, but do not desire an associate degree. Offering a certificate of completion for CSU GE-Breadth helps track students who are transfer ready.

Intersegmental General Education Transfer Curriculum (IGETC) Certificate

Students must complete a minimum of 34 units as specified in the SBVC Intersegmental General Education Transfer Curriculum (IGETC). Students must complete all of IGETC in Areas 1 through 5 for either the UC or CSU. All courses must be completed with grades of C or better.

Total Units **34**

Effective Date: FA12
Rationale: The CCC Chancellor's Office has encouraged community colleges to develop a certificate of completion for the IGETC as an option for students who want to transfer, but do not desire an associate degree. Offering a certificate of completion for the IGETC helps track students who are transfer ready.

Basic Machine Operator Certificate

Students working for certificates must have a basic knowledge of arithmetic, reading and writing in order to learn and work in the occupations they select. This certificate is designed to prepare students with basic entry-level machine operator skills, safety knowledge, theory, and quality control skills in manufacturing processes. Students obtaining this certificate will qualify for the first level certification in National Industry Metal Skills (NIMS).

REQUIRED COURSES:		**Units**
MACH 021	Machine Shop I	4
MACH 075	Introduction to Computer Aided Design/SolidWorks	3
MACH 090	Mechanical Print Reading, Geometric Dimensioning and Tolerancing	3
MACH 120	Machine Shop Theory	2
Total Units		**12**

Effective Date: FA12
Rationale: Content Review

Basic Operation Computerized Numerical Control (CNC) Certificate

Students working for certificates must have a basic knowledge of arithmetic, reading and writing in order to learn and work in the occupations they select. This certificate is designed to provide entry-level skills to operate a Computer Numerical Control (CNC) lathe or milling type machine tool.

REQUIRED COURSES:		**Units**
MACH 021	Machine Shop I	4
MACH 070	Computer Numerical Control Machining I	3
MACH 074	Set-up and Operation of CNC Machines	3
MACH 075	Introduction to Computer Aided Design/SolidWorks	3
MACH 090	Mechanical Print Reading, Geometric Dimensioning and Tolerancing	3
Total Units		**16**

Effective Date: FA12
Rationale: Content Review

Computer Numerical Control: CAD/CAM Certificate

Students working for certificates must have a basic knowledge of arithmetic, reading and writing in order to learn and work in the occupations they select. This certificate is designed to prepare students for entry-level employment as production machinists working with complex Computer Numerical Control (CNC) cutting machines.

REQUIRED MACHINE TECHNOLOGY CORE COURSES:		**Units**
MACH 021	Machine Shop I	4
MACH 022	Machine Shop II	4
MACH 090	Mechanical Print Reading, Geometric Dimensioning and Tolerancing	3
MACH 120	Machine Shop Theory	2
MACH 123	Machine Shop III	4
MACH 124	Machine Shop IV	4
TECALC 087	Technical Calculations	4

REQUIRED SPECIALIZED COURSES:		**Units**
MACH 070	Computer Numerical Control Machining I	3
MACH 071	Computer Numerical Control Machining II	3
MACH 072	Computer Aided Design and Manufacturing I	3
MACH 073	Computer Aided Design and Manufacturing II	3
MACH 074	Set-up and Operation of CNC Machines	3
MACH 129	Manufacturing Processes	3

Total Units **43**

Effective Date: FA12
Rationale: Content Review

Machine Technology Certificate

This certificate is designed to prepare students for entry-level employment in manufacturing using machine tools such as lathes, milling machines, and spindles to produce precision metal parts.

REQUIRED COURSES:		**Units**
MACH 021	Machine Shop I	4
MACH 022	Machine Shop II	4
MACH 090	Mechanical Print Reading, Geometric Dimensioning and Tolerancing	3
MACH 120	Machine Shop Theory	2
MACH 123	Machine Shop III	4
MACH 124	Machine Shop IV	4
TECALC 087	Technical Calculations	4
Total Units		**25**

Effective Date: FA12
Rationale: Content Review

Machinist Standard Certificate

This certificate is designed to prepare students for entry-level employment in manufacturing producing precision metal parts using machine tools such as lathes, milling machines, and spindles, or in the maintenance and manufacture of new parts for existing machinery.

REQUIRED MACHINE TECHNOLOGY CORE COURSES:		**Units**
MACH 021	Machine Shop I	4
MACH 022	Machine Shop II	4
MACH 090	Mechanical Print Reading, Geometric Dimensioning and Tolerancing	3
MACH 120	Machine Shop Theory	2
MACH 123	Machine Shop III	4
MACH 124	Machine Shop IV	4
TECALC 087	Technical Calculations	4

REQUIRED SPECIALIZED COURSES:		**Units**
MACH 070	Computer Numerical Control Machining I	3
MACH 129	Manufacturing Processes	3
Total Units		**31**

Effective Date: FA12
Rationale: Content Review
Curriculum Meetings: 05-02-11; 05-16-11
Conjoint Meeting: 05-23-11
Board of Trustees Meeting: June 16, 2011

Tool and Die Certificate

This certificate is designed to prepare students for entry-level employment in producing tools, dies, and special guiding and holding devices that enable machines to manufacture a variety of products used daily - from clothing and furniture to heavy equipment and parts for aircraft.

REQUIRED MACHINE TECHNOLOGY CORE COURSES:		**Units**
MACH 021	Machine Shop I	4
MACH 022	Machine Shop II	4
MACH 090	Mechanical Print Reading, Geometric Dimensioning and Tolerancing	3
MACH 120	Machine Shop Theory	2
MACH 123	Machine Shop III	4
MACH 124	Machine Shop IV	4
TECALC 087	Technical Calculations	4

REQUIRED SPECIALIZED COURSES:		**Units**
MACH 061	Jig and Fixture Machining	4
MACH 129	Manufacturing Processes	3
MACH 160	Tool and Die	4

Total Units **36**

Effective Date: FA12
Rationale: Content Review

Curriculum Meetings: 05-02-11; 05-16-11
Conjoint Meeting: 05-23-11
Board of Trustees Meeting: June 16, 2011

Water Supply Technology Certificate

This certificate is designed to prepare students with the necessary knowledge and skills to obtain entry-level employment in the water supply technology field. [Note: the Water Supply Technology Certificate is not equivalent to the State License in Water Distribution, Water Treatment or Wastewater Treatment]. Work Experience course, WST 098, is highly recommended for students not currently employed in the field.

REQUIRED COURSES:		**Units**
CHEM 101	Introductory Chemistry	4
	or	
CHEM 110	Environmental and Consumer Chemistry	3
CIT 031	Business English	3
	or	
ENGL 015	Preparation for College Writing	4
	or	
Eligibility for ENG 101 as determined by the SBVC assessment process		
WST 052	Water Technology Math	3
	or	
WST 052A	Water Technology Math I	1
	and	
WST 052B	Water Technology Math II	1
	and	
WST 052C	Water Technology Math III	1
	or	
Eligibility for MATH 952 as determined by the SBVC assessment process		

18 units from the following Water Supply Technology Courses:		**Units**
WST 031	Water Use Efficiency Practitioner I	3
WST 045	Backflow Prevention Devices	3
WST 048	Cross-Connection Control	3
WST 061	Water Distribution I	3
WST 062	Water Distribution II	3
WST 063	Water Distribution III	3
WST 071	Water Treatment I	3
WST 072	Water Treatment II	3
WST 073	Water Treatment III	3
WST 074	Water/Wastewater Analysis	2
WST 081	Wastewater Collection I	3
WST 082	Wastewater Collection II	3
WST 091	Wastewater Treatment I	3
WST 092	Wastewater Treatment II	3
WST 093	Wastewater Treatment III	3

One course from this list of RECOMMENDED COURSES:		**Units**
CIT 101	Introduction to Computer Literacy	3
GIS 098	GIS Work Experience	1 - 4
WST 098	Water Supply Technology Work Experience	1 - 4

Total Units **22 - 33**

Effective Date: FA12

Rationale: The certificate has been updated to give students more flexibility to fulfill the graduation requirements in a timely manner.

Curriculum Meetings: 05-02-11; 05-16-11

Conjoint Meeting: 05-23-11

Board of Trustees Meeting: June 16, 2011