



# CATALOG ADDENDUM

## Fall 2009

Full and most current listing is found at  
[www.btc.ctc.edu](http://www.btc.ctc.edu)

**MISSION:** Bellingham Technical College delivers superior professional technical education for today's needs and tomorrow's opportunities.

**VISION:** Bellingham Technical College will be a recognized leader in providing innovative and effective technical education, creating options for career success, and developing a competitive workforce.

# 1

## ABOUT OUR COLLEGE

### **BTC History**

Bellingham Technical College began in 1957, serving Whatcom County adults as Bellingham Vocational Technical Institute and was operated by Bellingham School District. In 1991, through State legislative action, the institution was designated a member of the Washington State Community and Technical College system as Bellingham Technical College (BTC). The College is located in a district of 2,210 square miles with a population of over 174,000. The majority of students are local, with a growing number moving to the area to enroll at BTC.

### **About our Students**

During the 2008–09 academic year, the College served over 4,000 students per quarter with 2,344 fulltime enrollments (FTEs). Eighty-one percent of the FTEs were professional technical, ten percent transfer, ten percent adult basic education, and one percent community service. Of the student population, 44% are male, 56% female; 20% are students of color (only 12% of the service district are people of color); and the average age is 34 years.

### **Accreditation Process**

Bellingham Technical College is accredited by Northwest Commission on Colleges and Universities, 8060 165<sup>th</sup> Avenue N.E., Suite 100, Redmond, Washington 98502-3981. The Commission is an institutional accrediting body recognized by the Council for Higher Education Accreditation and the U.S. Department of Education.

In addition to institutional accreditation, many of BTC's programs have national certification or accreditation. These are highlighted in the program descriptions and include Dental Assisting, Culinary Arts, EMT-Paramedic, and Automotive Technology, Diesel Technology, and Surgery Technology.

### **Advisory Committees**

The degree and certificate programs at Bellingham Technical College rely on the involvement and support of over 300 business and industry employers and employees from the community. Advice and direction offered by experts in the working world ensure that students are acquiring the knowledge and skills that are in demand in the workforce.

An advisory committee representing each specific professional technical field meets regularly with the faculty of the same instructional area on matters of curriculum review and development, facilities and

equipment, guidance and career advisement, employment opportunities and placement, plus public relations and promotional activities.

### **Drug Free Workplace**

BTC intends to promote a drug free, healthful, safe and secure work environment. The unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in or on property owned or controlled by Bellingham Technical College. The use of any unlawful controlled substance while in or on property owned or controlled by BTC is prohibited. No employee will report to work while under the influence of any unlawful controlled substance while in or on property owned or controlled by BTC is prohibited. No employee will report to work while under the influence of any unlawful controlled substance. A controlled substance is defined by RCW 69.50.201 through RCW 69.50.214 or pursuant to Title 21 USC Section 821 (Schedules I-IV), as now enacted or subsequently amended. Violation of this policy by any employee may result in a referral for mandatory evaluation or treatment for a substance abuse disorder. Disciplinary action up to and including dismissal from employment may be imposed.

BTC recognizes drug dependency to be an illness and major health problem. The institution also classifies drug usage and abuse as a potential safety and security problem. Employees needing assistance in dealing with such problems are strongly encouraged to utilize the Employee Assistance Program provided by health insurance plans when appropriate.

### **Equal Opportunity Statement**

BTC provides equal opportunity in education and employment and does not discriminate on the basis of race, ethnicity, creed, color, sex, national origin, age, marital status, religious preference, the presence of any sensory, mental, or physical disability, reliance on public assistance, sexual orientation, status as a disabled person or Vietnam-era veteran, or political opinions or affiliations. The College complies with all Washington State antidiscrimination laws (RCW 49.60) and the following federal laws relating to equal opportunity. Title VI and VII of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA). Questions regarding Title IX, Section 504, equal opportunity, affirmative action, or the ADA should be directed to Human Resources, Building A Room 2, 360.752.8354 or 752.8515/TTY.

# 2

## GETTING STARTED

### ENROLLMENT SERVICES

#### ADMISSION & ENROLLMENT

Program admission is required for degree/certificate-seeking students in all programs except Bookkeeping Assistant, Business & Supervision Management, Child Development, Clerical Assistant, Construction Management, Customer Service Management, Human Resource Management, Hypnotherapy, Leadership Management, Medical Coding, Medical Insurance Billing, Nursing Assistant, Paraeducator, Personal Fitness Trainer, Project Management, Residential Home Inspection, and Retail Management. Students seeking enrollment in these programs at Bellingham Technical College should utilize the Course Registration Procedure

In all other programs, students must apply for program admission and register in the degree/certificate program. Students may register for full-time or part-time based on personal preference, availability of space, and/or specific program offerings. Most courses within the program will be offered at various times throughout the program as scheduled by the instructor. In some programs, specific courses required for a degree/certificate may only be offered in certain quarters. Students should consult a BTC counselor, advisor, and/or faculty advisor to assist in determining the best schedule option to meet their needs.

Full-time students enroll in a minimum of 12 credits; part-time students enroll in a minimum of 6 credits. Full-time students generally attend class six hours per day, five days per week. Specific program information is defined in the sequence & schedule section on the program pages of this catalog.

### ENROLLMENT SERVICES

#### PROGRAM ADMISSION PROCEDURE

New students may be admitted into degree/certificate programs at the beginning of each quarter. Some programs have established entry dates or multiple start dates throughout the year.

Applications for program admission are accepted at any time. Applicants seeking program admission are encouraged to meet with an advisor or counselor to discuss specific plans prior to completing the application process. To meet with an advisor and receive program & schedule information, contact the Admissions & Advising Office at 360.752.8345. To meet with a counselor if you need assistance deciding on a program, contact the Counseling and Career Center at 360.752.8450.

1. Complete the Degree/Certificate Program Admissions Application (page 128). The application will be kept on file for a period of one year beyond the date of application. After that time, applicants must reapply. Application materials can be obtained through Admissions & Advising at 360.752.8345.
2. Take the basic academic skills assessment (Accuplacer test), or equivalent assessment test, and achieve required scores for the specific program or college coursework as defined below. If the placement scores are below the level identified for the specific program, the student will meet with an advisor to identify an individual plan of study. Appointments for the Accuplacer tests can be made through Admissions & Advising at 360.752.8345.
  - a) An applicant seeking program admission, who has completed a minimum of three (3) credits for a course in English or mathematics with a "C" (2.0) grade or above, which at that college is deemed a prerequisite for a course equivalent to the BTC course in which the student wishes to place, may have the Accuplacer assessment requirement waived upon evaluation of an official transcript from a regionally accredited college or university and completion of the Accuplacer Waiver Request form. Requests for evaluation of transcripts for Accuplacer waiver can be made to the Admissions & Advising Office.

- b) Applicants who have taken college basic skills assessments (i.e. ASSET, COMPASS, SAT, etc.) at other accredited colleges or universities may request evaluation of the official scores for equivalency to the Accuplacer. Requests for basic skills assessment equivalency may be made to Admissions & Advising.
  - c) Certain programs require higher placement in general education requirements in reading and mathematics.
    - Students interested in programs that require English Composition (ENGL 101), such as Practical Nursing, must test into the course or complete preparatory coursework such as Fundamentals of Standard Written English (ENGL 092) or Oral and Written Communications (COM 170), prior acceptance.
    - Students interested in programs that require Precalculus I (MATH 141) such as Civil and Mechanical Engineering, Process Technology, Instrumentation, Electronics, Electro-Mechanical, and Surveying & Mapping, or Math in Society (MATH 107), must test into Elementary algebra or Intermediate Algebra at a minimum for acceptance. Students are strongly encouraged to take any necessary preparatory math coursework such as Elementary Algebra (MATH 098) or Intermediate Algebra (MATH 099) prior to beginning their program sequence.
3. Some programs have additional admissions requirements, which may include but are not limited to:
- Criminal background check
  - Prerequisite course requirements
  - Evidence of high school completion or equivalent
- Please view program description pages for additional details.

Applicants seeking advanced placement admission should follow the procedures listed on page 78.

## **ENROLLMENT SERVICES INTERNATIONAL STUDENTS**

International students must demonstrate competency in English and math and complete all other admissions processes before their program application will be activated and placed on the selected training program waitlist. Taking the TOEFL and attaining a score of 470 or greater may accomplish the reading portion of the assessment requirement. International students may be able to take this test through the U.S. consulate or embassy in their country. In addition to this, students must meet admission requirements for the selected college program and the college.

Some programs have prerequisite requirements in math, English, computer skills and science that must be met before students will be placed on the program wait list. Prerequisite requirements for each program are listed on the BTC web page, [www.btc.ctc.edu](http://www.btc.ctc.edu), or contact Admissions & Advising for program information. An official transcript must accompany any request for acceptance of prerequisite credit or advanced placement to a program from the college or university attended. If the college or university is located outside the United States, the class and credits will need to be evaluated by an independent credit evaluation service and the individual program Dean at Bellingham Technical College. Several of these services are listed below. Do not send a program application until you have met these requirements. Bellingham Technical College cannot issue an I-20 student visa for students to come to the college for placement testing.

INDEPENDENT CREDIT EVALUATION SERVICES: American Association of Collegiate Registrars  
[www.aacrao.org](http://www.aacrao.org)  
 World Education Services  
[www.wes.org](http://www.wes.org)  
 Foundation for International Students  
 19015 N Creek Parkway, Suite 103  
 Bothell, WA 98011-8019

## **ENROLLMENT SERVICES**

### **WITHDRAWAL POLICY**

Students may officially withdraw from the college by submitting a completed Add/Drop form to the Registration & Enrollment Office. Refer to the college calendar (page 2) for specific program withdrawal and schedule change dates for each quarter. Students who do not officially withdraw from the college will forfeit any refund to which they may have been entitled. The college may drop students from courses who fail to pay tuition and fees at the time of registration or by the tuition and fee payment due date. It is important that students attend all scheduled class times or notify the instructor of any absences.

## **TUITION & FEES**

### **TUITION & FEES**

#### **Other Fees**

Application Fee (health program exception; see below) .....	None
Criminal Background Processing Fee (Practical Nursing, Surgery Technology, Radiologic Technology, and Veterinary Technician only).....	\$10.00
Student Body Card.....	\$ 6.50
GED Transcript .....	\$ 4.00
Replacement Student Body Card .....	\$ 5.00
Official BTC Transcript .....	\$ 4.00
(No cost for unofficial transcript; available for student access on website)	
Replacement Degree/Certificate (per copy).....	\$ 4.00

## **TUITION & FEES**

### **REFUND POLICY**

#### **General Refund Information**

An Official Withdrawal is defined as when a student has submitted a completed Add/Drop form to the Registration Office before the withdrawal deadline. The refund will be calculated based on the date the form is submitted rather than the last day of attendance. No refund of tuition and fees will be made beyond the current quarter.

Students who fail to attend or stop attending a course or program without notice, and do not officially withdraw will forfeit all claims to the refund of tuition and fees. The college may drop students in courses who fail to pay at the time of registration or by the tuition and fee payment due date.

Refunds for Financial Aid students may be adjusted based on the type of aid received. Contact the Financial Aid Office at 360.752.8351 for any questions.

The college may extend the refund period for students with medical reasons or for those called into military service of the United States. Written documentation must be provided for consideration for an exception. All requests for an exception to the Refund Policy must be submitted in writing to the Director of Registration and Enrollment for determination.

Refunds for payments made by cash or check will be processed through the Business Office and a check mailed within three (3) weeks. Refunds for payments made by credit card will be processed back to the credit card in two (2) business days. Outstanding debts to the college will be deducted from refunds. A 100% refund will be made when the college cancels a course.

## **TUITION & FEES**

### **REFUND POLICY**

#### **Degree/Certificate Credit Courses**

#### **Non-degree/Non-certificate Credit Courses**

#### **General Education Courses**

#### **(State-funded)**

STATE-FUNDED (courses supported by state funds)

- 100% refund if a student officially withdraws through the 5th instructional day of the quarter.
- 50% refund if a student withdraws after the 5th instructional day through the 20th calendar day of the quarter.
- There are NO refunds after the 20th calendar day of the quarter.

"Instructional days" are defined as days the College is in session, not including weekends or scheduled holiday.

"Calendar days" are defined as all days the College is in session, including weekends and scheduled holidays.

Refunds for classes starting prior to the first officially scheduled day of the quarter are calculated by the 1st day of class rather than the 1st day of the quarter.

## **TUITION & FEES**

### **REFUND POLICY**

#### **Community Education and Child and Family Life Courses**

#### **Child & Family Life Courses**

#### **(Self-support)**

SELF-SUPPORT (courses supported by student fees)

- 100% refund if official withdrawal is submitted by midnight two (2) calendar days prior to the 1st instructional day of the class.
- There are NO refunds on or after two (2) calendar days prior to the 1st instructional day of the class.

## **TUITION & FEES**

### **REFUND POLICY**

#### **Mini Sessions and Summer Sessions**

(Sessions that are no longer than six (6) weeks in length)

- 100% refund if a student officially withdraws through the 2nd instructional day of the session.
- 50% refund if a student withdraws after the 2nd instructional day through the 5th instructional day of the session.
- There are NO refunds after the 5th instructional day of the session.

## **TUITION & FEES**

### **REFUND POLICY**

#### **Exceptions to the Refund Policy**

The college may extend the refund period for students with medical reasons or for those called into military service of the United States. Written documentation must be provided for consideration for an exception. All requests for an exception to the Refund Policy must be submitted in writing to the Director of Registration & Enrollment for determination.

## **FINANCIAL AID PROGRAMS**

### **Other Available Financial Aid**

**Scholarships** - Scholarships are available throughout the academic year. The Student Financial Resources Office has applications for BTC scholarships (available in Spring Quarter), and information on other scholarship sources.

**Veterans Benefits** - Veterans who wish to use their VA benefits for educational costs should contact the veterans support coordinator in the Counseling and Career Center prior to enrollment to ensure benefits will be paid in a timely manner.

**Other Agency Assistance** - BTC encourages applicants to check into eligibility for funding assistance from other agencies. Students may be eligible for additional funding to supplement their Federal financial aid package. Some of the funding that may be available is listed below. Information about agency funding is available in off-campus offices and at the Student Financial Resources office in the BTC Student Services Building.

#### On-Campus Funding

- Worker Retraining
- WorkFirst
- Opportunity Grant
- Basic Food Employment and Training (BFET)

#### Off-Campus Funding

- Division of Vocational Rehabilitation (DVR)
- Employment Security
- Labor and Industries (L&I)
- Northwest Workforce Development Council (NWDC)
- Tribal Funding

## **VETERANS BENEFITS**

Bellingham Technical College offers degree and certificate programs approved by the Washington State Approving Agency for the enrollment of those students eligible under Veterans Administration education benefits programs. Eligible veterans or dependents of veterans who wish to use their VA benefits for educational costs must apply for admission to the college and should contact the college veterans support coordinator as early as possible before enrolling to ensure benefits will be paid in a timely manner. Contact the coordinator through the Counseling & Career Center (College Services building room 106), 360.752.8450. Appointments are encouraged.

The college certifying official will certify students quarterly enrollment with VA in accordance with VA regulations. Eligible students will be certified only for courses that apply to the declared degree or certificate program. All veterans benefits recipients are required to report program changes, quarterly credit hour changes, and changes to marital and family status to BTC's veterans coordinator or the college certifying official.

Veterans benefits recipients are required to maintain academic progress according to the college's policy. Failure to comply with VA regulations may result in termination from the VA benefit program.

## **WORKFIRST**

WorkFirst is part of the Washington State Welfare-to-Work program and provides free tuition, books, and fees for qualified men and women as funding permits. You may qualify if you are a WorkFirst parent who is receiving a TANF cash grant and you are not receiving any other financial assistance sufficient to pay all of the tuition, books, and fees.

Receiving WorkFirst funding requires that the student have a career plan that includes development of basic skills, better employability skills, or a new career, in order to progress in wages.

Anyone inquiring about eligibility for this program should call the Bellingham Technical College WorkFirst advisors at 360.752.8367 (located in College Services Building, Room 101).



# **3**

## **STUDENT LIFE & SERVICES**

No changes/updates

# 4

## **POLICIES, REQUIREMENTS, & RECORDS**

### **ACADEMIC REQUIREMENTS**

#### **DEGREE/CERTIFICATE PROGRAMS**

The Associate in Applied Science (AAS) degree is awarded for completion of a comprehensive program of study in professional technical education designed to prepare graduates for technician level employment. Programs leading to the AAS degree are 90 or more credits in length.

The Associate in Applied Science - Transfer (AAS-T) option contains the technical courses needed for job preparation as well as 20 credits of transferrable general education course work in English, math, psychology and transfer level humanities, social science or natural science.

A certificate of completion is awarded for successful completion of an approved course of study totaling less than 90 credits within a program of professional technical education.

Students may elect to graduate under the provisions of the catalog in force either at the time of entry OR at the time of completion, providing four (4) years have not lapsed AND the student has remained continuously enrolled in the program. Students needing longer than four years to complete a given degree or certificate will be subject to any updated completion requirements.

The College provides assistance through faculty advisors, counselors, and the college catalog, in determining if the requirements for graduation have been met. However, the final responsibility for meeting all completion requirements rests with the student. Students have the responsibility of verifying specific completion requirements with their faculty advisor.

### **STUDENT GRADES**

#### **GRADING POLICY**

##### **Interpretation of Grade Symbols**

A (4.0) Excellence in Achievement of Competency

In relation to the standards set for the course, the student has done an exceptionally high level of work and has achieved all competencies.

B (3.0) Above Average Achievement of Competency

In relation to the standards set for the course, the student has significantly exceeded the average and has achieved all competencies.

C (2.0) Average Achievement of Competency

In relation to the standards set for the course, the student accomplished an average level of work and, at a minimum, has achieved all competencies.

D (1.0) Below Average Achievement of Competency

In relation to the standards set for the course, the student did not do average work and did not meet the minimum level competencies.

F (0.0) Failure to Achieve Minimum Competency

Failed to progress toward minimum competencies and performed at exceptionally low level of skill. Student must repeat degree/certificate program course requirements in which an F grade has been earned.

R - Repeat

Indicates the course has been repeated. Only the highest grade will compute in the cumulative GPA. This indicator appears after the letter grade of the lowest grade.

NOTE: + and - symbols are used with traditional letter grades A through D to differentiate level of achievement within a grade range.

The + symbol is not used with the letter grade A, nor is the +/- symbols used with the letter grade F.

The following grades are also used when appropriate and are not calculated in the grade point average:

GRADE	
AU	Audit
CR	Credit for prior experiential learning
I	Incomplete
NP	No Pass
P	Pass
T	Transfer (valid grad prior to summer quarter 2009)
V	Unofficial withdrawal
W	Withdrawal

### **AU-Audit**

This designation is used for courses only and must be requested by the student before the course begins or prior to the second class session. This grade is not used for degree/certificate programs. No credit or grade will be awarded for Audit classes.

### **CR - Credit for Prior Experiential Learning**

Prior experiential learning is credit granted toward the award of a degree or certificate for prior learning experiences that can be shown through various means of assessment to be the equivalent of learning gained through formal collegiate instruction.

### **I - Incomplete**

The student completed a significant portion of the course requirements but did not complete all requirements at the time of exit. A "contract" with the instructor for completing the competencies must be established and all work completed according to the contract, within one year from the date the I grade was received, for a student to receive a letter grade.

### **NP - No Pass**

In relation to the standards set for the course, the student did not meet the requirements. Used for Pass/No Pass, internship courses, workbased learning experiences, and clinical courses.

### **P - Pass**

In relation to the standards set for the course, the student met all requirements. Used for Pass/No Pass, internship courses, workbased learning experiences, and clinical courses.

### **T - Transfer credit (valid grade prior to summer quarter 2009)**

Credit granted for coursework completed from other regionally accredited institutions as determined by the designated transcript evaluator, program instructor, or Dean through evaluation of official transcripts. Effective summer 2009 cumulative transfer credits will be noted on the student record.

### **V - Unofficial Withdrawal**

The student discontinued course and has not officially withdrawn. The 'V' grade may not be awarded for course requirements in certificate and degree programs.

### **W - Withdrawal**

This designation is a system-awarded grade for students who officially withdraw from a course or program prior to the end of the quarter. It is also the designation of administrative withdrawal of the student by the College.

## **STUDENT RECORDS GRADES & TRANSCRIPTS**

Quarterly grades for all graded programs and courses are available online within five working days following the end of the quarter through the College website Online Services. Students must have their Student ID number (see page 70 for more information about SIDs) and a personal identification number (PIN) to access their grades on their unofficial transcript. PINS are available at [www.btc.ctc.edu](http://www.btc.ctc.edu), Online Services, PIN Request/Reset PIN.

An unofficial transcript is an unsigned and unsealed copy of the students record. There is no charge for unofficial transcript copies.

The official transcript is a sealed copy of the students academic record bearing the colleges seal and the signature of the Registrar. Requests for official transcripts must be made in writing with signature and accompanied by a \$4.00 payment.

To request a transcript by mail, include name, social security number or student identification number, approximate dates of attendance, signature, and appropriate fee payment. Transcript request forms are available at the BTC website, Online Services page. Submit the completed form with payment in person, by mail, or by FAX.

Transcripts are withheld if all obligations to the college, financial or otherwise, are not fully filled.

## **STUDENT RIGHTS & RESPONSIBILITIES CAMPUS CODE OF CONDUCT**

All students are subject to the Bellingham Technical College Campus Code of Conduct published in Chapter 495B-120 of the Washington Administrative Code and as defined in this catalog.

Copies of the entire Campus Code of Conduct are published and available to students and the campus community in the Counseling & Career Center, the Office of the Vice President of Student Services, distributed to new students at New Student Orientation, and posted in each degree/certificate program classroom.

Enrollment in the college carries with it the requirement that the student will conduct himself or herself as a responsible member of the community. This includes an expectation that the student will obey appropriate laws, will comply with the rules of the college and its departments, and will maintain a high standard of integrity and honesty. Sanctions for violations of college rules or for conduct that interferes with the operation of college affairs will be dealt with by the college, and the college may impose sanctions independently of any action taken by civil or criminal authorities. In the case of minors, misconduct may be referred to parents or legal guardians.

Disciplinary action may be taken for a violation of any provision of the student code or violation of other college rules.

## **STUDENT RIGHTS & RESPONSIBILITIES STUDENT GRIEVANCE PROCEDURE**

### **Definition of Grievance**

A grievance is a complaint by a student against a policy or practice of the college or college staff that is considered improper or unfair, or where there has been deviation from or misinterpretation or misapplication of a practice or policy.

### **Grievance Procedure**

Grievances relating to grades, grade omissions, or faculty must be initiated by the student.

Grievances regarding grades will be considered only when no more than four (4) quarters have elapsed from the time the grades were awarded/missed.

- A. A student wishing to pursue a grievance must take the following steps to try to resolve the grievance prior to filling out an official complaint form.
  - 1. The student will first try to resolve the matter with the appropriate BTC staff member.
  - 2. If resolution is not achieved between the student and the BTC staff member, the student will ask the staff member's immediate supervisor to resolve the grievance.
  - 3. If resolution is not achieved at the supervisory level, the student will ask the supervisor's vice president to resolve the grievance.
  - 4. If resolution is not achieved as this point, the student may file a complaint using the appropriate complaint forms. (An appointment must be made with the Vice President of Student Services or a designee to obtain the necessary forms and information.)
- B. Complaints must be filed with the Vice President of Student Services or a designee.
- C. Complaints must be filed within twenty (20) school days of the date of the action causing the complaint.
- D. The student will receive acknowledgment of the filing of a formal, written complaint. The student may withdraw the complaint at any point during the formal procedure. The Vice President of Student Services or a designee will notify the person(s) against whom the complaint has been filed (hereafter referred to as the staff member). The staff member will also receive a copy of the complaint.
- E. A grievance committee will be appointed annually by the college president and will consist of five individuals representing the various college constituencies. The committee will be made up of one administrator, two faculty members, and two support staff members. The complainant may request student representation on the committee. If requested, the President may select two students to substitute for a like number of existing members of the committee. Members of the grievance committee will remove themselves from the process if they deem themselves biased or personally interested in the outcome of grievance.
- F. The Vice President of Student Services or a designee will serve as the investigating officer in the complaint.
- G. The investigating officer will
  - 1. Meet with the student and the staff member;
  - 2. Examine documentation and interview witnesses;
  - 3. Consult with the appropriate vice president, or equivalent unit head and/or other appropriate administrator; and
  - 4. Prepare a written investigative report.
- H. The investigating officer may meet individually with the student and the staff member to discuss the report in the hope that a resolution can be reached. If a resolution is not achieved, copies of the investigative report will be forwarded to the grievance committee, the student, the staff member, and the appropriate administrator(s).
- I. The grievance committee will review the complaint and the findings of the investigating officer and determine whether or not the facts warrant a hearing. The committee's decision will be limited to one of the following statements:
  - 1. Based on the evidence presented to us, we find probable cause for believing that an improper or unfair practice or act has been committed; or
  - 2. Based on the evidence presented, we find no probable cause for believing that an improper or unfair practice or act has been committed.

The committee will make its report in writing to the Vice President of Student Services or a designee after receipt of the report by the investigating officer. The deliberations of the committee will not be disclosed to anyone except the Vice President of Student Services or a designee who will hold them confidential.

- J. If no probable cause is found, the matter will be considered concluded. However, the student may submit a written appeal to the President within ten (10) working days from the date the decision is made. The appeal must specify in detail what findings, recommendations, or other aspects of the report or decision were not acceptable. The appeal should also include what corrective action the student desires after consideration of the appeal by the President. The President may uphold the decision of the committee, and at that point no further appeals within the college will be considered. Or, the President may instruct the committee to go forward with the grievance hearing process.
- K. If probable cause is found, a hearing will be held.
1. The committee will select a chair. The chair of the committee will establish a date for the hearing. A notice establishing the date, time, and place of the hearing will be provided to all involved parties.
  2. The hearing will be held within thirty (30) working days from the date of the hearing notice.
  3. The student and the staff member will each have the privilege to challenge one member of the committee without cause (stated reason). Unlimited challenges may be issued if it is felt that a member of the committee is biased. In the case of a challenge for bias, a majority of the grievance committee members must be satisfied that a challenged member cannot hear the case impartially before the member can be disqualified. In the case of removal of a member through the challenge process, the President will restore the committee to full membership.
  4. The hearing will be conducted as expeditiously as possible and on successive days, if possible.
  5. The student and the staff member and any others the committee deems necessary to the proceedings will make themselves available to appear at the proceeding unless they can verify to the committee that their absence is unavoidable.
  6. The student and the staff member will be permitted to have with him/her a party of his/her own choosing to act as advisor and counsel. The hearing may be monitored by the Assistant Attorney General assigned to the college.
  7. The hearing will be closed to all except those persons directly involved in the case as determined by the grievance committee. Statements, testimony, and all other evidence given at the hearing will be confidential and will not be released to anyone and may be used by the committee only for the purpose of making its findings and recommendations to the President.
  8. The chair of the grievance committee will convene and regulate the proceeding. The student, the staff member, and the members of the hearing panel must be present during the proceeding, unless excused by the chair for good cause. Repeated failure, without reasonable explanation, of either the student or the staff member to appear will be grounds for defaulting that party's case. The student will have the burden of presenting the case and the staff member will have the burden of challenging the evidence presented.
    - a. All parties will have the opportunity to present evidence, respond to evidence presented, and examine and cross examine witnesses.
    - b. The hearing panel will be empowered to examine witnesses and receive evidence; exclude any person(s) felt to be unreasonably disruptive of the proceedings; hold conferences for the settlement of the issues involved; make decisions or proposals for decisions; and take any other actions authorized by the rule consistent with this procedure.
    - c. No individual will be compelled to divulge information in any form that he/she could not be compelled to divulge in or in connection with court proceedings.
    - d. Any legal opinion or interpretation given to the grievance committee by the parties may be shared with all parties to the case.

- e. The grievance committee will file its findings and recommendations with the President, the Vice President of Student Services, the student, and the staff member after the conclusion of the hearing. If the findings and recommendations of the grievance committee are acceptable to the student and the staff member, the President may direct implementation of the recommendations.
- L. If the student or staff member objects to the findings and recommendations and wishes to appeal, a written appeal may be submitted to the President within ten (10) working days from the date the finding is issued. The appeal must specify in detail the findings, recommendations, or other aspects of the report or decision that are not acceptable. The appeal should also include what corrective action the student or staff member desires after consideration of the appeal by the President.
- M. After considering an appeal, the President will issue a written decision to the parties involved. The decision of the President will be final and no further appeals within the college will be considered.

## **TRANSFERRING & EARNING CREDITS**

### **CREDIT ACCEPTANCE POLICY**

#### **Transfer Credit Evaluation Procedures**

The College will maintain Transfer Credit Advising Guides that list courses that have been identified as equivalent for general education and academic support courses.

Students seeking transfer credit must submit to the Admissions and Advising Office a completed Evaluation Request form and official, sealed college transcripts documenting equivalent credit. For some courses, course syllabi or other descriptive information may be required in addition to an official transcript.

## **TRANSFERRING & EARNING CREDITS**

### **CREDIT ACCEPTANCE POLICY**

#### **Technical Course Requirements**

A student seeking transfer credit for technical courses must submit a completed Evaluation Request form and official transcripts or equivalent documentation to the Admissions & Advising Office. Program faculty will evaluate and determine credit granted for equivalent technical content.

## **TRANSFERRING & EARNING CREDITS**

### **CREDIT ACCEPTANCE POLICY**

#### **General Education Courses**

Students must submit a completed Evaluation Request form with sealed, official transcripts to the Admissions & Advising Office for evaluation and approval of credit granted for equivalent general education content. The form and the official transcript will be reviewed by the College-designated transcript evaluator. When evaluated, and after the student has satisfied requirements for admission into a program, the completed Evaluation Request form and the sealed, official transcript will be returned to the Registration & Enrollment Office for posting of the transfer credit and for filing.

## **TRANSFERRING & EARNING CREDITS**

### **CREDIT ACCEPTANCE POLICY**

#### **Credit for Prior Experiential Learning**

Bellingham Technical College recognizes credit for prior experiential learning. Credit for prior experiences that can be shown through various means of assessment to be the equivalent of learning gained through formal collegiate instruction may be granted toward the award of a degree or certificate. Credit for prior experiential learning applies only to degree/certificate programs and may not exceed twenty-five percent (25%) of the total hours required for the degree or certificate.

Credit for prior experiential learning will be granted only to currently enrolled program students. The credits granted will be based upon procedures developed and published by the program faculty and approved by the Instruction Council in accordance with institutional policy. Assessment must include theory and practicum if applicable. The prior experiential learning cannot duplicate credit granted by transfer or previously graded course work.

Prior experiential learning credit will not be awarded in lieu of general education courses, including MATH 100, MATH &107, MATH &141, PSYC &100, PSYC 111, ENGL &101, COM 170, and other academic support courses. Professional technical faculty may consider professional/industry certifications for credit for prior experiential learning.

## **TRANSFERRING & EARNING CREDITS DEGREE & CERTIFICATE PROGRAM TRANSFER**

Currently enrolled Bellingham Technical College degree/certificate program students may be considered for priority placement on the program list for admission in a related program if the student has completed portions of the technical content/competencies that are transferrable to the degree/certificate program.

## **TRANSFERRING & EARNING CREDITS TRANSFERABILITY OF BTC CREDITS**

To determine transferability of credits earned at Bellingham Technical College, students must request an official BTC transcript be forwarded to the college where they wish to have credits evaluated. The receiving college will determine the value of course work completed at BTC. Contact the Registrar at any other college you wish to send transcripts to for evaluation. Official BTC transcripts are available through the Registration & Enrollment Office.

"&" in the BTC course suffix designates Washington State Community and Technical College "Common Course Numbering (CCN)". The purpose of Common Course Numbering is to identify those courses common within the 34 community and technical colleges in Washington State and make course transfer between and among those institutions and to the four-year colleges and universities as easy as possible for students, advisors, and receiving institutions.

## **STUDENT GRADES GRADING POLICY GRADE CHANGES**

A grade posted on a student's transcript is considered final. If a student believes there has been a grading error, it is the student's responsibility to contact the instructor as soon as possible. Instructors can submit grade changes due to error not more than four (4) quarters from the time the grade was awarded.



# 5

## PROGRAMS OF STUDY

### Degrees/Certificates Removed

#### Appliance & Refrigeration Technology

Appliance & Refrigeration Technology

#### Civil Engineering

Civil Construction Management

#### Career and Technical Education

Career and Technical Education

### New or Revised Degrees/Certificates

#### Dental Assisting

#### Dental Assisting

Degree

COM 170	Oral & Written Communications	5
	OR	0
ENGL& 101	English Composition I	5
MATH& 107	Math In Society	5
	OR	0
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
	OR	0
PSYC& 100	General Psychology	5
BIO 105	Essentials Of Anatomy & Physiology	5
DEN 105	Head and Neck Anatomy	2
DEN 100	Introduction to Dental Assisting	1
HLTH 133	HIV/AIDS: Healthcare Professional	1
HO 127	Healthcare Provider CPR	0.5
SPCH 105	Interpersonal Comm	5
DEN 110	Dental Foundations	5
DEN 112	Chairside Assisting	7
DEN 114	Dental Sciences	4
DEN 115	Dental Clinic Practicum I	6
DEN 120	Patient Assessment	8
DEN 122	Chairside Assisting II	6
DEN 124	Radiography	3
DEN 125	Dental Clinic Practicum II	4
DEN 130	Preventive Dentistry	3
DEN 132	Dental Specialties	1
DEN 134	Laboratory Procedures	2

DEN 135	Dental Clinic Practicum III	4
DEN 137	Extramural Practicum	8
<b>Total</b>	<b>(Approx. 5 quarters)</b>	<b>90.5 CRs</b>

## Education

### Career & Technical Education

Certificate

EDUC 175	Achieving Information Literacy	1
EDUC 200	Introduction To Teaching Professional Technical Education	3
EDUC 207	Teaching & Facilitating Learning: Level I	3
EDUC 209	Teaching & Facilitating Learning: Level II	3
EDUC 211	Planning For Instruction	3
EDUC 216	Assessment For Learning	3
EDUC 231	Learning Environment Management	3
HLTH 150	First Aid Industrial	1
<b>Total</b>	<b>(Approx 3 quarters)</b>	<b>20 CRS</b>

## Electro Mechanical Technology

### Electro Mechanical Technology

Certificate

COM 170	Oral & Written Communications	5
ELCN 101	DC Circuits	3
ELCN 103	Electrical Drawings and Blueprints	2
ELCN 131	DC Circuit Lab	3
EMTEC 103	Electrical Circuits	5
EMTEC 105	Trade Safety	2
EMTEC 121	Fundamentals Of Hydraulic & Pneumatics	5
EMTEC 123	Hydraulics and Pneumatics Circuits	5
EMTEC 125	Applied Mechanics	4
EMTEC 126	Engineering Graphics	3
EMTEC 131	Rigging	3
EMTEC 133	Introduction to Machinery Skills	4
EMTEC 175	EMTEC Advanced Welding	2
EMTEC 201	AC Components and Measurements	5
EMTEC 205	Programmable Logic Controllers	4
EMTEC 211	Electrical Controls I	5
EMTEC 217	Instrumentation & Controls	5
EMTEC 218	Introduction to National Electrical Code	3
EMTEC 231	Bearings and Drives	5
EMTEC 232	Drive Alignment-Conveyors and Machining Systems	5
EMTEC 234	Valves, Pumps and Traps	5
EMTEC 235	Boilers and Combustion Technology	5
EMTEC 237	Computerized Maintenance and Management Systems	5
EMTEC 250	Capstone Project	9
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5

## Changed Degrees/Certificates

### Accounting

#### Accounting

##### Degree

ACCT 141	Financial Accounting I	5
ACCT 242	Financial Accounting II	5
ACCT 243	Financial Accounting III	5
ACCT 245	Payroll Procedures	5
ACCT 246	Computerized Accounting I	5
ACCT 254	Managerial Accounting	5
ACCT 270	Internship	3
	OR	0
ACCT 273	Internship	4
BUS 100	Electronic Math Applications	3
BUS 150	Mathematics For Business	5
BUS 171	Technical Communications	5
BUS 188	Business English	5
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 106	Formatting With MS Word	4
CAP 142	MS Excel	5
PSYC 111	Interpersonal & Organizational Psychology	5
	Departmental Electives	29
<b>Total</b>	<b>(Approx. 5-6 quarters)</b>	<b>101 CRs</b>

#### Accounting Assistant

##### Certificate

ACCT 141	Financial Accounting I	5
ACCT 242	Financial Accounting II	5
ACCT 246	Computerized Accounting I	5
BUS 100	Electronic Math Applications	3
BUS 150	Mathematics For Business	5
BUS 171	Technical Communications	5
BUS 188	Business English	5
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 106	Formatting With MS Word	4
CAP 142	MS Excel	5
PSYC 111	Interpersonal & Organizational Psychology	5
	Suggested Department Electives	7
<b>Total</b>	<b>(Approx. 3 quarters)</b>	<b>61 CRs</b>

## Administrative Assistant

### Administrative Assistant

Degree

ACCT 141	Financial Accounting I	5
BUS 100	Electronic Math Applications	3
BUS 125	Records Management and Data Entry	5
BUS 150	Mathematics For Business	5
BUS 171	Technical Communications	5
BUS 188	Business English	5
BUS 225	Internship	6
BUS 232	Office Procedures	5
BUS 280	Assessment	1
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 106	Formatting With MS Word	4
CAP 107	Computerized Keyboarding/Skillbuilding	3
CAP 109	Computerized Keyboard Skillbuilding II	3
CAP 138	MS Word	5
CAP 142	MS Excel	5
CAP 146	MS Access	5
CAP 148	MS Powerpoint	3
CAP 200	Integrated Computer Applications	5
PSYC 111	Interpersonal & Organizational Psychology	5
	Departmental Electives	20
<b>Total</b>	<b>(Approx. 5-6 quarters)</b>	<b>105 CRs</b>

## Appliance & Refrigeration Technology

### Appliance Repair

Certificate

APPL 100	Introduction to Trade & Occupational Safety	1
APPL 105	Electrical Theory I	8
APPL 106	Electrical - Practical I	5
APPL 109	Tool/Testing Equipment	1
APPL 112	Motor Circuits	2
APPL 114	Electrical Dryers	7
APPL 116	Washers I	7
APPL 117	Washers II	3
APPL 118	Washers III	7
APPL 122	Dishwashers	8
APPL 124	Compactors/Disposers	4
APPL 126	Microwave Ovens	6
APPL 201	Water Heaters	1
APPL 202	Gas Fundamentals	2
APPL 203	Ranges/Ovens/Cooktops	10
APPL 204	Gas Labs	4
COM 170	Oral & Written Communications	5
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approx. 4 quarters)</b>	<b>87 CRs</b>

## Automotive Collision Repair

### Automotive Collision Repair

Degree

ACRT 101	Introduction to Auto Collision Repair	4
ACRT 105	Non-structural Welding	8
ACRT 110	Refinishing Safety	2
ACRT 115	Non-structural Repair	2
ACRT 123	Non-structural Metal Finishing	7
ACRT 125	Refinishing Surface Preparation	7
ACRT 130	Damage Analysis	3
ACRT 133	Paint Matching and Blending	7
ACRT 135	Refinish Paint Defects	3
ACRT 138	Restoring Corrosion Protection	3
ACRT 140	Drive Train, Fuel, Brakes, HVAC	2
ACRT 141	Outer Body Panel Repair	4
ACRT 142	Shop Practicum I	3
ACRT 143	Shop Practicum II	6
ACRT 251	Structural Welding	4
ACRT 253	Moveable Glass and Hardware	2
ACRT 254	Structural Fixed Glass	2
ACRT 255	Suspension and Steering	4
ACRT 256	Unibody Inspection	4
ACRT 260	Shop Practicum III	6
ACRT 262	Frame Inspection and Repair	4
ACRT 263	Restraint Systems	2
ACRT 264	Plastics and Adhesives	4
ACRT 266	Electrical System Repair	3
ACRT 268	Refinishing Final Detail	3
ACRT 270	Shop Practicum IV	10
ACRT 275	Internship	7
COM 170	Oral & Written Communications	5
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approx. 6 quarters &amp; 1 Summer)</b>	<b>131 CRs</b>

### Automotive Refinishing

Certificate

ACRT 101	Introduction to Auto Collision Repair	4
ACRT 110	Refinishing Safety	2
ACRT 115	Non-structural Repair	2
ACRT 123	Non-structural Metal Finishing	7
ACRT 125	Refinishing Surface Preparation	7
ACRT 133	Paint Matching and Blending	7
ACRT 135	Refinish Paint Defects	3
ACRT 138	Restoring Corrosion Protection	3
ACRT 142	Shop Practicum I	3
ACRT 143	Shop Practicum II	6
ACRT 268	Refinishing Final Detail	3
ACRT 275	Internship	7

COM 170	Oral & Written Communications	5
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approx. 4 quarters)</b>	<b>69 CRs</b>

## Bookkeeping Assistant

### Bookkeeping Assistant

Certificate

ACCT 141	Financial Accounting I	5
BUS 100	Electronic Math Applications	3
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 142	MS Excel	5
CAP 154	Computerized Accounting Level A Using Quickbooks	3
	Recommended Electives	6
BUS 150	Mathematics For Business	5
BUS 184	Customer Service	3
CAP 155	Computerized Accounting Level B Using Quickbooks	3
MGMT 100	Business & Professional Ethics	3
<b>Total</b>	<b>(Approx. 4 quarters)</b>	<b>29 CRs</b>

## Building Construction Technology

### Building Construction Technology

Degree

BCT 111	Career Opportunities and Industrial Safety	1
BCT 112	Construction Materials and Application	2
BCT 113	Hand Tool Use and Operations	2
BCT 114	Portable Power Tools Use and Operations	4
BCT 115	Stationary Power Tool Use and Operations	4
BCT 116	Building Layout	3
BCT 117	Concrete and Concrete Forming	2
BCT 121	Blueprint Reading	4
BCT 122	Framing Methods - Floor Framing	4
BCT 123	Framing Methods - Wall Framing	4
BCT 124	Framing Methods - Ceiling Framing	4
BCT 125	Truss Roof Framing	4
BCT 130	Roof Framing	6
BCT 132	Stair Framing	1
BCT 134	Exterior Walls and Roof Coverings	2
BCT 135	Interior Wall Covering Insulation & Trim	4
BCT 136	Intro to House Wiring and Plumbing	2
BCT 137	Roof Sheathing, and Coverings	1
BCT 138	Exterior Doors Windows and Skylights	3
BCT 241	CAD Drafting Fundamentals	8
BCT 242	Building Plan Drafting	8

BCT 243	Estimating Materials and Labor	5
BCT 245	Project Management	2
BCT 251	Internship Building Construction	9
COM 170	Oral & Written Communications	5
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approx. 5 quarters)</b>	<b>104 CRs</b>

## Business & Supervision Management

### Business & Supervision Management

Certificate

ACCT 141	Financial Accounting I	5
BUS 140	Supervision & Management OR	3
HRM 201	Management Of Human Resources: An Overview	3
BUS 141	Total Quality Management	2
BUS 184	Customer Service	3
MGMT 100	Business & Professional Ethics	3
MGMT 101	Conflict Management	1
MGMT 102	The Leadership Process	3
	Recommended Electives	12
CAP 101	Introduction to Computers	5
CAP 154	Computerized Accounting Level A Using Quickbooks	3
GBUS 110	Business Communications	5
MGMT 152	Small Business Management	3
MKT 100	Marketing Fundamentals	5
	Any HRM course in area of interest	3
<b>Total</b>	<b>(Approx. 4-5 quarters)</b>	<b>32 CRs</b>

## Child Development (CDA)

Child Development (CDA)

## Civil Engineering

### Civil Engineering

Degree

COM 170	Oral & Written Communications	5
ENGT 122	CAD I: Basics	6
ENGT 128	Civil/Survey CAD 2	7
ENGT 132	MS Office Applications	5
ENGT 152	Estimating And Scheduling	5
ENGT 153	Intermediate GIS	7
ENGT 156	Earthmoving Fundamentals	5
ENGT 251	Land Desktop - Survey Add-On	8
ENGT 252	Land Desktop - Civil Add-On	8
ENGT 256	Standards, Specifications, And Codes	3
ENGT 258	Construction Materials	7
MATH& 141	Precalculus I	5
MATH& 142	Precalculus II	5
PSYC 111	Interpersonal & Organizational Psychology	5
SURV 102	Fundamentals of Surveying I	7
SURV 104	Construction and Highway Surveys	6
SURV 116	Survey Data Systems	4
SURV 140	Fundamentals of GIS & GPS	4
SURV 152	Zoning, Permitting and Platting	4
SURV 191	Professional Development and Safety	3
SURV 205	Advanced GIS Applications	7
<b>Total</b>	<b>(Approx. 6 quarters)</b>	<b>116 CRs</b>

## Clerical Assistant

### Clerical Assistant

Certificate

BUS 100	Electronic Math Applications	3
BUS 188	Business English	5
BUS 184	Customer Service	3
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 138	MS Word	5
CAP 142	MS Excel	5
	Recommended Electives	8
ACCT 141	Financial Accounting I	5
BUS 125	Records Management and Data Entry	5
BUS 150	Mathematics For Business	5
CAP 154	Computerized Accounting Level A Using Quickbooks	3
MGMT 100	Business & Professional Ethics	3
<b>Total</b>	<b>(Approx. 4 quarters)</b>	<b>35 CRs</b>



## Construction Management

### Construction

Certificate

CONST 100	Computers in Construction or CAP 101 Introduction to Computers	3
CONST 141	Blueprint Reading	3
CONST 200	Basic Estimating	3
CONST 201	Contracts and Construction Law	3
CONST 220	Project Planning and Scheduling	3
CONST 250	Safety and Accident Prevention	3
CONST 251	Safety Plan Administration	3
CONST 260	Construction Project Management	3
CONST 280	Building Codes	3
ENGT 122	CAD I: Basics	6
<b>Total</b>	<b>(Approx. 3 quarters)</b>	<b>33 CRs</b>

## Culinary Arts

### Culinary Arts

Degree

CAP 101	Introduction to Computers	5
COM 170	Oral & Written Communications	5
CUL 110	Sanitation	3
CUL 112	Introduction to the Hospitality Industry	4
CUL 114	Culinary Skill Development I	7
CUL 116	Meat Identification and Fabrication	3
CUL 120	International and American Regional Cuisine	6
CUL 122	Culinary Skill Development II	7
CUL 124	Banquet and Catering Management	3
CUL 140	Garde Manger	6
CUL 142	Nutrition	3
CUL 144	Introduction to a la Carte Cookery	5
CUL 152	Internship/Culinary Competition	9
CUL 212	Breads, Cookies, and Tarts	7
CUL 214	Pies, Cakes, and Desserts	7
CUL 216	Introduction to Chocolates and Sugar Work	2
CUL 220	Restaurant Management	7
CUL 222	Hospitality Supervision	4
CUL 224	Food and Beverage Service	3
CUL 230	A la Carte Restaurant	8
CUL 232	Food and Beverage Service Lab	4
CUL 234	Capstone Project and Practical Exam	3
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approx. 7 quarters)</b>	<b>121 CRs</b>

## Pastry

### Certificate

CUL 110	Sanitation	3
CUL 212	Breads, Cookies, and Tarts	7
CUL 214	Pies, Cakes, and Desserts	7
CUL 216	Introduction to Chocolates and Sugar Work	2
<b>Total</b>	<b>(Approx. 1 quarter)</b>	<b>19 CRs</b>

## Data Entry Specialist

### Data Entry Specialist

#### Certificate

BUS 100	Electronic Math Applications	3
BUS 125	Records Management and Data Entry	5
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 106	Formatting With MS Word	4
CAP 142	MS Excel	5
CAP 146	MS Access	5
	Departmental Electives	13
<b>Total</b>	<b>(Approx. 2 quarters)</b>	<b>42 CRs</b>

## Dental Assisting

### Dental Assisting

#### Certificate

COM 170	Oral & Written Communications	5
	OR	
ENGL& 101	English Composition I	5
MATH& 107	Math In Society	5
	OR	0
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
	OR	
PSYC& 100	General Psychology	5
BIO 105	Essentials Of Anatomy & Physiology	5
DEN 105	Head and Neck Anatomy	2
DEN 100	Introduction to Dental Assisting	1
HLTH 133	HIV/AIDS: Healthcare Professional	1
HO 127	Healthcare Provider CPR	0.5
DEN 110	Dental Foundations	5
DEN 112	Chairside Assisting	7
DEN 114	Dental Sciences	4
DEN 115	Dental Clinic Practicum I	6
DEN 120	Patient Assessment	8
DEN 122	Chairside Assisting II	6

DEN 124	Radiography	3
DEN 125	Dental Clinic Practicum II	4
DEN 130	Preventive Dentistry	3
DEN 132	Dental Specialties	1
DEN 134	Laboratory Procedures	2
DEN 135	Dental Clinic Practicum III	4
DEN 137	Extramural Practicum	8
<b>Total</b>	<b>(Approx. 4 quarters)</b>	<b>85.5 CRs</b>

## Dental Hygiene

### Dental Hygiene

AAS-T

DHYG 112	Dental Hygiene Clinical Practice I	5
DHYG 113	Restorative Dentistry I	3
DHYG 114	Principles of Dental Hygiene I	3
DHYG 115	Oral & Dental Anatomy	4
DHYG 116	Oral Radiology I	4
DHYG 122	Dental Hygiene Clinical Practice II	5
DHYG 123	Restorative Dentistry II	3
DHYG 124	Principles of Dental Hygiene II	3
DHYG 125	General Pathology	4
DHYG 126	Oral Radiology II	2
DHYG 146	Medical & Dental Emergencies	3
DHYG 132	Dental Hygiene Clinical Practice III	6
DHYG 133	Restorative Dentistry III	2
DHYG 134	Principles of Dental Hygiene III	3
DHYG 138	Periodontology	3
DHYG 127	Pharmacology	3
DHYG 142	Dental Hygiene Clinical Practice IV	6
DHYG 143	Restorative Dentistry IV	2
DHYG 144	Principles of Dental Hygiene IV	3
DHYG 145	Community Oral Health I	4
DHYG 149	Pain Management	4
DHYG 212	Dental Hygiene Clinical Practice V	8
DHYG 213	Restorative Dentistry V	1
DHYG 214	Principles of Dental Hygiene V	3
DHYG 215	Community Oral Health II	3
DHYG 219	Oral Pathology	3
DHYG 222	Dental Hygiene Clinical Practice VI	8
DHYG 223	Restorative Dentistry VI	3
DHYG 224	Principles of Dental Hygiene VI	3
DHYG 225	Community Oral Health III	2
DHYG 228	Oral Therapy	3
DHYG 229	Dental Hygiene Seminar	1
DHYG 232	Dental Hygiene Clinical Practice VII	8
DHYG 233	Restorative Dentistry VII	1
DHYG 234	Principles of Dental Hygiene VI	3
DHYG 235	Community Oral Health IV	2
<b>Total</b>	<b>(7 Quarters)</b>	<b>127 CRs</b>

## Diesel Technology

### Diesel Technology

Degree

COM 170	Oral & Written Communications	5
DET 104	Hydraulic Brakes	2
DET 106	Electrical/Electronics I	4
DET 116	Electrical/Electronics II	4
DET 126	Electrical/Electronics III	4
DET 129	Applied Diesel Concepts I	12
DET 139	Applied Diesel Concepts II	12
	or other college-level electives totaling 12 credits, which may include DET 240 Current Industry Topics I or DET 242 Current Industry Topics II	
DET 201	Hydraulics	8
DET 202	Diesel Engines	13
DET 203	Drive Train	3
DET 204	Air Brakes	5
DET 205	Suspension/Steering	5
DET 208	Preventive Maintenance	6
DET 239	Applied Diesel Concepts III	13
DET 240	Current Diesel Industry Topics I	6
DET 242	Current Diesel Industry Topics II	6
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
TRANS 101	Basic Trans. Service & Systems I	5
TRANS 102	Basic Trans. Service & Systems II	5
TRANS 103	Basic Trans. Service & Systems III	5
<b>Total</b>	<b>(Approx. 7 quarters)</b>	<b>121 CRs</b>

### Diesel Hydraulics Preventative Maintenance & Electrical/Electronic Systems

Certificate

## Education

### Professional Technical Education

Degree

	Professional Technical CORE Education Coursework:	
EDUC 200	Introduction To Teaching Professional Technical Education	3
EDUC 207	Teaching & Facilitating Learning: Level I	3
EDUC 209	Teaching & Facilitating Learning: Level II	3
EDUC 211	Planning For Instruction	3
EDUC 216	Assessment For Learning	3
EDUC 231	Learning Environment Management	3
EDUC 175	Achieving Information Literacy	1
HLTH 150	First Aid Industrial	1
	Required: 20	20

	Professional Technical Applications Coursework: 17 Required	
EDUC 251	Teaching Practicum 1	12
EDUC 299	Professional Technical Education Capstone Required: 17	5 17
	Recommended Electives: (33 credits chosen from following:)	
EDUC 252	Teaching Practicum 2	12
CAP 101	Introduction to Computers	5
EDUC 199	Professional Technical Specialization	12
EDUC 261	Industry Based Professional Development	3
EDUC 262	Advanced Industry Based Professional Development <sup>6</sup>	
EDUC 221	Leadership Development	3
EDUC 226	Learning Styles	3
EDUC 236	Occupational Analysis	3
EDUC 241	Learning & Adapting New Technologies	5
EDUC 246	The Adult Learner	3
EDUC 256	Program Management, Promotion, and Recruitment <sup>3</sup>	
EDUC 257	Current Topics For Professional Technical Educators <sup>5</sup>	
EDUC 275	Career & Technical Education Internship	3

Note: List of electives is not all-inclusive. Students should seek guidance regarding other coursework or acceptability of courses taken previously.

**Total (Approx. 6 quarters) 90 CRs**

## Electrician

### Electrician

Degree

COM 170	Oral & Written Communications	5
ELCN 101	DC Circuits	3
ELCN 102	AC Circuits	3
ELCN 103	Electrical Drawings and Blueprints	2
ELCN 104	Grounding and Bonding	2
ELCN 105	Transformers, Motors and Generators	3
ELCN 112	Basic NEC Calculations	3
ELCN 113	Advanced NEC Calculations	3
ELCN 131	DC Circuit Lab	3
ELCN 132	AC Circuit Lab	3
ELCN 142	Residential Wiring Projects	6
ELCN 143	Electrical Distribution	3
ELCN 151	Commercial Wiring Methods and Materials	6
ELCN 201	Electronics for Electricians	4
ELCN 202	Machine Control Fundamentals	4
ELCN 203	PLCs and VFDs	4
ELCN 214	Special Occupancies, Equipment & Conditions	4
ELCN 251	Commercial Wiring Projects	6
ELCN 261	Industrial Wiring Methods and Materials	5
ELCN 262	Industrial Wiring Projects	6
ELCN 263	Control Projects	5
ELCN 280	Alternative Electrical Sources	3
ELCN 281	Electricial Estimating and Design	3
EMTEC 105	Trade Safety	2

EMTEC 125	Applied Mechanics	4
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approx. 5 quarters)</b>	<b>105 CRs</b>

## Electro Mechanical Technology

### Electro Mechanical Technology

AAS

COM 170	Oral & Written Communications	5
ELCN 101	DC Circuits	3
ELCN 103	Electrical Drawings and Blueprints	2
ELCN 131	DC Circuit Lab	3
EMTEC 103	Electrical Circuits	5
EMTEC 105	Trade Safety	2
EMTEC 121	Fundamentals Of Hydraulic & Pneumatics	5
EMTEC 123	Hydraulics and Pneumatics Circuits	5
EMTEC 125	Applied Mechanics	4
EMTEC 126	Engineering Graphics	3
EMTEC 131	Rigging	3
EMTEC 133	Introduction to Machinery Skills	4
EMTEC 173	EMTEC Basic Welding	3
EMTEC 175	EMTEC Advanced Welding	2
EMTEC 201	AC Components and Measurements	5
EMTEC 205	Programmable Logic Controllers	4
EMTEC 211	Electrical Controls I	5
EMTEC 217	Instrumentation & Controls	5
EMTEC 218	Introduction to National Electrical Code	3
EMTEC 231	Bearings and Drives	5
EMTEC 232	Drive Alignment-Conveyors and Machining Systems	5
EMTEC 234	Valves, Pumps and Traps	5
EMTEC 235	Boilers and Combustion Technology	5
EMTEC 237	Computerized Maintenance and Management Systems	5
EMTEC 250	Capstone Project	9
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approximately 6 Quarters)</b>	<b>114 CRs</b>

## Electronics

### Electronics

Degree

CAP 101	Introduction to Computers	5
COM 170	Oral & Written Communications	5
CTE 292	Career Search	2
ELTR 100	DC 1	4
ELTR 105	DC 2	4
ELTR 110	AC 1	4

ELTR 115	AC 2	4
ELTR 120	Semiconductors 1	5
ELTR 125	Semiconductors 2	5
ELTR 130	OP-AMPS 1	3
ELTR 135	OP-AMPS 2	3
ELTR 140	Digital 1	5
ELTR 145	Digital 2	5
ETEC 150	Electronic Communications	8
ETEC 212	Microprocessors	6
ETEC 214	Nano Technology	5
ETEC 236	Photonics 1	5
ETEC 241	Photonics 2	5
ETEC 245	Mechantronics	6
ETEC 250	Principles Of Telecommunication	6
ETEC 281	Robot Technology	5
ETEC 282	Certified Electronics Technician Test Prep	3
MATH& 141	Precalculus I	5
PSYC 111	Interpersonal & Organizational Psychology Optional	5
ETEC 294	Work Based Learning	3
ETEC 295	Work Based Learning	6
<b>Total</b>	<b>(Approx. 6 quarters)</b>	<b>113 CRs</b>

## Heating, Ventilation, Air Conditioning & Refrigeration

### Heating, Ventilation, Air Conditioning & Refrigeration

Degree

COM 170	Oral & Written Communications	5
CREF 122	Fundamentals of Refrigeration	5
CREF 123	Fundamentals Lab I	5
CREF 126	Basic Electricity for HVAC/R	5
CREF 127	Fundamentals Lab II	5
CREF 132	Commercial Self Contained Systems	5
CREF 133	Commercial Self Contained Systems Lab	5
CREF 135	Commercial Ice Systems Theory and Applications	3
CREF 137	Commercial Ice Systems Lab	4
CREF 139	Commercial Ice Systems Interactive Learning	2
CREF 141	Air Properties and Psychometrics	3
CREF 143	HVAC System Design	3
CREF 145	Duct Layout and Fabrication	4
CREF 147	Applied Air Conditioning Systems	4
CREF 149	Applied Heat Pump Systems	4
CREF 221	Electric Heating Technology	4
CREF 223	Gas Heating Technology	7
CREF 225	Fuel Oil Heating Technology	4
CREF 227	Hydronic Heating Technology	5
CREF 231	Commercial/Industrial Refrigeration Applied Components	5
CREF 233	Commercial/Industrial Refrigeration Applied Components Lab	5
CREF 236	Commercial and Industrial Chilled Water Systems	3
CREF 237	Cooling Towers and Water Treatment	1
CREF 238	Cascade/Transport Refrigeration Systems	5

CREF 239	Absorption Refrigeration Systems	1
CREF 241	Control Theory For HVAC Automation Systems	5
CREF 242	Control Theory Lab	5
CREF 245	Commerical and Industrial Boilers	2
CREF 246	HVAC System Design and Commissioning	2
CREF 247	Job Prep and Internship, National Testing Prep	5
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approx. 6 quarters)</b>	<b>131 CRs</b>

## Instrumentation and Control

### Instrumentation and Control

Degree

COM 170	Oral & Written Communications	5
ELTR 100	DC 1	4
ELTR 105	DC 2	4
ELTR 110	AC 1	4
ELTR 115	AC 2	4
ELTR 120	Semiconductors 1	5
ELTR 125	Semiconductors 2	5
ELTR 130	OP-AMPS 1	3
ELTR 135	OP-AMPS 2	3
ELTR 140	Digital 1	5
ELTR 145	Digital 2	5
ENGT 122	CAD I: Basics	6
ETEC 150	Electronic Communications	8
INST 200	Intro to Instrumentation Profession	2
INST 205	Job Preparation I	1
INST 206	Job Preparation II	1
INST 230	Motor Control	3
INST 231	DCS (Distributed Control Systems)	3
INST 232	Plc Systems	3
INST 240	Pressure and Level Measurements	6
INST 241	Temperature and Flow Measurements	6
INST 242	Analytical Measurements	5
INST 250	Final Control Elements	5
INST 251	PID Controllers and Tuning	5
INST 252	Process Optimization and Control Strategies	4
INST 260	Data Acquisition Systems	4
INST 262	DCS and Field Bus	5
INST 263	Control Strategies	5
INST 290	Internship	5
MATH& 141	Precalculus I	5
PSYC 111	Interpersonal & Organizational Psychology	5
PHYS& 121	General Physics I	5
<b>Total</b>	<b>(Approx. 6 quarters)</b>	<b>134 CRs</b>



## Legal Administrative Assistant

### Legal Administrative Assistant

Degree

ACCT 141	Financial Accounting I	5
BUS 100	Electronic Math Applications	3
BUS 125	Records Management and Data Entry	5
BUS 150	Mathematics For Business	5
BUS 171	Technical Communications	5
BUS 188	Business English	5
BUS 200	Business Law	5
BUS 280	Assessment	1
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 106	Formatting With MS Word	4
CAP 107	Computerized Keyboarding/Skillbuilding	3
CAP 109	Computerized Keyboard Skillbuilding II	3
CAP 138	MS Word	5
CAP 142	MS Excel	5
CAP 148	MS Powerpoint	3
LGL 127	Legal Office Procedures	5
LGL 132	Legal Terminology/Transcription	5
LGL 211	Legal Document Processing	5
LGL 226	Internship	6
PSYC 111	Interpersonal & Organizational Psychology	5
	Departmental Electives	15
<b>Total</b>	<b>(Approx. 5 - 6 quarters)</b>	<b>105 CRs</b>

### Legal Assistant

Certificate

BUS 125	Records Management and Data Entry	5
BUS 150	Mathematics For Business	5
BUS 171	Technical Communications	5
BUS 188	Business English	5
BUS 200	Business Law	5
BUS 280	Assessment	1
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 106	Formatting With MS Word	4
CAP 107	Computerized Keyboarding/Skillbuilding	3
LGL 127	Legal Office Procedures	5
LGL 132	Legal Terminology/Transcription	5
LGL 211	Legal Document Processing	5
LGL 225	Internship	3
PSYC 111	Interpersonal & Organizational Psychology	5
	Departmental Electives	5
<b>Total</b>	<b>(Approx. 3 &amp; 1/2 quarters)</b>	<b>68 CRs</b>

## Medical Coding

### Medical Coding

#### Certificate

BIO 105	Essentials Of Anatomy & Physiology	5
BIO 127	Diseases Of The Human Body	4
BUS 230	Medical Office Procedures	5
HT 126	Fundamentals Of Medical Terminology OR	5
HT 129	Comprehensive Medical Terminology I	5
HT 135	Pharmacology For The Medical Office	2
HT 230	Medical Coding ICD-9	3
HT 240	Medical Coding CPT	4
HT 242	Medical Coding Applications	3
HT 250	Advanced Medical Coding OR	5
HT 265	Medical Coding & Billing Practicum	5
HT 262	Medical Coding Internship	2
HT 270	Excel For The Medical Office	2
<b>Total</b>	<b>(Approx. 4-5 quarters)</b>	<b>41 CRs</b>

## Medical Coding & Billing Generalist

### Medical Coding & Billing Generalist

#### Certificate

BIO 105	Essentials Of Anatomy & Physiology	5
BIO 127	Diseases Of The Human Body	4
BUS 100	Electronic Math Applications	3
BUS 223	Internship	3
BUS 230	Medical Office Procedures	5
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
HT 120	Medical Insurance Billing	5
HT 126	Fundamentals Of Medical Terminology OR	5
HT 129	Comprehensive Medical Terminology I	5
HT 135	Pharmacology For The Medical Office	2
HT 230	Medical Coding ICD-9	3
HT 240	Medical Coding CPT	4
HT 265	Medical Coding & Billing Practicum Recommended Electives	7
BUS 184	Customer Service	3
CAP 106	Formatting With MS Word	4
CAP 107	Computerized Keyboarding/Skillbuilding	3
CAP 142	MS Excel	5
BUS 125	Records Management and Data Entry	5
<b>Total</b>	<b>(Approx. 4 quarters)</b>	<b>58 CRs</b>

## Medical Receptionist

### Medical Receptionist

Certificate

BUS 125	Records Management and Data Entry	5
BUS 230	Medical Office Procedures	5
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 106	Formatting With MS Word	4
PSYC 111	Interpersonal & Organizational Psychology	5
	Departmental Electives	15
	Recommended elective HT 126 Fundamentals of Medical Terminology	
<b>Total</b>	<b>(Approx. 2 quarters)</b>	<b>41 CRs</b>

## Office Assistant / Receptionist

### Office Assistant

Certificate

BUS 100	Electronic Math Applications	3
BUS 125	Records Management and Data Entry	5
BUS 150	Mathematics For Business	5
BUS 171	Technical Communications	5
BUS 188	Business English	5
BUS 280	Assessment	1
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 106	Formatting With MS Word	4
CAP 138	MS Word	5
CAP 142	MS Excel	5
CAP 148	MS Powerpoint	3
PSYC 111	Interpersonal & Organizational Psychology	5
	Departmental Electives	13
<b>Total</b>	<b>(Approx. 3 quarters)</b>	<b>66 CRs</b>

### Receptionist

Certificate

BUS 100	Electronic Math Applications	3
BUS 125	Records Management and Data Entry	5
BUS 171	Technical Communications	5
BUS 188	Business English	5
CAP 101	Introduction to Computers	5
CAP 105	Computerized Touch Keyboarding	2
CAP 106	Formatting With MS Word	4
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approx. 2-3 quarters)</b>	<b>45 CRs</b>

## Precision Machining

### Precision Machining

Degree

COM 170	Oral & Written Communications	5
MACH 100	Introduction to Trade/Occupational Safety	1
MACH 101	Machine Technology I	2
MACH 102	Machine Technology II	2
MACH 111	Benchwork/Handtools	2
MACH 113	Machinery Handbook	1
MACH 119	Machine Fundamentals IA	5
MACH 120	Machine Fundamentals IB	5
MACH 122	Machine Fundamentals II	10
MACH 123	Machine Fundamentals III	8
MACH 125	Quality Control	2
MACH 131	Blueprint Reading I	4
MACH 132	Blueprint Reading II	4
MACH 162	Applied Math I	5
MACH 192	Job Preparation	1
MACH 201	Advanced Manufacturing Technologies	2
MACH 202	CNC Machine Theory	2
MACH 212	Metallurgy & Heat Treatment	3
MACH 213	Applied Machinerys Handbook	1
MACH 214	Tool and Cutter Grinding	3
MACH 215	Hydraulics	1
MACH 221	Machine Fundamentals IV	4
MACH 222	Machine Fundamentals V	10
MACH 241	Introduction to CNC Machining	8
MACH 242	CNC Programming/Operation	9
MACH 244	CNC/CAM Programming & Operations A	6
MACH 245	CNC/CAM Program & Operations B	6
MACH 262	Applied Mathematics II	5
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approx. 6 quarters)</b>	<b>127 CRs</b>

### Machine Operator

Certificate

COM 170	Oral & Written Communications	5
MACH 100	Introduction to Trade/Occupational Safety	1
MACH 101	Machine Technology I	2
MACH 102	Machine Technology II	2
MACH 111	Benchwork/Handtools	2
MACH 113	Machinery Handbook	1
MACH 119	Machine Fundamentals IA	5
MACH 120	Machine Fundamentals IB	5
MACH 122	Machine Fundamentals II	10
MACH 123	Machine Fundamentals III	8
MACH 131	Blueprint Reading I	4
MACH 132	Blueprint Reading II	4
MACH 162	Applied Math I	5
MACH 201	Advanced Manufacturing Technologies	2

MACH 213	Applied Machinerys Handbook	1
MACH 214	Tool and Cutter Grinding	3
MACH 241	Introduction to CNC Machining	8
MACH 262	Applied Mathematics II	5
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
<b>Total</b>	<b>(Approx. 4 quarters)</b>	<b>81 CRs</b>

## Process Technology

### Process Technology

Degree

CAP 101	Introduction to Computers	5
CHEM& 121	Intro To Chemistry	5
COM 170	Oral & Written Communications	5
ECON 103	Industrial Economics	5
ENGL 175	Technical Communications	5
MATH& 141	Precalculus I	5
PHYS& 121	General Physics I	5
PHYS& 122	General Physics II	5
PSYC 111	Interpersonal & Organizational Psychology	5
PTEC 101	Introduction to Process Technology	5
PTEC 102	Process technology I (Equipment)	6
PTEC 103	Safety, Health and Equipment I	5
PTEC 105	Process Technology II (Systems)	5
PTEC 110	Process Instrumentation I	6
PTEC 203	Safety, Health and Environment II	5
PTEC 205	Dynamic Process Control	5
PTEC 207	Quality Control	5
PTEC 210	Process Instrumentation II	6
PTEC 212	Industrial Processes and Equipment	5
PTEC 215	Process Technology III (Operations)	6
PTEC 217	Process Troubleshooting	5
	Electives: Take 6 credits in Special Topics, and 10 credits in Project/Practicum	
PTEC 190	Special Topics Food Processing	3
PTEC 191	Special Topics Job Search Skill	3
PTEC 192	Special Topics Pulp & Paper Processing	3
PTEC 193	Special Topics Upstream Process	3
PTEC 194	Special Topics Wastewater Treatment	3
PTEC 195	Special Topics Biodiesel	3
PTEC 196	Special Topics Green Energy	3
PTEC 197	Special Topics Cooperative Education	3
PTEC 270	Process Technology Project	5
PTEC 272	Process Technology Project II	5
PTEC 291	Process Technology Practicum/Internship	5
PTEC 290	Process Technology Practicum/Internship	5
<b>Total</b>	<b>(Approx. 6 quarters)</b>	<b>130 CRs</b>

## Radiologic Technology

### Radiologic Technology

Degree

HLTH 133	HIV/AIDS: Healthcare Professional	1
RT 101	Radiographic Positioning I	5
RT 108	Medical Informatics	4
RT 112	Patient Care In Radiology	4
RT 114	Leadership Seminar	1
RT 120	Imaging And Processing	4
RT 102	Radiographic Positioning II	5
RT 121	Radiographic Physics I	4
RT 131	Radiographic Clinic I	7
RT 210	Radiation Biology	4
RT 103	Radiographic Positioning III	5
RT 123	Radiographic Physics II	4
RT 132	Radiographic Clinic II	7
RT 133	Radiographic Clinic III	8
RT 122	Quality Assurance	3
RT 220	Radiographic Physics III	4
RT 231	Radiographic Clinic IV	10
RT 201	Adv Patient Procedures & Pathology I	4
RT 205	Radiology Pharmacology	3
RT 232	Radiographic Clinic V	10
RT 202	Adv Patient Procedures & Pathology II	4
RT 230	Registry Review & Employment Readiness	4
RT 233	Radiographic Clinic VI	10
<b>Total</b>	<b>(7 quarters)</b>	<b>115 CRs</b>

## Retail Management

### Retail

Certificate

ACCT 141	Financial Accounting I	5
BUS 150	Mathematics For Business or transfer level Math course	5
COM 170	Oral & Written Communications or ENGL& 101 English Composition I	5
CAP 101	Introduction to Computers	5
BUS 171	Technical Communications	5
HRM 110	Human Resource Management	5
MGMT 152	Small Business Management	3
MGMT 210	Supervision For The Office or PSYC 111 Interpersonal Psychology	5
MKT 100	Marketing Fundamentals	5
	Retail Management and Merchandising (5 credits) from an institution in Washington State	5
<b>Total</b>	<b>(Approx. 3-4 Quarters)</b>	<b>48 CRs</b>

## Surgery Technology

### Surgery Technology

Degree

COM 170	Oral & Written Communications OR	5
ENGL& 101	English Composition I	5
MATH& 107	Math In Society OR	5 0
MATH 100	Occupational Math	5
PSYC& 100	General Psychology OR	5
PSYC 111	Interpersonal & Organizational Psychology	5
HT 126	Fundamentals Of Medical Terminology	5
HLTH 133	HIV/AIDS: Healthcare Professional	
BIOL& 160	General Biology With Lab	5
BIOL& 241	Human A & P 1	5
BIOL& 242	Human A & P 2	5
HO 105	Pharmacology	2
SURG 120	Surgery Technology I	10
SURG 125	Surgery Technology Lab	10
SURG 133	Surgery Technology II	10
SURG 136	Surgery Tech Clinical Practice I	12
SURG 143	Surgery Technology III	6
SURG 145	Surgery Tech Clinical Practice II	10
<b>Total</b>	<b>(Approx. 5 quarters)</b>	<b>96 CRs</b>

## Surveying and Mapping

### Surveying and Mapping

Degree

COM 170	Oral & Written Communications	5
ENGT 122	CAD I: Basics	6
ENGT 128	Civil/Survey CAD 2	7
ENGT 132	MS Office Applications	5
ENGT 153	Intermediate GIS	7
ENGT 251	Land Desktop - Survey Add-On	8
ENGT 252	Land Desktop - Civil Add-On	8
MATH& 141	Precalculus I	5
PSYC 111	Interpersonal & Organizational Psychology	5
SURV 102	Fundamentals of Surveying I	7
SURV 103	Fundamentals of Surveying II	5
SURV 104	Construction and Highway Surveys	6
SURV 112	Public Lands Survey System	5
SURV 113	Boundary/Legal Principals	7
SURV 116	Survey Data Systems	4
SURV 140	Fundamentals of GIS & GPS	4
SURV 152	Zoning, Permitting and Platting	4
SURV 191	Professional Development and Safety	3

SURV 201	Advanced Survey Seminar	7
SURV 202	GPS Systems	7
SURV 204	Environmental Mapping	4
SURV 205	Advanced GIS Applications	7
<b>Total</b>	<b>(Approx. 6 quarters)</b>	<b>126 CRs</b>

## Veterinary Technician

### Veterinary Technician

Degree

CAP 101	Introduction to Computers	5
VET 120	Veterinary Math	2
VETT 101	Veterinary Nursing I	7
VETT 102	Veterinary Anatomy & Physiology I	5
VETT 103	Veterinary Medical Terminology	3
VETT 104	Veterinary Nutrition I	3
VETT 106	Microbiology, Virology, & Mycology	3
VETT 107	Small Animal Parasitology	3
VETT 108	Radiology I	6
VETT 109	Laboratory Sciences	6
VETT 105	Learning For A Lifetime	2
VETT 110	Veterinary Anatomy & Physiology II	3
VETT 111	Small Animal Medicine I	4
VETT 112	Veterinary Nursing II: Surgical	6
VETT 113	Immunology & Pharmacology I	6
VETT 114	Dentistry	4
VETT 115	Radiology II	4
VETT 118	Small Animal Medicine II	3
VETT 119	Advanced Clinical Lab Science	5
VETT 120	Anesthesia	5
VETT 121	Exotic Animal Medicine	3
VETT 125	Humanity of Veterinary Medicine	2
VETT 116	Large Animal Medicine	3
VETT 117	Veterinary Nursing III: Large	5
VETT 122	Veterinary Nutrition II	2
VETT 123	Veterinary Nursing IV	6
VETT 124	Specialty Medicine	3
VETT 130	Veterinary Clinical Work Experience	10
VETT 126	Pharmacology II	3
<b>Total</b>	<b>(Approximately 6 quarters)</b>	<b>119 CRs</b>

### Veterinary Assistant

Certificate

CAP 101	Introduction to Computers	5
VET 120	Veterinary Math	2
VETT 101	Veterinary Nursing I	7
VETT 102	Veterinary Anatomy & Physiology I	5
VETT 103	Veterinary Medical Terminology	3
VETT 104	Veterinary Nutrition I	3



VETT 106	Microbiology, Virology, & Mycology	3
VETT 107	Small Animal Parasitology	3
VETT 108	Radiology I	6
VETT 109	Laboratory Sciences	6
VET 117	Veterinary Assisting Internship	2
<b>Total</b>	<b>(Approximately 2 quarters)</b>	<b>45 CRs</b>

## Welding Technology - Aluminum/Steel, Pipe, Structural Fabrication

### Welding Technology-Aluminum/Steel Fabrication & Aluminum Welding, Pipe Welding, Structural Fabrication

Degree

	First Year: Welding	
COM 170	Oral & Written Communications	5
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
WLD 101	Welding Safety I	2
WLD 102	Welding Safety II	2
WLD 103	Hand and Power Tools	4
WLD 104	Career Opportunities for Welders	2
WLD 105	Thermal Cutting Processes	3
WLD 106	Print Reading I	2
WLD 107	Welding Leadership I	1
WLD 110	SMAW I	4
WLD 120	GMAW I	4
WLD 121	GMAW Aluminum I	4
WLD 130	FCAW I	4
WLD 140	GTAW I	4
WLD 141	GTAW Aluminum I	4
WLD 150	Steel Fabricating I	3
WLD 151	Aluminum Fabrication I	3
	Second Year: Aluminum/Steel Fabrication & Aluminum Welding	
WLD 206	Print Reading II	3
WLD 230	FCAW II	4
WLD 242	GTAW Aluminum II	5
WLD 252	Aluminum Fabrication II	5
	Department Electives	4
WLD 208	Metallurgy	3
WLD 222	GMAW Aluminum II	4
WLD 254	Steel Fabricating II	5
WLD 270	Aluminum Testing	4
	Department Electives	5
WLD 207	Welding Leadership II	1
WLD 209	Codes and Standards	2
WLD 271	WABO/ASME Testing I	6
WLD 295	Capstone	4
	Department Electives	6
	Second Year: Pipe Welding & Structural Fabrication	
WLD 206	Print Reading II	3
WLD 210	SMAW II	4

WLD 215	SMAW Pipe	4
WLD 254	Steel Fabricating II	5
WLD 256	Pipe Fitting I	5
	Pipe Welding Track	0
WLD 208	Metallurgy	3
WLD 257	Pipe Fitting II	5
WLD 262	GTAW Pipe Welding	6
	Department Electives	6
	Structural Fabrication Track	0
WLD 208	Metallurgy	3
WLD 230	FCAW II	4
WLD 261	Advanced Structural Steel Welding	6
	Department Electives	6
WLD 207	Welding Leadership II	1
WLD 209	Codes and Standards	2
WLD 271	WABO/ASME Testing I	6
WLD 295	Capstone	4
	Department Electives	6
<b>Total</b>	<b>(Approx. 6 quarters)</b>	<b>120-122 CRs</b>

## Industrial Welding

### Certificate

	First Year: Welding Technology	
COM 170	Oral & Written Communications	5
MATH 100	Occupational Math	5
PSYC 111	Interpersonal & Organizational Psychology	5
WLD 101	Welding Safety I	2
WLD 102	Welding Safety II	2
WLD 103	Hand and Power Tools	4
WLD 104	Career Opportunities for Welders	2
WLD 105	Thermal Cutting Processes	3
WLD 106	Print Reading I	2
WLD 107	Welding Leadership I	1
WLD 110	SMAW I	4
WLD 120	GMAW I	4
WLD 121	GMAW Aluminum I	4
WLD 130	FCAW I	4
WLD 140	GTAW I	4
WLD 141	GTAW Aluminum I	4
WLD 150	Steel Fabricating I	3
WLD 151	Aluminum Fabrication I	3
	Second Year: Aluminum/Steel Fabrication & Aluminum Welding	
WLD 206	Print Reading II	3
WLD 230	FCAW II	4
WLD 242	GTAW Aluminum II	5
WLD 252	Aluminum Fabrication II	5
	Department Electives	4
WLD 208	Metallurgy	3
WLD 222	GMAW Aluminum II	4
WLD 254	Steel Fabricating II	5
WLD 270	Aluminum Testing	4
	Department Electives	5

	Second Year: Pipe & Structural Fabrication	
WLD 206	Print Reading II	3
WLD 210	SMAW II	4
WLD 215	SMAW Pipe	4
WLD 254	Steel Fabricating II	5
WLD 256	Pipe Fitting I	5
	Pipe Welding Track	0
WLD 208	Metallurgy	3
WLD 257	Pipe Fitting II	5
WLD 262	GTAW Pipe Welding	6
	Department Electives	6
	Structural Fabrication Track	0
WLD 208	Metallurgy	3
WLD 230	FCAW II	4
WLD 261	Advanced Structural Steel Welding	6
	Department Electives	6
<b>Total</b>	<b>(Approx. 3 quarters)</b>	<b>101-103 CRs</b>

# 6

## COURSE DESCRIPTIONS

This addendum includes courses that are new, those that have been removed, or have changed.

### New Courses

#### ACRT 142 Shop Practicum I

3 cr

This course is self-paced allowing students to apply the fundamental principles and competencies learned in non-structural repair, structural damage repair, mechanical and electrical repair, plastics and adhesives, and painting and refinishing.

#### ACRT 260 Shop Practicum III

6 cr

This course is self-paced allowing students to apply the fundamental principles and competencies learned in non-structural repair, structural damage repair, mechanical and electrical repair, plastics and adhesives, and painting and refinishing.

#### BUS 188 Business English

5 cr

Business english focuses on the improvement of basic grammar and proofreading skills needed to effectively compose and edit written business documents. Standard english grammar rules and proofreading exercises are presented in order of increasing difficulty.

#### CREF 241 Control Theory For HVAC Automation Systems

5 cr

This course presents basic control theory for energy management and control systems. Systems covered in depth include electric, electronic, distributed digital control, pneumatic, VAV and VVT. Classroom activities are supplemented by concurrent course CREF 242 Control Theory Lab.

Prerequisites: CREF 120 series, 130 series, 140 series, 220 series, 230 series with minimum grade average of C for each series.

Prerequisite: CREF 120 series, 130 series, 140 series, 220 series, 230 series with minimum grade average of C for each series

#### CREF 247 Job Prep and Internship, National Testing Prep

5 cr

This course prepares students with the necessary skills to successfully create a professional resume and cover letter, practice interviewing for employment and research companies to work for. An internship opportunity to gain on the job experience is required as part of this course and often leads to a permanent position. Preparation and review for ARI national testing is also included as part of this course.

Prerequisites: CREF 120 series, 130 series, 140 series, 220 series, 230 series with minimum grade average of C for each series.

Prerequisite: CREF 120 series, 130 series, 140 series, 220 series, 230 series with minimum grade average of C for each series

CTE 292 Career Search

2 cr

Students will improve their career search skills including resume development and interview preparation. These skills will be assessed using simulated job application processes such as mock interviews and resume critiques.

CUL 152 Internship/Culinary Competition

9 cr

Students may elect to work in a pre-designated professional kitchen where they will successfully apply cooking skills and knowledge or, students may compete for one of five positions to represent Bellingham Technical Colleges Culinary Arts program in the Washington State American Culinary Federation student team competition.

Prerequisite: CUL 120, 140, 142, and 144

DET 240 Current Diesel Industry Topics I

6 cr

In consultation with the instructor, the student will design an individualized project to increase his or her knowledge and skills in specific areas of current diesel technology.

DET 242 Current Diesel Industry Topics II

6 cr

In consultation with the instructor, the student will design an individualized project to increase his or her knowledge and skills in specific areas of current diesel technology.

DHYG 112 Dental Hygiene Clinical Practice I

5 cr

First of six (6) sequential courses designed to provide clinical skills essential for the practice of dental hygiene. Skill development of patient appraisal, basic instrumentation, infection control and individualized preventive care is emphasized.

DHYG 113 Restorative Dentistry I

3 cr

A study of materials used in dentistry including practical applications and chairside assisting. Study includes general properties, composition, and manipulation of common dental materials. Ethical situations pertaining to treatment planning and the use of dental materials by dental hygienists.

DHYG 114 Principles of Dental Hygiene I

3 cr

First of seven (7) sequential courses providing theoretical background and skill development for the clinical practice of dental hygiene. Problem solving and critical thinking related to patient assessment and management. Communication skills and professionalism emphasized.

DHYG 115 Oral & Dental Anatomy

4 cr

Integrated anatomy, histology, and physiology of the head and neck region. Crown anatomy, root morphology and tooth development as applied to clinical situations.

DHYG 116 Oral Radiology I

4 cr

Theoretical background and practical application of dental radiography. Exposure techniques, processing, mounting, and evaluation of dental radiographs; principles of production, use of x-radiation, radiation safety procedures, and patient education.

DHYG 122 Dental Hygiene Clinical Practice II

5 cr

Theoretical background and practical application of dental radiography. Exposure techniques, processing, mounting, and evaluation of dental radiographs, principles of production, use of x-radiation, radiation safety procedures. Patient education.

DHYG 123 Restorative Dentistry II

3 cr

Properties of restorative dental materials. Practical experience using restorative dental materials. Placement and finishing of amalgam and composite restoration on typodonts.

DHYG 124 Principles of Dental Hygiene II

3 cr

Sequential course providing theoretical background for the practice of dental hygiene. Problem solving and critical thinking related to patient assessment and management.

DHYG 125 General Pathology

4 cr

Reaction of the human body to injury from physical, chemical, and biological agents. Inflammation, necrosis, cellular degeneration, disturbances of growth, circulation, and neoplasia. Selected diseases manifesting typical symptomology.

DHYG 126 Oral Radiology II

2 cr

Oral radiographic techniques for patients with special needs: extroral and occlusal projections. Interpretation of potential pathology and recognition of common dental restorative materials. Refinement of exposure techniques and evaluation. Coordinates with DHYG 122.

DHYG 127 Pharmacology

3 cr

The action of selected pharmaceutical agents. emphasis on drug interactions, routes of administration, and effects on body systems. recognition of potential impact on dental hygiene practice.

DHYG 132 Dental Hygiene Clinical Practice III

6 cr

Sequential course providing practice of dental hygiene skills. Problem solving and critical thinking related to patient assessment and management. Demonstration of professional growth and self-assessment.

DHYG 133 Restorative Dentistry III

2 cr

Properties of restorative dental materials and case studies for student clinic preparation. Practical experience using restorative dental materials. Placement and finishing of amalgam and composite restoration on typodonts and clinic patients.

DHYG 134 Principles of Dental Hygiene III

3 cr

Sequential course providing theoretical background for the clinical practice of dental hygiene. Emphasis on patient education and treatment planning related to patients age and stage. Nutrition and relationship to oral diseases.

DHYG 138 Periodontology

3 cr

Study of the periodontium emphasizing periodontal diseases, their classifications, and the etiological factors involved. Preventive measures within the scope and responsibility of the dental hygienist are correlated with basic sciences and clinical aspects of periodontal diseases.

DHYG 142 Dental Hygiene Clinical Practice IV

6 cr

Sequential course providing practice of dental hygiene skills. Problem solving and critical thinking related to patient assessment and management. Demonstration of professional growth and self assessment.

DHYG 143 Restorative Dentistry IV

2 cr

Properties of restorative dental materials and case studies for student clinic preparation. Practical experience using restorative dental materials. Placement and finishing of amalgam and composite restoration on typodonts and clinic patients.

DHYG 144 Principles of Dental Hygiene IV

3 cr

Sequential course providing theoretical background of dental hygiene skills. Literature review and research reports, oral cancer and tobacco cessation emphasized.

DHYG 145 Community Oral Health I

4 cr

A systematic approach to developing community oral health programs. Surveillance systems, epidemiology charts, health people 2010. Team work activities. Water fluoridation, sealants, fluoride rinse programs, varnish, mouthguards. Lesson plans. Steps in program planning. Health education theories.

DHYG 146 Medical & Dental Emergencies

3 cr

Equipment, drugs, signs and symptoms of medical emergencies that may occur in dental offices. Individual and team practice in carrying out emergency procedures in timed simulations: pulse, respiration, blood pressure, emergency drug setup, oxygen, rescue CPR and AED.

DHYG 149 Pain Management

4 cr

Exploration of pain control methods including local anesthesia and nitrous oxygen analgesia. Health history evaluation, local and systemic complications, anesthetic solutions, vasoconstrictors and drug interactions. Techniques of local anesthesia, including block and infiltration techniques are practiced. Administration of nitrous oxide is also practiced.

DHYG 212 Dental Hygiene Clinical Practice V

8 cr

Sequential course providing practice of dental hygiene skills. Problem solving and critical thinking related to patient assessment and management. Demonstration of professional growth and self assessment.

DHYG 213 Restorative Dentistry V

1 cr

Properties of restorative dental materials and case studies for student clinic preparation. Practical experience using restorative dental materials. Placement and finishing of amalgam and composite restoration on typodonts and clinic patients.

DHYG 214 Principles of Dental Hygiene V

3 cr

Sequential course providing theoretical background of dental hygiene skills. Quality assurance, advanced instrumentation theory, periodontal files, planning dental hygiene treatment for special needs patients. Research paper, case studies.

DHYG 215 Community Oral Health II

3 cr

Assessment indices, dental hygiene diagnosis. Program planning, funding and budgets, and legislation. Cultural issues in public health.

DHYG 219 Oral Pathology

3 cr

A study of oral diseases and manifestations of systemic diseases. Utilizes independent learning and internet resources.

DHYG 222 Dental Hygiene Clinical Practice VI

8 cr

Sequential course providing practice of dental hygiene skills. Problem solving and critical thinking related to patient assessment and management. Demonstration of professional growth and self assessment.

DHYG 223 Restorative Dentistry VI

3 cr

Properties of restorative dental materials and case studies for student clinic preparation. Practical experience using restorative dental materials. Placement and finishing of amalgam and composite restoration on typodonts and clinic patients.

DHYG 224 Principles of Dental Hygiene VI

3 cr

Sequential course providing theoretical background of dental hygiene skills. Ethics and jurisprudence, current therapeutic trends, insurance coding, scheduling and patient recall, hygiene assisting, and recordkeeping.

DHYG 225 Community Oral Health III

2 cr

Implementation of community program. Evaluation of program, workforce issues, and statistics. Board review.

DHYG 228 Oral Therapy

3 cr

Philosophy and theoretical background of advanced periodontal therapy. Soft tissue management planning. Periodontal surgery techniques. Management of other oral conditions: implants, supportive perio therapy.

DHYG 229 Dental Hygiene Seminar

1 cr

Review and practice for the National Dental Hygiene Board Examination.

DHYG 232 Dental Hygiene Clinical Practice VII

8 cr

Sequential course providing practice of dental hygiene skills. Problem solving and critical thinking related to patient assessment and management. Demonstration of professional growth and self assessment.



DHYG 233 Restorative Dentistry VII

1 cr

Properties of restorative dental materials and case studies for student clinic preparation. Practical experience using restorative dental materials. Placement and finishing of amalgam and composite restoration on typodonts and clinic patients.

DHYG 234 Principles of Dental Hygiene VI

3 cr

Sequential course providing theoretical background of dental hygiene skills. Focus is to meet needs of graduating dental hygiene students: current therapeutic trends, research, career opportunities and job search strategies. Financial planning, guest speakers. Dental practice act and licensure requirements. Application for board examinations. Specialized clinical skills.

DHYG 235 Community Oral Health IV

2 cr

Careers in public health, table clinics or poster presentations. Involvement in local projects, community health program completion, and evaluation. Leadership for community projects. Research.

ECED 170 Love & Logic Parenting

1.5 cr

Based on the highly acclaimed love and logic philosophy developed by Jim Fay and Foster Cline, this class unlocks the secrets of successful parenting. Participants in this class will learn the specific "how-tos" of successful parenting, not just theoretical concepts. The discussions and readings will provide parents with specific, tangible skills to use and a mind-set that allows them to develop a loving relationship while setting limits and boundaries.

ELCN 101 DC Circuits

3 cr

Prepares the electrician with the knowledge and skills to diagnose and repair electrical circuits. Emphasizes DC Electrical theory, structure of matter, electron theory and Ohm's law. Uses interactive software, dynamic lecture and discussion. Students will apply their basic skills of algebra during this course. Prerequisite or Corequisite: Math 100. Prerequisite: Math 100 or concurrent

ELCN 102 AC Circuits

3 cr

Prepares the electrician to diagnose and repair AC electrical circuits. Instruction emphasizes AC electrical theory, phase relationships with inductance, capacitance and resistance. Utilizes interactive software, dynamic lecture and discussion to develop knowledge and skills. Prerequisite: ELCN 101. Prerequisite: ELCN 101

ELCN 103 Electrical Drawings and Blueprints

2 cr

Introduction to and discussion of various types of electrical drawings including wiring, schematic, line, and construction diagrams. Prerequisite or Corequisite: ELCN 101. Prerequisite: ELCN 101 or concurrent

ELCN 104 Grounding and Bonding

2 cr

Standards, theory, and application of grounding and bonding applied to electrical systems. Prerequisite: ELCN 102 & ELCN 112. Prerequisite: ELCN 102 & ELCN 112

ELCN 105 Transformers, Motors and Generators

3 cr

Theory and operation of rotating electrical machines and transformers. Prerequisite: ELCN 102.  
Prerequisite: ELCN 102

ELCN 112 Basic NEC Calculations

3 cr

Wire, conduit, and box size requirements of the National Electrical Code. Beginning branch circuit calculations.

ELCN 113 Advanced NEC Calculations

3 cr

National Electrical Code required calculations for occupancy loads, transformer and motor circuits, services and feeders. Prerequisite: ELCN 112.

Prerequisite: ELCN 112

ELCN 131 DC Circuit Lab

3 cr

Emphasizing DC Electrical theory and Ohms law. Series and parallel circuits are analyzed at the test bench with hands-on experiments and standard test equipment. Prerequisite or Corequisites: EMTEC 105, ELCN 101, ELCN 103.

Prerequisite: EMTEC 105, ELCN 101, ELCN 103 or concurrent

ELCN 132 AC Circuit Lab

3 cr

AC electrical theory is examined and verified with hands-on experiments utilizing standard test equipment. Prerequisite or Corequisite: ELCN 102 & ELCN 131.

Prerequisite: ELCN 102 & ELCN 131 or concurrent

ELCN 142 Residential Wiring Projects

6 cr

Project based lab. student crews complete electrical construction projects including a model house wiring installation. Prerequisite or Corequisites: EMTEC 125, ELCN 101, ELCN 103.

Prerequisite: EMTEC 125, ELCN 101, ELCN 103 or concurrent

ELCN 143 Electrical Distribution

3 cr

Electrical lab installation of services, panelboards, switches, and feeders. Prerequisites or Corequisites: ELCN 104, ELCN 105, ELCN 113.

Prerequisite: ELCN 104, ELCN 105, ELCN 113 or concurrent

ELCN 151 Commercial Wiring Methods and Materials

6 cr

Installation of basic commercial electrical components and systems to meet recognized industry standards utilizing appropriate tools, wiring methods and materials. Prerequisites: ELCN 103 & ELCN 142

Prerequisite: ELCN 103 & ELCN 142

ELCN 201 Electronics for Electricians

4 cr

Diagnose and repair of industrial control devices emphasizing electronic theory and industrial solid state devices. Prerequisites: ELCN 102 & ELCN 103.

Prerequisite: ELCN 102 & ELCN 103

ELCN 202 Machine Control Fundamentals

4 cr

Diagnose and repair of industrial control devices emphasizing motor control theory, system wiring and diagrams. Prerequisites: ELCN 103, ELCN 105.

Prerequisite: ELCN 103, ELCN 105

ELCN 203 PLCs and VFDs

4 cr

In depth study of programmable logic controllers including configuring hardware and software for controlling devices that drive industrial machinery. Prerequisites: ELCN 201 & ELCN 202.

Prerequisite: ELCN 201 & ELCN 202

ELCN 214 Special Occupancies, Equipment & Conditions

4 cr

National Electrical Code requirements and limitations for specialized circumstances. Prerequisite: ELCN 113.

Prerequisite: ELCN 113

ELCN 251 Commercial Wiring Projects

6 cr

Project based lab. Student crews complete commercial electrical construction projects.

Prerequisite: ELCN 151.

Prerequisite: ELCN 151

ELCN 261 Industrial Wiring Methods and Materials

5 cr

Hands-on lab exploring design and construction of motor control enclosures, control relays, sensors & systems. Prerequisite: ELCN 151.

Prerequisite: ELCN 151

ELCN 262 Industrial Wiring Projects

6 cr

Project based lab. Student crews complete industrial electrical construction and maintenance projects. Prerequisite or Corequisite: ELCN 214, ELCN 251, ELCN 261.

Prerequisite: ELCN 214, ELCN 251, ELCN 261 or concurrent

ELCN 263 Control Projects

5 cr

Hands-on lab integrating motor controls, programmable logic controllers, variable frequency drives and industrial wiring distribution. Prerequisites or Corequisites: ELCN 203, ELCN 261.

Prerequisite: ELCN 203, ELCN 261 or concurrent

ELCN 280 Alternative Electrical Sources

3 cr

Explores new alternative electrical power sources from a design and build point of view with an emphasis on the NEC requirements. Prerequisites: ELCN 103, ELCN 105.

Prerequisite: ELCN 103, ELCN 105

ELCN 281 Electrician Estimating and Design

3 cr

Designing and estimating material and labor costs for a variety of electrical projects using catalog, the internet, and estimating software. Prerequisite: ELCN 113, ELCN 151.

Prerequisite: ELCN 113, ELCN 151

### ETEC 150 Electronic Communications

8 cr

This course provides a comprehensive introduction to electronic communication fundamentals and applications including modulation, transmitters, receivers, antennas, RF, digital communication, multiplexing, cellular and PCS.

### ETEC 212 Microprocessors

6 cr

This course offers students a combination of lecture and lab instruction to provide them with a basic understanding of microprocessor functions and operation.

### FISH 136 Spawning Techniques I

6 cr

Students will learn proper fish spawning techniques as utilized by state, federal, and private hatcheries. They will spawn fish at the college hatchery and other local hatcheries to become proficient in these skills.

### FISH 236 Spawning Techniques II

6 cr

Students will employ proper fish spawning techniques according to state, federal, and private hatchery procedures. They will transport eggs and milt, sterilize eggs, and use a moist air incubation unit to eye eggs and mark otoliths.

### INST 230 Motor Control

3 cr

in this course, you will learn the theory of electric motor operation and the practice of wiring and configuring electric motor control circuits. coverage of dc and three-phase ac electric motor controls as well as variable-frequency ac motor drives is included in this course.

### INST 232 Plc Systems

3 cr

in this course, you will apply programmable logic controllers (plc) to the control of real processes, as well as learn to effectively test and troubleshoot plc-controlled systems.

### INST 263 Control Strategies

5 cr

this course teaches the theory and practical application of process control strategies including cascade, feedforward, selector, and override controls. you will also explore common types of controlled processes found in industry to see how these algorithms are practically applied. a review of inst 260 (data acquisition systems) and inst 262 (dcs and fieldbus) is included in this course.

### MATH 098 Elementary Algebra

5 cr

This course will cover solving different forms of equations; manipulation of exponents and radicals as needed on the job; as well as factoring and graphing. It is equivalent to 1 year of high school algebra. This course is targeted for those students whose programs involve more algebra than included in BTCs occupational and technical math courses. This course will also serve as a prerequisite to intermediate algebra or as a refresher for those students who have had algebra in the past.

Prerequisite: Accuplacer Arithmetic score of 75 or higher or Math 90 with a grade of B- or higher

### MATH 099 Intermediate Algebra

5 cr

This course prepares students for entry into college level math courses. Topics include second degree equations and inequalities, relations and their graphs, exponential and logarithmic functions, and rational expressions. A graphing calculator is required.

Prerequisite: Math 098 with a grade of C or higher. Accuplacer algebra score of 75 or higher.

### PSYC 111 Interpersonal & Organizational Psychology

5 cr

Topics include assertiveness, customer relations, teamwork, problem-solving/conflict resolution, business and work ethics, organizational development/skills, employment rights and responsibilities, equity and cultural issues, decision making, motivation, and self-esteem.

Prerequisite: Accuplacer reading score of 71 or higher

### PTEC 291 Process Technology Practicum/Internship

5 cr

This elective course provides work experience in a Process Technology related environment so that students may expand their technical knowledge and skills. Specific performance skills and customized objectives will be developed for each student. Clock hours are available and may be repeated for clock hour credit.

### RT 108 Medical Informatics

4 cr

This course will investigate the integration of computer capabilities, information science and health care. This course will include key elements that are driving our national health care system to electronic records and the complex issues that arise in this transition. Issues addressed include methods required to optimize the acquisition, storage, retrieval, and use of information in health and biomedicine. Imaging informatics, PACS systems, RIS (radiology information systems) and HIS (hospital information systems) will be included in this course.

### SPCH 105 Interpersonal Comm

5 cr

Designed to introduce students to basic interpersonal communication theory. Emphasis on topics such as functions of communication, self-concept, perception, conversation skills, relationship development and maintenance, self-disclosure, assertiveness, and conflict management strategies.

### VETT 101 Veterinary Nursing I

7 cr

Upon completion of this module, the veterinary assistant and veterinary technician student will be able to safely and effectively obtain subjective and objective patient data that will allow accurate evaluation of the patient with minimum stress and maximum safety. Also, the veterinary assistant and veterinary technician student will be able to carry out therapeutic techniques in order to achieve maximum health benefits for the patient.

### VETT 102 Veterinary Anatomy & Physiology I

5 cr

Upon completion of this course, the veterinary assistant and veterinary technician student will be knowledgeable in: 1) the function of basic cell structure; 2) skeletal anatomy and physiology; 3) integument and muscular systems; 4) the respiratory and cardiovascular systems; 5) the hemolymphatic, gastrointestinal, endocrine, reproductive, urinary, and nervous systems.

### VETT 103 Veterinary Medical Terminology

3 cr

Upon completion of this module, the veterinary assistant and veterinary technician student will: understand terms of anatomical topography, nursing records and pharmaceutical, emergency and

surgical, medicine, and patient description terms; students should also be comfortable and accurate with metric system conversion.

#### VETT 104 Veterinary Nutrition I

3 cr

Given the characteristics of the patient, the veterinary assistant and veterinary technician student will understand appropriate and inappropriate dietary components for various life stages to promote optimal health. Also, the veterinary assistant and veterinary technician student will be able to explain nutritional recommendations to clients and reinforce owner compliance.

#### VETT 105 Learning For A Lifetime

2 cr

The goals of this module are to enable the student to learn the materials of veterinary technician medicine in a logical, goal-oriented manner. The veterinary technician student should be empowered with critical thinking and problem-solving skills. The veterinary technician student should be able to utilize a variety of reference media and assess that material for quality of content. Finally, the veterinary technician student should be able to tailor study skills to address their personal strengths and weaknesses with the goal of maximizing retention of material learned during the veterinary technician program and in continuing education pursuits throughout his or her career.

#### VETT 106 Microbiology, Virology, & Mycology

3 cr

Upon completion of this module, the veterinary assistant and veterinary technician student will be able to classify, collect, and culture bacteria. The veterinary assistant or veterinary technician student will also be knowledgeable in mycology and virology.

#### VETT 107 Small Animal Parasitology

3 cr

Upon completion of this module, the veterinary assistant and veterinary technician student will be able to: 1) identify and describe the life cycle of ecto- and endo-parasites, 2) understand the importance of parasites in veterinary and zoonotic disease, 3) understand the importance of, and demonstrate proper diagnostic fecal techniques, 4) identify parasite ova, adults and non-parasite artifacts, 5) review therapy and prevention of parasitic diseases.

#### VETT 108 Radiology I

6 cr

Given the characteristics of the patient and the radiographic study that has been requested, the veterinary assistant and veterinary technician student will be able to prepare the radiographic equipment, measure the animal using topographic landmarks and choose the appropriate radiographic technique to provide maximum diagnostic benefit in an appropriate and safe manner. The veterinary technician student will be able to assess the image quality and offer options to correct deficiencies.

#### VETT 109 Laboratory Sciences

6 cr

Upon completion of this module, the veterinary assistant and veterinary technician student will be able to properly handle and submit appropriate samples for diagnostic analysis to ensure maximum accuracy of results. Also, give the characteristics of the laboratory equipment; the student will determine proper maintenance and quality control procedures to ensure accurate results.

### VETT 110 Veterinary Anatomy & Physiology II

3 cr

Upon completion of this module, the veterinary technician student will be knowledgeable in: 1) unique equine features: head and gastrointestinal tract and reproductive tract, 2) unique ruminant features: gastrointestinal tract and reproductive tract and foot, and 3) avian anatomy.

### VETT 111 Small Animal Medicine I

4 cr

Upon completion of this module, the veterinary technician student will be knowledgeable in 1) the general approach to medical problems and become familiar with systemic diseases, 2) respiratory and cardiac diseases, 3) gastrointestinal diseases, 4) urinary tract diseases, 5) liver and pancreas diseases, 6) endocrine diseases, 7) neurologic diseases, 8) erythrocytes, platelets, and coagulation.

### VETT 112 Veterinary Nursing II: Surgical

6 cr

Given the characteristics of the patient and the surgical procedure to be performed, the veterinary technician student will be able to: 1) assess the patients pre-surgical status and tests and report to the veterinarian, 2) verify the owners consent to the procedure and its cost, 3) identify and apply appropriate surgical site preparation of hair clipping and decontamination, 4) position the patient appropriately for maximum surgical convenience and safety, and 5) maintain aseptic technique for surgical facility and equipment.

### VETT 113 Immunology & Pharmacology I

6 cr

Upon completion of this module, the veterinary technician student will be able to calculate the correct amount of medication in the prescribed form and administer it by the prescribed route as directed by a veterinarian. the veterinary technician student shall also be able to differentiate between normal and abnormal responses to medications and communicate necessary information to clients in order to maximize safety and compliance for effective treatment. finally, the veterinary technician student should be proficient at inventory control procedures, especially as applied to controlled substances.

### VETT 114 Dentistry

4 cr

Upon completion of this module, the veterinary technician student will be knowledgeable of 1) dental anatomy and pathophysiology, 2) dental radiographs, 3) dental instruments and usage, 4) large animal dentistry (equine and swine), and 5) small mammal dentistry and avian beaks.

### VETT 115 Radiology II

4 cr

Given the characteristics of the patient and the radiographic study that has been requested, the veterinary assistant and veterinary technician student will be able to prepare the radiographic equipment, measure the animal using topographic landmarks and choose the appropriate radiographic technique to provide maximum diagnostic benefit in an appropriate and safe manner. the veterinary technician student will be able to assess the image quality and offer options to correct deficiencies. also, given the characteristics of the patient and the non-radiographic imaging study requested, the veterinary technician student will properly prepare the imaging site and equipment and position the patient appropriately for the study.

### VETT 116 Large Animal Medicine

3 cr

Upon completion of this module, the veterinary technician student will be knowledgeable in 1) equine preventative health care, gastrointestinal diseases, respiratory and cardiac diseases, lameness, and reproductive and neonate diseases, 2) bovine gastrointestinal and reproductive diseases, and 3) important diseases of sheep, goats, and llamas.

### VETT 117 Veterinary Nursing III: Large

5 cr

Upon completion of this module, the veterinary technician student will be able to safely and effectively obtain subjective and objective patient data that will allow accurate evaluation of the patient with minimum stress and maximum safety. In addition, the veterinary assistant and veterinary technician student will be able to carry out appropriate therapeutic techniques in order to achieve maximum health benefits for the patient.

### VETT 118 Small Animal Medicine II

3 cr

Upon completion of this module, the veterinary technician student will be knowledgeable with the following relative small animal medicine: 1) lymphatics, spleen, and bone marrow, 2) reproductive disorders, 3) trauma medicine, 4) transfusion medicine, 5) sepsis, 6) diabetes mellitus and diabetic ketoacidosis (dka), and 7) acute abdomen stabilization.

### VETT 119 Advanced Clinical Lab Science

5 cr

Upon completion of this module, the veterinary technician student will be knowledgeable in the following advanced clinical laboratory sciences: 1) seology and antigen testing, 2) pulse oximetry, capnography, and blood gas analysis, 3) electrocardiogram (ekg), 4) arthrocentesis, csf tap, and bone marrow evaluation, 5) blood pressure evaluation, 6) thoracocentesis, abdominocentesis, and transtracheal wash, 7) blood collection for transfusion or blood culture, and 8) advanced hematology.

### VETT 120 Anesthesia

5 cr

Given the characteristics of the anesthetic patient and the procedure, (assisted by the veterinarian) the veterinary technician student will assess patient risk status and determine appropriate preanesthetic, anesthetic and pain management protocols. Also (assisted by the veterinarian), the veterinary technician student will choose appropriate monitoring equipment and techniques to maintain safe anesthesia, pain management and anesthesia recovery.

### VETT 121 Exotic Animal Medicine

3 cr

Given the unique requirements for exotic species, the veterinary technician student will safely obtain subjective and objective data that will allow evaluation of these animals. the veterinary technician student will be able to: identify husbandry issues and recognize normal from abnormal behaviors and vital signs.

### VETT 122 Veterinary Nutrition II

2 cr

Upon completion of this module, the veterinary student will be knowledgeable of 1) nutrition and recovery care, 2) therapeutic nutrition, 3) small mammal and avian nutrition, 4) nutrition of lizards, snakes, and turtles.

### VETT 123 Veterinary Nursing IV

6 cr

Upon completion of this module, the veterinary technician student will be able to safely and effectively obtain subjective and objective patient data that will allow accurate evaluation of the patient with minimum stress and maximum safety. also, the veterinary assistant and veterinary technician student will be able to carry out appropriate therapeutic techniques in order to achieve maximum health benefits for the patient.



VETT 124 Specialty Medicine

3 cr

Upon completion of this module, the veterinary technician student will be knowledgeable of the following veterinary medicine specialties: 1) ophthalmology, 2) dermatology, 3) oncology, 4) alternative and complementary medicine, 5) physical therapy, 6) cardiology, 7) theriogenology, and 8) hospice care.

VETT 125 Humanity of Veterinary Medicine

2 cr

Upon completion of this module, the veterinary technician student will be able to effectively contribute to the professional and efficient operation of the veterinary facility in order to provide maximum benefits to clients, patients, and the facility. also, the veterinary technician student will be able to effectively and accurately acquire and convey information to the client and to veterinary colleagues.

VETT 126 Pharmacology II

3 cr

Upon completion of this module, the veterinary technician student will be knowledgeable of 1) gastrointestinal drugs, 2) hormones, 3) anticonvulsants, 4) therapies for the following: hypertension, airway disease, allergic disease, heart disease, and behavior disorders.

VETT 130 Veterinary Clinical Work Experience

10 cr

A cooperative effort between practicing veterinary facilities and Bellingham Technical College to provide hands-on training. student will observe, assist, and perform tasks at selected facilities as directed by veterinary staff, using all knowledge gained during the program.

WLD 173 EMTEC Basic Welding

2 cr

This course covers basic industrial welding techniques and safety. From beginning competencies in SMAW and Oxy/Fuel cutting, through GMAW and plasma cutting processes. Basic fabricating principles will cover lap, fillet, and butt weld joint set-up.

### Changed Courses

ACCT 242 Financial Accounting II

Prerequisite: ACCT 141

ACCT 243 Financial Accounting III

Prerequisite: ACCT 242

ACCT 245 Payroll Procedures

Prerequisite: ACCT 141

ACCT 246 Computerized Accounting I

Prerequisite: ACCT 141

ACRT 130 Damage Analysis

3 cr

ACRT 140 Drive Train, Fuel, Brakes, HVAC

2 cr

ACRT 143 Shop Practicum II

ACRT 251 Structural Welding  
4 cr

ACRT 255 Suspension and Steering  
4 cr

ACRT 263 Restraint Systems  
2 cr

ACRT 266 Electrical System Repair  
3 cr

ACRT 270 Shop Practicum IV  
AUTO 141 Engine Performance 1

AUTO 151 Electricity/Electronics 1

AUTO 161 Steering And Suspension  
This course will focus on the fundamentals of suspension and steering including four-wheel laser alignment.

AUTO 213 HVAC  
This course covers the operation, diagnosis and repair of climate control systems found on the modern automobile. There will be extensive training on proper handling of refrigerants.

AUTO 219 Applied Automotive Concepts I  
The student is required to intern in a business that performs vehicle repairs. The student will obtain and maintain their own employment. The student is normally working with or under the direct supervision of a journeyman-level technician. It is recommended that the student's experience focus on the subject areas completed the last quarter on campus. The repair facility then becomes a real world extension of the classroom. Student work will be monitored by an instructor from BTC who will visit the work site periodically.

AUTO 250 Automatic Transmission/Transaxle  
This course will focus on theory, description and operation of automatic drive systems. This will include diagnosis and troubleshooting hydraulic, electrical/electronic controls and mechanical systems and practicing proper R&R techniques.

AUTO 255 Electricity/Electronics 2  
This course provides an introduction to various electronic systems found on a modern vehicle and a more in-depth study of starting/charging systems. This course will also cover body and chassis control systems such as ABS, body control computers, low tire pressure warning and airbags.

AUTO 275 Engine Performance 3  
This course offers instruction in the operation, diagnosis, and repair of fuel systems, ignition systems and emission control systems including exhaust gas analysis. In addition, there will be more in-depth study of the OBD2 system and how it relates to other systems on the vehicle. This course also includes an introduction to alternative fuel vehicles.

BCT 116 Building Layout  
3 cr

BCT 117 Concrete and Concrete Forming  
2 cr

BCT 130 Roof Framing  
6 cr

BCT 132 Stair Framing  
1 cr

BCT 136 Intro to House Wiring and Plumbing  
2 cr

BCT 137 Roof Sheathing, and Coverings  
1 cr

This course focuses on the processes and skills necessary to sheath, cover, and finish out the most common residential roof styles in use today. Topics covered include sheathing methods, roof coverings, flashing, and roof edge details.

BCT 138 Exterior Doors Windows and Skylights  
3 cr

This course focuses on the processes and skills necessary to install exterior doors. topics covered include door types and construction, hardware, storage and handling, exterior and interior doors and installation.

BCT 245 Project Management

BCT 251 Internship Building Construction  
9 cr

BIO 127 Diseases Of The Human Body  
4 cr

BIOL& 160 General Biology with Lab

This course provides introduction to basic concepts of biology, with an emphasis on the cells as the fundamental unit of life. Topics include cell structure, basic chemical and biochemical concepts, metabolism, cell division, principles of genetics, biological diversity, and methods of scientific inquiry and critical thinking. Course establishes foundation necessary for continued biology study, especially in human anatomy and physiology. Lab included.

Prerequisite: Accuplacer score of 86 or higher on sentence skills and 85 or higher on reading.

BIOL& 241 Human A & P 1

This course emphasizes the structure and function of the normal human body, which will serve as a foundation for future study in allied health fields. Lecture, group discussion, literature and internet research, and laboratory exercises are included. Acquisition of basic knowledge, application, and integration of concepts are emphasized. BIOL& 241 includes anatomical terminology, tissues, and integumentary, skeletal, muscular, nervous, and endocrine systems.

Prerequisite: BIOL 160 General Biology with Lab with a C or above or equivalent

BIOL& 242 Human A & P 2

This course emphasizes the structure and function of the normal human body, which will serve as a foundation for future study in allied health fields. Lecture, group discussion, literature and internet research, and laboratory exercises are included. Acquisition of basic knowledge, application, and integration of concepts are emphasized. BIOL& 242 includes circulatory, lymphatic, respiratory, digestive, urinary, and reproductive systems.

Prerequisite: BIOL& 241 Human A & P 1 with a C or above or equivalent

### BIOL& 260 Microbiology

Exploration of microbial world with a focus on medical microbiology for students in the health field. Areas of study include classification of microbes, life cycle, metabolism, control, and common infectious diseases of the human body. Laboratory component will demonstrate procedures to identify and control microbes.

Prerequisite: BIOL& 160 - General Biology with Lab with a C or above or equivalent and CHEM& 121- Intro to Chemistry with a C or above or equivalent or instructor permission.

### BUS 125 Records Management and Data Entry

This course is designed to help students learn the key filing rules and best records management practices. This course is also designed to help students learn proper data entry skills and improve their speed and accuracy at the computer. Computerized lessons analyze areas of weakness and provide appropriate drills for improvement.

Prerequisite: CAP 106 or instructor permission

### BUS 280 Assessment

### CHEM& 121 Intro To Chemistry

Introductory course for non-science majors, nursing, and environmental science students. Includes basic concepts of inorganic and organic chemistry, the nature of atoms, molecules and chemical bonds, chemical notation, chemistry of solutions, scientific reasoning, and problem-solving in the study of the theory and application of chemistry. Lab work is included.

### CONST 100 Computers in Construction

This course provides an overview of Microsoft Office 2007 and how it can be used in the field of Construction Management. You will learn how to create and modify Word documents, use formulas and charts in Excel, develop and maintain Access databases, run reports with Access, and produce a professional presentation using PowerPoint. (Note: CAP 101 Introduction to Computers may be substituted for CONST 100.)

### CONST 141 Blueprint Reading

3 cr

This course provides an introduction to reading and interpreting architectural drawings, layout, terminology, graphic standards and drafting fundamentals. Students learn how to locate information and cross reference with details, schedules, and specifications for clarification.

### CONST 200 Basic Estimating

3 cr

This course introduces students to the world of construction estimating and bidding including basic concepts, procedures, and terminology. Students will learn quantity take-off and pricing techniques, along with scope of work issues and costs associated with the major components of a construction project.

### CONST 201 Contracts and Construction Law

3 cr

This course provides an introduction to construction law specific to the residential and small commercial construction industry. The course focuses on contracts and subcontracts, business law basics, and construction law fundamentals.

### CONST 220 Project Planning and Scheduling

Students will use the critical path method (CPM) for planning and scheduling a construction project. They will develop and manipulate a computerized schedule for a construction project using the Microsoft Project software application.

### CONST 241 AutoCAD for Construction

#### CONST 250 Safety and Accident Prevention

Important WISHA/OSHA regulations that pertain to the construction industry will be covered along with accident prevention. Students will learn how to recognize hazards, implement safe work practices, create work rules, communicate expectations, and make job-site safety inspections.

#### CONST 251 Safety Plan Administration

This course will focus on job-site safety and potential liability for general contractors. Students will learn about management systems, procedures, and documentation that address WISHA requirements and provide a safe working environment. The effective integration of safety into management systems will be stressed. Prerequisite: CONST 250 or Instructor permission.

#### CONST 260 Construction Project Management

Students will learn about management concepts and techniques relevant to construction project organization, supervision, and inspection. The course will cover communication systems, contract documents, record keeping, dispute resolution, quality assurance, and schedule management.

#### CONST 280 Building Codes

This course provides an introduction to the International Building Code and applicable parts of the IRC including content, format, and application of building codes. In addition students will learn about definitions, administration, general requirements, occupancy classification, types of construction, and fire and safety requirements.

CREF 120 series, 130 series, 140 series, 220 series, 230 series with minimum grade average of C for each series.

#### CREF 122 Fundamentals of Refrigeration

This course presents safety in the workplace, the fundamentals of vapor compression refrigeration, HVAC/R tools, equipment and refrigerants. Students prepare for certification under Section 608 of the E.P.A. regulations. Lectures are supplemented by student's individual work on projects in the concurrent course.

#### CREF 123 Fundamentals Lab I

This Course places emphasis on safe work practices during system assembly, diagnostics, troubleshooting procedures and refrigerant handling. Students will learn how to install a simple control system on a refrigeration trainer. The concurrent course, CREF 122 is supplemented by student's individual work on projects in this course. Prerequisites: Concurrent Course CREF 122. Prerequisite: Concurrent Course CREF 122

#### CREF 126 Basic Electricity for HVAC/R

5 cr

This course presents the fundamentals of controls, motors, electrical theory and applications. Emphasis is placed on proper diagnostic and troubleshooting procedures. Lectures and bookwork are supplemented by student's individual work on projects in concurrent course CREF 127. Proper electrical codes are observed in the coursework. Prerequisites: CREF 122 & CREF 123.

#### CREF 127 Fundamentals Lab II

This course provides the opportunity to use the fundamentals of electricity, tools and equipment, controls, motors, electrical theory. Emphasis is placed on safe use of electricity while building electrical circuits on an electrical trainer and refrigeration trainer. Lectures in the concurrent course, CREF 126, are supplemented by student's individual work on projects in this course. Prerequisites: CREF 122 & CREF 123.

### CREF 132 Commercial Self Contained Systems

5 cr

This course analyses medium and low temperature refrigeration systems and components used in commercial applications. Lectures are supplemented by student's individual work on projects in concurrent course.

Prerequisite: Completion of CREF 120 series

### CREF 133 Commercial Self Contained Systems Lab

This course presents medium and low temperature refrigeration systems and equipment used in commercial applications. Emphasis is placed on trouble-shooting techniques on live equipment as installed in industry. The concurrent course, CREF 132 is supplemented by student's individual work on projects in this course.

Prerequisites: Completion of CREF 120 series.

### CREF 135 Commercial Ice Systems Theory and Applications

This course introduces the various types and makes of commercial ice production systems used in restaurants, institutions, and process applications. Wiring diagrams and sequence of operations are emphasized. Proper installation, maintenance and troubleshooting techniques are discussed.

Prerequisites: Completion of CREF 133, HR 180 or COM 170

### CREF 137 Commercial Ice Systems Lab

This course is applying concepts learned in CREF135 for commercial ice systems. The student will install, maintain, and diagnose problems on a variety of actual operating ice machines. Students will be exposed to different manufacturer's designs, as all are different. The student will verify proper production, learn how to build a wiring schematic, identify faults inserted by instructor and repair. Maintenance and proper cleaning and sanitation are also stressed in the coursework.

Prerequisites: Completion of CREF 133, HR 180 or COM 170

### CREF 139 Commercial Ice Systems Interactive Learning

This course utilizes the subject of commercial ice production for the student to research a particular commercial ice machine. The student will prepare and deliver a presentation to their peer group on one selected brand and model of ice machine, and essentially teach the peer group on the aspects of installation, wiring, sequence of operation and maintenance. Steps included in this lesson are; research, public speaking, audio visual aids, audience participation and self/peer-evaluation are addressed in this course. Prerequisites: Completion of CREF 133, HR 180 or COM 170.

Prerequisite: Completion of CREF 133, HR 180 or COM 170

### CREF 141 Air Properties and Psychometrics

This course prepares the student with information about air and its properties, moisture levels, enthalpy, volume, relative humidity and density. Air measurement techniques are also explored. Classroom discussion is aided by hands-on lab activities on operating equipment. Prerequisites: CREF 132 -139 (minimum combined C grade in CREF 130 series) Math100, HR 180 or COM 170.

Prerequisite: CREF 132 -139 (minimum combined C grade in CREF 130 series)

Math100, HR 180 or COM 170

### CREF 143 HVAC System Design

Understanding of the elements of proper HVAC system design is essential for the HVAC installer and service technician. This course focuses on Heat loss/Gain BTU requirements for buildings, ventilation rates, duct design and application, system selection and installation variables. The student will design a complete system using an existing structure or assigned blueprint plans.

Prerequisites: CREF 132 -139, CREF 141, HR 180 or COM 170.

Prerequisite: CREF 132 -139, CREF 141, HR 180 or COM 170

#### CREF 145 Duct Layout and Fabrication

4 cr

This entry level fabrication course is to prepare students for the HVAC sheet metal installation industry. Parallel line, radial line and triangulation layout techniques are utilized to develop sheet metal patterns of common fittings used in the installation of HVAC systems. Students will apply these techniques in the lab and fabricate assigned fittings. Prerequisites: CREF 132 -139, CREF 143, HR 180 or COM 170.

Prerequisite: CREF 132 -139, CREF 143, HR 180 or COM 170

#### CREF 147 Applied Air Conditioning Systems

This course prepares the learner to install, start-up, troubleshoot and diagnose problems in comfort cooling air conditioning systems. Emphasis is given to wiring techniques, proper refrigeration piping, controls, start-up and maintenance. Prerequisites: CREF 132 -139, CREF 145, HR 180 or COM 170.

Prerequisite: CREF 132 -139, CREF 145, HR 180 or COM 170

#### CREF 149 Applied Heat Pump Systems

This course prepares the learner to install, start-up, troubleshoot and diagnose problems in residential and commercial heat pump systems. Emphasis is given to wiring techniques, proper refrigeration piping, controls, start-up and maintenance. Integration of auxiliary heat components, balance point identification, cost analysis to other fuels, and geothermal systems are all introduced and applied in the lab. Prerequisites: CREF 132 -139, CREF 141- 147, HR 180 or COM 170.

Prerequisite: CREF 132 -139, CREF 141- 147, HR 180 or COM 170

#### CREF 221 Electric Heating Technology

4 cr

This course introduces electricity as a heat source for stationary and forced air systems. Emphasis is placed on electrical safety, BTU calculations, and airflow calculations, cost analysis, wiring diagrams, and troubleshooting techniques. Classroom discussion and hands on lab activities are designed to enable students to quickly identify system problems and propose solutions.

Prerequisites: CREF 132 -139, HR 180 or COM 170

#### CREF 223 Gas Heating Technology

This course provides hands-on theory and application of forced air and stationary gas heating systems used in residential and light commercial buildings. Natural gas (methane) and LPG systems are discussed and implemented. Emphasis is placed on diagnosis and troubleshooting techniques for service technicians.

Prerequisites: CREF 132 -139, CREF221, HR 180 or COM 170

#### CREF 225 Fuel Oil Heating Technology

This course provides hands-on theory and application of oil fired heating systems in homes and commercial buildings. Proper system installation, set-up, diagnosis and troubleshooting techniques are emphasized.

Prerequisites: CREF 132 -139, CREF221-223, HR 180 or COM 170

#### CREF 227 Hydronic Heating Technology

5 cr

This course explores the use of hydronics to heat residential and commercial buildings. Students will apply proper tools and techniques to identify components, design, install, maintain and troubleshoot problems in hydronic heating systems for residential and commercial use. Radiant heat systems and most types of commercially available fuels are utilized. Prerequisites: CREF 132 -139, CREF 221-225, COM 170.

Prerequisite: CREF 132 -139, CREF221-225, COM 170

### CREF 231 Commercial/Industrial Refrigeration Applied Components

This course expands on commercial refrigeration systems presented in CREF 132-139. Industrial systems such as chillers for RSW, supermarket refrigeration, commercial chillers for process control, industrial open drive compressors, and associated components are studied. Each ancillary component is analyzed for compatibility, proper selection, operation, need, energy savings and equipment reliability. Wiring diagrams are emphasized and diagnosis of failed components is also addressed. How the system operates as a whole is critical and students are encouraged to research new and innovative applications for these systems.

Prerequisites: CREF 227, CREF 149 (minimum combined C grade in CREF 140 and 220 series) HR 180 and COM 170

### CREF 233 Commercial/Industrial Refrigeration Applied Components Lab

Students apply the theory and application skills acquired in CREF231 to operating systems in the lab. A proper start-up technique, adjustments, wiring schematics and evaluation of the operation of the systems is emphasized. Students work in teams, and rotate shifts weekly, allowing each student the diversity to work with all team members. Safety is foremost as most of these systems are high voltage multi-phase systems. Students diagnose and solve instructor inserted problems into the systems, make repairs and invoice the instructor. Prerequisites: Concurrent with CREF 231.

Prerequisite: Concurrent with CREF 231

### CREF 236 Commercial and Industrial Chilled Water Systems

3 cr

Chilled water systems that are covered in depth include commercial/industrial applications of chilled water-cooling systems. Classroom activities are supplemented by student's individual and group work on lab projects including centrifugal and screw compressors, application of part winding start and 460 Volt Star Delta starter. Analyzing various systems for cost benefits, installation, service and proper annual maintenance procedures are emphasized.

Prerequisites: CREF 231 & 233.

### CREF 237 Cooling Towers and Water Treatment

This course presents a study of cooling towers and the treatment of the water used. Prerequisites: CREF 236.

### CREF 238 Cascade/Transport Refrigeration Systems

5 cr

Commercial systems that are covered in depth include ultra-low temp freezing systems and transport refrigeration systems. Classroom activities are supplemented by student's individual and group work on projects. Prerequisites: CREF 237.

### CREF 239 Absorption Refrigeration Systems

This course presents a continuation of the course of study of refrigeration systems. Commercial systems that are covered in depth are three types of absorption refrigeration systems.

Prerequisites: CREF 238.

### CREF 242 Control Theory Lab

5 cr

This course presents the student with opportunities to apply knowledge gained in concurrent course 241 Control Theory. System start-up, proper operation, calibration and electrical safety and codes are emphasized. Students work individually and in teams on projects. Prerequisites: CREF 120 series, 130 series, 140 series, 220 series, 230 series with minimum grade average of C for each series.

Prerequisite: CREF 120 series, 130 series, 140 series, 220 series, 230 series with minimum grade average of C for each series



#### CREF 245 Commercial and Industrial Boilers

This course presents commercial and industrial boilers and combustion controls, advanced flame safeguards, safety, code compliance and efficiency testing of gas and oil fired systems. Classroom activities are supplemented by the student's individual and group work on mocked-up and actual operating systems.

Prerequisite: CREF 242

#### CREF 246 HVAC System Design and Commissioning

This course presents an opportunity to review the design and commissioning of various types of building hvac energy management and control systems, and how the LEED certification process is implemented and steps to arrive at LEED certification. Air balancing is introduced and the basic requirements and documentation are explored, as well as requirements to become a certified individual.

#### CSC 136 Central Service Clinical

This course is to provide the student with practical experience through internship at hospitals and surgery centers in the area of central services and sterile processing. The students will focus on the methods of sterilization, cleaning, processing, packaging, distribution, storing, and inventory control of surgical instruments, trays, and equipment.

Prerequisite: SURG 120 with a C or above and instructor approval

#### CUL 110 Sanitation

This course provides students with understanding and practice of the principles of sanitation in order to maintain a safe and healthy environment for the consumer in the food service industry. Laws and regulations related to current FDA food code and adherence to them in the food service operation are addressed. ServeSafe course text and national certification examination are required.

#### CUL 112 Introduction to the Hospitality Industry

4 cr

This course provides a background and history of the hospitality industry and introduces the student to the broad spectrum of hospitality/food service organizations and career opportunities, cooking equipment, and hand tools utilized in the culinary arts industry. Safety Laws, regulations, and sound safety practices in the food service operation are addressed. Students must demonstrate safe equipment knowledge and operation. Introduction to weights and measures, their use in recipes, and recipe conversions are covered as well.

#### CUL 114 Culinary Skill Development I

7 cr

This course focuses on the foundational cooking techniques utilized in the culinary industry. Topics of study include basic mise en place skill development, foundational cooking methods, related terminology and additional foundational cooking preparations. Theory and lab topics include focus on meat cookery; the preparation of stocks, classical and contemporary mother sauces and derivative sauces, and the application of herbs, spices, and flavorings used in the professional kitchen today. Weekly labs provide students time to practice these foundational skills.

#### CUL 116 Meat Identification and Fabrication

This course provides an introduction to basic identification and use of hand of tools and equipment in meat and fish fabrication. Activities include composition, skeletal structures, muscle types and fabrication of meats, poultry, and seafood. Students will apply basic yield analysis, portion cost calculations, purchasing and receiving, basic cooking methods, inspection and USDA regulations, sanitation, and hygiene.

### CUL 122 Culinary Skill Development II

7 cr

This course is a continuation of Culinary Skill Development I, with study and practice focused on soups, salads, salad dressings, nuts, fruits, potatoes, grains, dry legumes and pasta preparations, sandwiches, cheese and dairy products, eggs and breakfast cookery and vegetarian cookery. Theory topics include common market forms, yield study and costing analysis, purchasing, receiving, handling and storage of these foundational food products. Through weekly labs students will practice applying foundational cooking methods to these food products.

### CUL 124 Banquet and Catering Management

In Banquet and Catering Management students will learn the fundamental skills and knowledge needed to set-up and run banquet and catering events. Theory subjects include plated and buffet banquet menus, buffet layout and design, catering contracts, event planning, organization, staffing, home meal replacement, private and personal chef industry, optional services and pricing formats. Weekly buffets provide hands on experience setting up and managing a full service banquet event.

### CUL 212 Breads, Cookies, and Tarts

Students learn the theory of chemically-leavened products such as quick breads and cookies; yeast-leavened products such as breads and laminated doughs; steam-leavened products such as puff dough, choux pastry, and decorative tarts. Students quick bread production will include muffins, scones, and biscuits. Cookie production will include bar, rolled, cut, piped, tuille, florentine, and snap. Bread and laminated dough products will include European yeast breads, flat breads, crackers, ciabatta, focaccia, croissants, danish, and brioche. In addition, students will produce french pastry including puff pastry (pate feuillette), choux pastry, tarts, fruit strudels, and phyllo dough.

### CUL 214 Pies, Cakes, and Desserts

Students learn the theory of creating pies, cakes, petit fours, and individual restaurant desserts. Students pie production will include fruit, cream, chiffon and custard, using different doughs and fillings. Cake production will focus on two-stage, sponge, and meringue-based methods to create a variety of filled and decorated cakes such as multi-layered tortes and charlottes. In addition, students will produce restaurant desserts to order, while learning about organization, assembly, component development, decoration, and menu creation.

### CUL 216 Introduction to Chocolates and Sugar Work

Students learn about chocolate and its wonderful use in the pastry world. Upon completion, they will be able to temper chocolate couverture, use tempered chocolate for dipping and molding, produce a variety of chocolate decorations, and make chocolate truffles. In addition, students will explore the proper methods for working with sugar and create basic decorative sugar work such as spun sugar, sugar cages, caramels, brittles, and Italian meringue displays.

### CUL 232 Food and Beverage Service Lab

4 cr

### DEN 105 Head and Neck Anatomy

This course provides an introduction to structure of head and neck region. Emphasis on anatomical structures of the skeletal, muscular, nervous, cardiovascular, and digestive systems as it pertains to the head and neck. Also includes an overview of microbiology and disease.

### DEN 110 Dental Foundations

This course provides the students with the foundation necessary to enter into the Bellingham Technical College dental clinic. The student will gain knowledge and skills required to maintain a safe dental environment. Also included are federal and state regulations regarding chemical use and infection control in the dental office. This course introduces basic concepts of radiology.

Students learn how to evaluate need for x-rays including: exposing, processing and mounting intraoral radiographs.

Changed

#### DEN 112 Chairside Assisting

This course provides the student with the knowledge and skills needed to operate and maintain typical equipment found in a dental operator. The student will gain an understanding of the design, function and maintenance of hand pieces, dental instruments and the dental unit water/vacuum line. This course will also focus on the theory and delivery of basic dental assisting skills, such as dental ergonomics, principles of team positioning, instrument transfer and oral evacuations.

#### DEN 114 Dental Sciences

This course focuses on related biomedical sciences that are the foundation of the dental assisting curriculum. Course content includes basic oral embryology and histology and tooth morphology. Concepts of oral pathology and oral inspection will be introduced.

#### DEN 115 Dental Clinic Practicum I

This clinical practicum course provides a clinical introduction for the student. Students will be assigned to a variety of weekly clinical responsibilities. They will begin their duties with a mentor and eventually move to independent competencies. Students will gain hands-on experience in front office, clinical coordination, darkroom techniques, bitewing x-ray exposure, patient management, and sterilization.

#### DEN 120 Patient Assessment

This course provides the student with the level of knowledge and skills required for the dental assistant to accurately collect and assess patient data. The student will have the opportunity to learn and practice the skills associated with collecting a health history, obtaining vital signs, assisting with medical emergencies, and assisting the dentist in the diagnostic stages of dental treatment. Pharmacology and anesthesia will be presented as it relates to dentistry and oral health. This course also includes an introduction on dental office administration, concentrating on specific job duties in the Bellingham Technical College dental clinic.

#### DEN 122 Chairside Assisting II

This course provides the student with appropriate skills to perform routine dental procedures. Instruction will include the use and manipulation of dental instrument setups, restorative materials, isolation techniques and how to effectively transfer instruments when assisting in a dental procedure.

#### DEN 124 – Radiography

This course is intended to introduce basic concepts of radiography and build on those skills and theoretical knowledge. Students will learn to correctly and safely evaluate need for x-rays, expose, process, and mount intraoral and extraoral radiographs utilizing a variety of techniques and with a variety of patient situations including pedodontics, edentulous and extraoral situations.

#### DEN 125 Dental Clinic Practicum II

#### DEN 130 – Preventative Dentistry

This clinical practicum course is intended to provide the student with actual patient care experience in the on-campus clinic for the purpose of implementation of the course clinical competencies. Students will be assigned to a variety of clinical responsibilities weekly. The course will identify the clinic competencies that must be successfully demonstrated in order for the student to advance to DEN 135. Actual hands-on experience in front office, clinical coordination, and assisting functions with the clinic dentist and dental hygienist will be facilitated by the instructional staff in the Bellingham Technical College dental clinic.

### DEN 132 Dental Specialties

This course provides the student with the knowledge and skills of the dental specialties; Prosthodontics, Oral Surgery, Orthodontics, and Pedodontics. This course will also instruct the student on the expanded duty of polishing restorations.

### DEN 134 Laboratory Procedures

This course enables students to develop skills in the use and manipulation of dental materials and lab equipment. Taking, pouring, separating, trimming, and finishing study models and preparing custom trays and bleach trays will be included in this course.

### DEN 135 Dental Clinic Practicum III

This clinical practicum course is a continuation of DEN 125. It provides hands-on experience required for front office, clinic coordination, and assisting functions with the clinic dentist and dental hygienist. The student must successfully demonstrate the advanced clinic competencies in order to be eligible to participate in the extramural experience.

### DEN 137 Extramural Practicum

8 cr

This course allows students to apply knowledge, skills, and professionalism gained in the Dental Assistant program. Expected behaviors regarding office policies, record keeping, and evaluation procedures, as an employee and team member, are explored. Ethical and legal concerns are also addressed. Students are then placed in a variety of local dental offices where they apply skills related to basic chairside, oral hygiene, and operative dentistry.

### DET 104 Hydraulic Brakes

Hands-on and theory of operation of hydraulic braking systems. Prerequisite: TRANS 101, 102, 103 or Instructors permission.

### ECED 120 CDA Essentials 1: Intro To ECE/Health, Safety & Nutrition

Prerequisite: Currently working in an early childhood setting (volunteer or paid)

### ECED 121 CDA Essentials 2: Child Development/Learning Environments

Prerequisite: Currently working in an early childhood setting (volunteer or paid)

### ECED 122 CDA Essentials 3: Working With Families/Professionalism

Prerequisite: Currently working in an early childhood setting (volunteer or paid)

### ECED 123 Prep For Child Development Associates (CDA) Assessment

Prerequisite: Currently working in an early childhood setting (volunteer or paid)

### ECED 135 Adult/child 1 Yr Dev - A

Adults and children attend this course together in an instructional program that focuses on one year old childrens development. developmentally appropriate activities are planned for adults and toddlers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

### ECED 136 One Yr Development - B

Adults and children attend this course together in an instructional program that focuses on one year old childrens development. developmentally appropriate activities are planned for adults and toddlers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

### ECED 137 One Yr Development - C

Adults and children attend this course together in an instructional program that focused on one year old childrens development. developmentally appropriate activities are planned for adults and

toddlers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

#### ECED 141 Two Yr Development - B

Adults and children attend this course together in an instructional program that focuses on two year old childrens development. developmentally appropriate activities are planned for adults and toddlers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

#### ECED 142 Two Yr Development - C

Adults and children attend this course together in an instructional program that focuses on two year old childrens development. developmentally appropriate activities are planned for adults and toddlers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

#### ECED 145 3 & 4 Yr Development - A

Adults and children attend this course together in an instructional program that focuses on preschoolers development. developmentally appropriate activities are planned for adults and preschoolers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

#### ECED 146 3 & 4 Yr Development - B

Adults and children attend this course together in an instructional program that focuses on preschoolers development. developmentally appropriate activities are planned for adults and preschoolers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

#### ECED 147 3 & 4 Yr Development - C

Adults and children attend this course together in an instructional program that focuses on preschoolers development. developmentally appropriate activities are planned for adults and preschoolers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

#### ECED 150 Adult/child 4-5 Yr Dev -A

Adults and children attend this course together in an instructional program that focuses on pre-kindergarten childrens development. developmentally appropriate activities are planned for adults and preschoolers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, health and safety, and school readiness.

#### ECED 151 4 & 5 Yr Development - B

Adults and children attend this course together in an instructional program that focuses on pre-kindergarten childrens development. developmentally appropriate activities are planned for adults and preschoolers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, health and safety, and school readiness.

#### ECED 152 4 & 5 Yr Development - C

Adults and children attend this course together in an instructional program that focuses on pre-kindergarten childrens development. developmentally appropriate activities are planned for adults and preschoolers to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, health and safety, and school readiness.

#### ECED 155 Toddler & Preschooler Dev -A

Adults and children attend this course together in an instructional program that focuses on caring for and teachings more than one and childrens development. developmentally appropriate activities are planned for adults and children from birth to age five to do together in class. Topics include

child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

#### ECED 156 Toddler & Preschooler Dev - B

Adults and children attend this course together in an instructional program that focuses on caring for and teachings more than one and childrens development. developmentally appropriate activities are planned for adults and children from birth to age five to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

#### ECED 157 Toddler & Preschooler Dev - C

Adults and children attend this course together in an instructional program that focuses on caring for and teaching more than one and childrens development. Developmentally appropriate activities are planned for adults and children from birth to age five to do together in class. Topics include child development, language and literacy, play, guidance and discipline, nutrition, and health and safety.

#### ECED 160 Positive Discipline

1.5 cr

Positive discipline is an interactive class for parents and teachers who want more cooperative, respectful, and joyful relationships with their children and students. Topics include ways to discipline (teach) with kindness and firmness at the same time, to help children achieve self-discipline and problem solving skills, to create an atmosphere of cooperation and mutual respect in your home and classroom, and to reduce power struggles.

#### ECED 162 Talk So Kids Will Listen

1.5 cr

#### EDUC 207 Teaching & Facilitating Learning: Level I

As an introduction to vocational teaching, college instructors begin or expand their training as a skilled educator. Instructor-learners learn about "successful beginnings," being a positive role model, and developing effective lessons based on identified student learning outcomes and competencies. New instructor-learners practice implementing a variety of instructional strategies and student assessments and learn ways to evaluate the progress or diverse learners to meet course objectives. Focus is on four primary modes of instruction: lecture, discussion, demonstration, small group work, and ways in which instructors act as facilitators of learning in their classrooms.

#### EDUC 209 Teaching & Facilitating Learning: Level II

This course guides instructors through the process of moving from a teacher-centered classroom to a student-centered learning environment and prepares instructor-learners to assist students to become a productive part of a learning community. Instructor-learners further examine and fine-tune multiple modes of instruction beyond those in Level I including class discussion, case studies, role-plays and student self-assessment. Using the universal cycle of learning with the four essential elements of preparation, presentation, practice, and performance, instructor-learners develop model lessons and instructional models as well as developing model facilitation practices for establishing learning communities within the classroom. This course is particularly helpful to experienced instructor-learners who wish to hone and apply their facilitation and instructional delivery skills.

#### EDUC 216 Assessment For Learning

Research in learning assessment has transformed the way educators approach the task of teaching. When developing and designing curriculum, instructors need to understand the paradigm shift between traditional, teacher-centered learning where the emphasis is placed on the one-way delivery of content, and active, student centered learning where the emphasis shifts to the

collaborative, integrated learning process facilitated by the teacher. In this course, instructor-learners will demonstrate assessment literacy and will design and develop assessments to be integrated into the learning process, including performance-based and portfolio assessments. These assessments—prior assessment, formative assessment, summative assessment—will be linked directly to clearly developed learning outcomes and will inform the process of curriculum evaluation and revision. Effective testing and evaluation linked to course outcomes and grading policies will also be discussed.

#### EDUC 252 Teaching Practicum 2

This course will provide opportunities for instructors to enhance their professional skills and provides a viable vehicle for attainment of the skills required of a fully qualified instructor. Evidence of learning and skill-building will be evidenced via project portfolio. In a classroom, lab, and workplace learning environment, the student instructor will establish and implement learning outcomes focused on assessment, new technologies such as distance learning, hybrid courses, electronic instruction.

#### EDUC 256 Program Management, Promotion, and Recruitment 3 cr

#### EDUC 257 Current Topics For Professional Technical Educators 5 cr

#### EDUC 261 Industry Based Professional Development 3 cr

#### EMTEC 101 Basic Electricity

This is the first in a series of courses designed to prepare the industrial electrician, millwright, or maintenance technician with the knowledge and skills to diagnose and repair electrical circuits. Instruction emphasizes DC electrical theory, structure of matter, electron theory, electricity, ohms law, series and parallel circuits. Utilizing state-of-the-art computer interactive software, dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry. Text and basic tools required.

#### EMTEC 103 Electrical Circuits

The student will continue DC electrical theory and Analysis including Kirchhoff's laws. Wiring diagrams and other circuits will be examined in detail. AC theory, vectors, capacitance, inductance and vector analysis is examined. Generators, motors and common motors will be discussed. Utilizing state-of-the-art computer interactive software, dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry. Text and basic tools required.

Prerequisite or Corequisite: ELCN 101 DC Circuits & EMTEC 105 Trade Safety

#### EMTEC 105 Trade Safety 2 cr

The topics will be on health and safety core rules, Material Safety Data Sheets, fall protection, confined spaces, Lock out/Tag out requirements, ladder, scaffolding and portable power tools as well as navigating the Washington State Labor and Industries website. Utilizing dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry.

#### EMTEC 123 Hydraulics and Pneumatics Circuits

This course covers principles and operating characteristics of hydraulic and pneumatic systems, and components. Utilizing state-of-the-art computer interactive software, dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for the fluid power

industry. Text and basic tools required. Prerequisite: EMTEC 121 Fundamentals of Hydraulic & Pneumatics

#### EMTEC 125 Applied Mechanics

4 cr

Studies introduce material strengths relating to forces such as tension, sheer and torque. Students develop knowledge and skills through application of pulley ratios and levers. Instruction also covers properties of materials such as solids, liquids and gasses. Utilizing dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry. Text and basic tools

Prerequisite or Corequisite: EMTEC 105 Trade Safety

#### EMTEC 133 Introduction to Machinery Skills

Studies introduce shop safety and guidelines, the use of measuring tools, basic shop equipment and a study of vertical milling machines and lathes. Supervised hands on project will be produced by the student. Utilizing dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry. Text and basic tools required.

Prerequisite: EMTEC 126 Engineering Graphics

#### EMTEC 175 EMTEC Advanced Welding

2 cr

This course builds upon EMTEC Basic Welding, including SMAW, GMAW, GTAW, FCAW, and Oxy/Fuel and Plasma Cutting, and basic fabricating principles. This course offers preparation for WABO certification.

Prerequisite: WLD 173 EMTEC Basic Welding

#### EMTEC 201 AC Components and Measurements

In this course the student will continue to study AC power factors. A more in depth study of motors and their connections will be discussed. Basic motor controls and Programmable Logic Controllers will be introduced, electronic measurement. Utilizing state-of-the-art computer interactive software, dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry. Text and basic tools required.

Prerequisite: EMTEC 103 Electrical Circuits

#### EMTEC 205 Programmable Logic Controllers

This course is an introductory study of Programmable Logic Controllers, including configuring hardware and software, general construction and operation as well as programming.

Prerequisite: EMTEC 211 Electrical Controls I or Permission of Instructor

#### EMTEC 211 Electrical Controls I

This course introduces the student to the components used in today's control systems. Control schematics are introduced with hands-on use of various multi meters in troubleshooting relay logic circuits. Utilizing state-of-the-art computer interactive software, dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry. Text and basic tools required. Prerequisite: EMTEC 201

#### EMTEC 217 Instrumentation & Controls

This course introduces the student to sensor indicators and transmitters. Measurement, gages, flow sensors and other industrial sensing devices will be studied in this class. Utilizing state-of-the-art computer interactive software, dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry. Text and basic tools required. Prerequisite: EMTEC 212 Electrical Controls and Troubleshooting.



#### EMTEC 218 Introduction to National Electrical Code

The student is introduced to some of the common industrial applications of the National Electrical Codes such as grounding, bonding, wire sizing, conduit selection, junction box selection, motor overload protection and current protection selection. Utilizing state-of-the-art computer interactive software, dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry. Text and basic tools required.

Prerequisite: EMTEC 201 AC Components and Measurements

#### EMTEC 234 Valves, Pumps and Traps

The student will examine the principals of pumps, valves, and steam traps. Students will apply mechanical skills in the rebuilding of basic pump types along with diagnosing problems. Utilizing state-of-the-art computer interactive software, dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry. Text and basic tools required. Prerequisite: EMTEC 123 Hydraulics and Pneumatics Circuits

#### EMTEC 237 Computerized Maintenance and Management Systems

In this course the student will examine the tools of predictive maintenance, vibration analysis, oil analysis, thermography and ultrasonic's will be covered. Utilizing state-of-the-art computer interactive software, dynamic lecture and discussion, and hands-on practice, students develop knowledge and skills for careers in industry. Text and basic tools required.

#### EMTEC 250 Capstone Project

This course is designed as a practicum in the industrial maintenance field to allow the student to get hands on experience in the maintenance profession. This practical experience can be in various trades such as electrical, millwright, power plant, general plant maintenance or specific industrial/commercial maintenance in the student's workplace. Prerequisite: Assigned by Instructor

#### EMTP 103 Intermediate Life Support And Airway

A preliminary course for entry into the Paramedic Program, the ILS/AW Course will teach the student the skills or airway management and the recognition and treatment of shock at the Intermediate Level. Course work includes basic and some advanced pharmacology, assessment/management of the cardiac patient, basic EKG interpretation, drug and fluid therapies.

#### ENGL& 101 English Composition I

Prerequisite: CPT score of 86 or higher on sentence skills and 85 or higher on reading. Word processing knowledge required.

#### ENGT 122 CAD I: Basics

6 cr

#### ENGT 123 Descriptive Geometry

6 cr

#### ENGT 153 Intermediate GIS

#### ENGT 210 CAD III: Advanced Applications

6 cr

#### ENGT 211 Project Design 1

4 cr

#### ENGT 212 Project Design 2

3 cr

ENGT 213 Project Design 3  
4 cr

ENGT 215 Statics  
10 cr

Changed  
ENGT 223 Structural Detailing  
6 cr

ENGT 224 Process Pipe Drafting  
9 cr

ENGT 251 Land Desktop - Survey Add-On  
8 cr

ENGT 252 Land Desktop - Civil Add-On  
8 cr

ETEC 245 Mechantronics

ETEC 250 Principles Of Telecommunication  
6 cr

FISH 194 Fisheries Current Topics  
In consultation with the instructor, students will develop customized objectives and individualized projects to increase their skills and knowledge in specific areas of current fisheries technology.

FISH 195 Fisheries Internship  
This course provides practical application through work experience for students in a field of their choice with employees in industry. Students will be able to demonstrate their skills and work habits to prospective employers.

FISH 196 Fisheries Current Topics  
In consultation with the instructor, students will develop customized objectives and individualized projects to increase their skills and knowledge in specific areas of current fisheries technology.

FISH 197 Fisheries Current Topics  
In consultation with the instructor, students will develop customized objectives and individualized projects to increase their skills and knowledge in specific areas of current fisheries technology.

FISH 198 Fisheries Current Topics  
In consultation with the instructor, students will develop customized objectives and individualized projects to increase their skills and knowledge in specific areas of current fisheries technology.

HLTH 103 CPR: Adult Heartsaver  
0.5 cr

HLTH 131 HIV/AIDS For Counselors  
0.5 cr

HLTH 133 HIV/AIDS: Healthcare Professional  
1 cr

#### HO 105 Pharmacology

This course is designed to assist the surgical technologist to provide safe and effective care to surgical patients by participating in activities that help to identify, manage, and apply general terminology to medications and solutions used in operating room settings.

#### HO 125 Intro to Medical Terminology

This course is an introduction to medical word building. Students study words that pertain to body systems, anatomical structures, medical processes and procedures and a variety of diseases. Students will continue their development of medical terminology throughout their Surgery Technology Program.

#### HO 127 Healthcare Provider CPR

0.5 cr

This 6 hour basic life support course is designed for healthcare providers and includes adult one- and two-rescuer CPR, pediatric one-rescuer CPR, and barrier devices. Successful written and mannequin skill evaluation and attendance at all sessions is required to receive card. Course now includes an introduction to automatic external defibrillation.

#### HT 270 Excel For The Medical Office

2 cr

#### INST 205 Job Preparation I

Preparation for employment, including resume preparation, cover letter writing, job search engine use, and interviewing skills.

#### INST 231 DCS (Distributed Control Systems)

3 cr

#### INST 240 Pressure and Level Measurements

6 cr

In this course you will learn how to precisely measure both fluid pressure and fluid solids level in a variety of applications, as well as accurately calibrate and efficiently troubleshoot pressure and level measurement systems.

#### INST 241 Temperature and Flow Measurements

6 cr

#### INST 242 Analytical Measurements

This course teaches the basic principles of process analysis including pH, electrical conductivity, turbidity, and chemical constituency. A review of INST 240 (pressure and level measurement) and INST 241 (temperature and flow measurement) is also included in this course.

#### INST 250 Final Control Elements

5 cr

#### INST 251 PID Controllers and Tuning

5 cr

#### INST 252 Process Optimization and Control Strategies

4 cr

This course teaches more advanced loop tuning techniques as well as advanced process control strategies including cascade, feed forward, ratio, and model-based control algorithms. You will also explore common types of controlled processes found in industry to see how these algorithms are practically applied. A review of INST 250 (final control elements) and INST 251 (PID controllers and tuning) is included in this

#### INST 260 Data Acquisition Systems

This course reviews digital communication and analog/digital conversion theory learned in the first year (Core Electronics) courses, building upon that foundation to explore industrial data busses (including Ethernet) and indicating, data logging, and SCADA systems.

#### INST 262 DCS and Field Bus

5 cr

This course teaches the basic principles of distributed instrumentation, including both distributed control systems (DCS) and Field/ bus" instruments. Safety instrumented system (SIS) concepts and components are also covered here. A review of INST 260 (data acquisition systems) and INST 261 (programmable logic controllers) is included in this course.

#### INST 290 Internship

5 cr

#### IT 142 Client/Desktop Operating Systems II

10 cr

#### IT 210 Network Security Fundamentals

10 cr

#### IT 240 UNIX Administration & Configuration

10 cr

#### IT 270 Internship

9 cr

#### MACH 101 Machine Technology I

2 cr

#### MACH 102 Machine Technology II

2 cr

Covers saws and sawing, machine speeds, feeds, setup, and secondary drilling operations.

Prerequisite: MACH 100, MACH 101, and MACH 121.

#### MACH 113 Machinery Handbook

#### MACH 120

Prerequisite: MACH 120

#### MACH 122 Machine Fundamentals II

A continuation of MACH 120, lathes, mills, drilling, setup, and secondary operations. Prerequisite:

#### MACH 123 Machine Fundamentals III

8 cr

Prerequisite: MACH 122

#### MACH 131 Blueprint Reading I

4 cr

#### MACH 132 Blueprint Reading II

4 cr

Covers the use of sectional views, thread specifications, dimensioning auxiliary views, geometric tolerance gearing, welding symbols, processes and skill development in reading prints by using sketching techniques. Prerequisite: MACH 131

MACH 162 Applied Math I

5 cr

Prerequisite: MACH 100

MACH 192 Job Preparation

Prerequisite: COM 170

MACH 201 Advanced Manufacturing Technologies

2 cr

MACH 202 CNC Machine Theory

MACH 212 Metallurgy & Heat Treatment

Basic information about the manufacture of steels, the composition of selected metals, and the heat treating and hardness testing of steels.

Prerequisite: completion of third quarter requirements and MACH 201

MACH 215 Hydraulics

Designed to promote hydraulic principles, fundamental system components, and hydraulic oils.

Prerequisite: Completion of three quarters in program.

MACH 221 Machine Fundamentals IV

4 cr

MACH 222 Machine Fundamentals V

Includes advanced instruction of turning, milling, and grinding machines. The selection and use of carbide cutting tools will be emphasized.

MACH 241 Introduction to CNC Machining

8 cr

Changed

MACH 242 CNC Programming/Operation

Teaches manual programming and operation of the CNC milling and lathe machines and basic G&M commands. Prerequisite: completion of all theory, blueprint reading, and mathematics related to the program.

MACH 244 CNC/CAM Programming & Operations A

6 cr

This is the first course in a two part series which focuses on advanced programming related to CNC, including macros, subroutines and computer-aided programming using the Master CAM programming system. Course introduces students to 2D CAM Geometry.

MACH 245 CNC/CAM Program & Operations B

6 cr

This is the second course in a two part series which focuses on advanced programming related to CNC, including macros, subroutines and computer-aided programming using the Master CAM programming system. This course introduces students to 3D Design and Solids.

MACH 262 Applied Mathematics II

5 cr

Prerequisite: MACH 162

### MATH 100 Occupational Math

This course covers fractions, decimals, percents, ratios & proportions, English & metric measurement systems, geometry, and algebra. The contents will include relevant technical applications and the use of a calculator. Text required.

Prerequisite: Accuplacer Arithmetic score of 38 or higher or Math 85 with a grade of B- or higher

### MATH& 107 Math In Society

College level coverage of practical applications in many fields of study. Topics will include probability, statistics, finance, geometry, graphing, growth & decay, and right triangle trigonometry.

Prerequisite: Math 99 - Intermediate Algebra with a C or above or BTC College Level Math score of 32 or higher.

### MATH& 141 Precalculus I

The focus of this course will be functions. Students manipulate and graph linear, polynomial, rational, exponential, logarithmic, and quadratic functions. This course will also cover systems of equations, matrices/determinants, and their applications.

Prerequisite: MATH 99 Intermediate Algebra with a C or above or BTC College Level Math score of 32 or higher.

### MATH& 142 Precalculus II

The majority of this course will cover trigonometry. Students will explore trigonometry functions, right and oblique triangle trigonometry, graphing, trigonometry identities, laws of sine and cosine as well as trigonometric application problems. This course will also cover vectors in the plane and in space, along with parametric equations, polar coordinates and graphs of polar equations.

Prerequisite: Precalculus I - MATH& 141 with a C or above.

### NA 101 Nursing Assistant Essentials

Provides the student an opportunity to study the essential theoretical content necessary to meet the OBRA nursing assistant objectives. Fundamental caregiving skills are taught with an emphasis on safety and activities of daily living. While studying the care necessary for an individual of any age, a primary focus is placed on the care of the elderly, including rehabilitation and death and dying.

### NUR 101 Common Health Needs

Prerequisite: Admission to the Practical Nursing Program.

### NUR 101A Common Health Needs 1A

8 cr

The first course introduces the student to the concepts of health and wellness. A foundation for practice is established through the study of the history, legal parameters, and ethics of nursing. Common healthcare needs throughout the life span are addressed system by system, utilizing the nursing process as a problem solving technique essential to the practice of nursing as both an art and science. An emphasis is placed on safety as it relates to nursing practice and includes 7 hours of HIV/AIDS for healthcare workers. Further emphasis is placed on the needs of the elderly, including the process of death and dying.

Prerequisite: Admission to the Practical Nursing Program.

### NUR 101B Common Health Needs 1B

This course is a continuation of NUR 101A whereby the student will integrate the concepts of health and wellness into the foundation of practice. Common healthcare needs throughout the life span are addressed system by system, utilizing the nursing process as a problem solving technique essential to the practice of nursing as both an art and science. An emphasis is placed on safety as it relates to nursing practice. Further emphasis is placed on the needs of the elderly, including the process of death and dying. Prerequisite: NUR 101A, NUR 102A

### NUR 102 Nursing Practice 1

Concurrent with NUR 101, NUR 102 provides the student with an opportunity to learn and practice basic nursing skills, including assessment techniques, non-parenteral medication administration, and the fundamental techniques of physical care, such as bathing, positioning, and the use of proper body mechanics. An emphasis is placed on the care of the elderly and rehabilitation. Includes both college lab time, and clinical experiences in a long-term care facility.

Prerequisite: Admission to the Practical Nursing Program.

### NUR 102A Nursing Practice 1A

Concurrent with NUR 101A, NUR 102A provides the student with an opportunity to learn and practice basic nursing skills which includes fundamental techniques of physical care such as bathing, positioning and the use of proper body mechanics. An emphasis will be placed on care of the elderly and rehabilitation. This course includes both college lab time and clinical experiences in long term facilities. Prerequisite: Admission to the Practical Nursing Program.

### NUR 102B Nursing Practice 1B

3 cr

Concurrent with NUR 101B, NUR 102B provides the student with an opportunity to learn and practice basic nursing skills including assessment techniques and non-parenteral medication administration. An emphasis is placed on the care of the elderly and rehabilitation. This course includes both lab time and clinical experiences in long term facilities.

Prerequisite: NUR 101A, NUR 102A

### NUR 105 Pharmacology for PNs

An introduction to the basic concepts required by nurses to provide safe and effective pharmacotherapeutics. The metabolism and actions of drugs, with an emphasis on absorption, duration of action, distribution in the body, and methods of excretion will be studied. Also introduces the nursing implications, including the principles of safe drug administration, documentation, and client teaching. Students are expected to demonstrate competency in arithmetic computations, and to apply knowledge of related vocabulary and medical symbols. Prerequisite: MATH 98 or MATH 99 and BIOL& 160 with a C or above or equivalent.

### NUR 121 Common Health Disturbances 1

#### NUR 121A Common Health Disturbances 1A

This course prepares the student to assist people with common health disturbances in single or multiple systems within the body. The systems studied include the respiratory, cardiovascular, gastrointestinal, genitourinary, endocrine, and musculoskeletal systems. In addition, fluid and electrolyte disturbances, surgical asepsis, and preoperative care are addressed. All care is approached utilizing the nursing process. An emphasis is placed on young, middle, and elderly adults. Prerequisite: NUR 101B, NUR 102B

#### NUR 121B Common Health Disturbances 1B

8 cr

This course is a continuation of NUR 121A which includes the study of respiratory, cardiovascular, gastrointestinal, genitourinary, endocrine and musculoskeletal systems, fluid and electrolyte disturbances, surgical asepsis and preoperative care. All care is approached utilizing the nursing process. An emphasis is placed on young, middle, and elderly adults.

Prerequisite: NUR 121A, NUR 122A

### NUR 122 Nursing Practice 2

Prerequisite: NUR 101, NUR 102

### NUR 122A Nursing Practice 2A

Concurrent with NUR 121A, NUR 122A provides the student with an opportunity to learn and practice the skills associated with the care of patients with some common health disturbances in the respiratory, cardiovascular, gastrointestinal, genitourinary, endocrine and musculoskeletal systems, or a fluid and electrolyte disturbance. Sterile techniques are covered as well as subcutaneous and intramuscular injection techniques. An opportunity to care for a client throughout the peri-operative process is also provided. Included is college lab time and clinical experiences in an acute care facility. Prerequisite: NUR 101B, NUR 102B

### NUR 122B Nursing Practice 2B

3 cr

Concurrent with NUR 121B, NUR 122B provides the student with an opportunity to learn and practice the skills associated with the care of patients with some common health disturbances in the respiratory, cardiovascular, gastrointestinal, genitourinary, endocrine and musculoskeletal systems, or a fluid and electrolyte disturbance. Sterile technique is covered as well as subcutaneous and intramuscular injection techniques. An opportunity to care for a client throughout the peri-operative process is also provided. Included is lab time and clinical experiences in an acute care facility. Prerequisite: NUR 121A, NUR 122A

### NUR 131 Common Health Disturbances 2

Prerequisite: NUR 121, NUR 122

#### NUR 131A Common Health Disturbances 2A

This course prepares the student to assist people with common health disturbances in single or multiple systems within the body. The systems studied include neurological, immune and integumentary systems. In addition, students will study clients with mental health disturbances, common pediatric disturbances and normal mother/infant care. Nursing in both the clinical and office setting will be introduced, as well as basic intravenous therapy. In preparation for entry into nursing practice, students will explore the various leadership skills required of a Licensed Practical Nurse (LPN). Prerequisite: NUR 121B, NUR 122B

#### NUR 131B Common Health Disturbances 2B

NUR 131B is a continuation of NUR 131A. The systems studied include the neurological, immune and integumentary systems. In addition, students will study clients with mental health disturbances and normal mother/infant care. Nursing in both the clinical and office setting will be introduced, as well as intravenous therapy. In preparation for entry into nursing practice, students will explore the various leadership skills required of a License Practical Nurse (LPN). Prerequisite: NUR 131A

### NUR 132 Nursing Practice 3

Changed

#### NUR 211 Nursing Dimensions I

This course focuses on the role transition and role differentiation between Licensed Practical Nurse (LPN) and Registered Nurse (RN). The student is introduced to critical thinking and leadership skills required for professional nursing. Content focuses on understanding human health patterns while supporting the physiological changes of the client in the role of the Registered Nurse. Primary topics include priority setting, delegation, NCLEX plan, conflict management, physical assessment, and alteration in mental health, fluid, electrolyte and acid base balance, cardiac, respiratory and renal systems across the life span (adult, aging, pediatric and pregnant mother). Integrated concepts are advocacy, cultural perspectives, communication, nutrition, pharmacology, and health education.

Prerequisite: Admission to the Registered Nursing Program.



#### NUR 212 Client Care Management Practice I

Concurrent with NUR 211, NUR 212 provides the student with an opportunity to examine and evaluate current experience, determine clinical proficiencies, and through the process of portfolio development, expand clinical nursing expertise within the acute care setting (medical or surgical areas, pediatrics and mental health).

Prerequisite: Admission to the Registered Nursing Program.

#### NUR 221 Nursing Dimensions II

Prerequisite: NUR 211, 212

#### NUR 222 Client Care Management Practice II

Prerequisite: NUR 211, 212

#### NUR 231 Nursing Dimensions III

This course continues to focus on concepts of leadership such as quality and cost-effectiveness of care, interdisciplinary collaboration, and emerging care delivery models. Primary topics include alteration in integumentary, gastro-intestinal, musculo-skeletal and sensory neuro across the life span (adult, aging, pediatric and pregnant mother). Integrated concepts are nursing process, advocacy, cultural perspectives, communication, nutrition, pharmacology, and health education.

Prerequisite: NUR 221, NUR 222

#### NUR 234 Capstone Clinical

Concurrent with NUR 231, NUR 234 is an individual clinical assignment intended to strengthen the students clinical skills and assist them to make the final transition from Licensed Practical Nurse (LPN) to Registered Nurse (RN). The clinical objectives will be determined by self assessment of clinical experience, further education within this program, and the Nurse Practice Act. Completion of portfolio will be presented as culmination of the students experience.

Prerequisite: NUR 221, NUR 222

#### PHYS& 121 General Physics I

Introduction to mechanics and physical reasoning strategies and investigation methods for students majoring in technically oriented fields not requiring a calculus based physics course. Newtons laws, work and energy, kinematics conservation principles. Computer interfaced laboratory investigations, technical writing, problem solving, mathematical reasoning and scientific method of inquiry skills will be emphasized. Prerequisite: Math& 141 - Precalculus I

#### PHYS& 122 General Physics II

Second in a three-course survey of physics for allied health, building construction, biology, forestry, architecture, and other programs. Topics include fluids, heat, thermodynamics, electricity, and magnetism. Laboratory work is integral to the course. Prerequisite: Phys& 121 - General Physics I

#### PMP 130 Project Management Integration Project

Prerequisite: PMP 120

#### PSYC& 100 General Psychology

An overview of the factors affecting behavior including topics related to theories of learning, the senses, perceptions, nervous system, emotions, personality theory, motivation, abnormal behavior and therapy, and social psychology. Prerequisite: CPT score of 86 or higher on sentence skills and 85 or higher on reading. Word processing knowledge required.

#### PSYC& 200 Lifespan Psychology

A systematic study of the developmental processes in humans from conception to late adulthood. Special emphasis will be given to the topics of physical development, cognitive development, and personality/social development.

Prerequisite: PSYC& 100 - General Psychology with a C or above or equivalent.

#### PTEC 190 Special Topics Food Processing

In this course, students will be introduced to the various methods and processes for producing foods. These will include the operations of heating, drying, reacting, mixing, separating, and granulating. The equipment necessary to provide and control these operations, quality control, safety, and jobs available in this industry will also be covered. Students will also do a project related to food processing. This course may be either live, a hybrid, or on-line.

#### PTEC 191 Special Topics Job Search Skill

In this course, students will be introduced to the various skills and steps in finding a job in a process technology company. The course will cover resume writing, completion of applications, taking evaluation tests, portfolio preparation, and interviewing. Students will interview each other as well as be interviewed by panels of professionals. Students will also do a research project on a process technology company.

#### PTEC 192 Special Topics Pulp & Paper Processing

In this course, students will be introduced to the various methods and processes for producing pulp and paper. These will include the operations of feedstock preparation, digestion, bleaching, drying, reacting, mixing, separating, and pressing. The equipment necessary to provide and control these operations, quality control, safety, and jobs available in this industry will also be covered. Students will also do a project related to pulp and paper processing. This course may be either live, a hybrid, or on-line.

#### PTEC 193 Special Topics Upstream Process

In this course, students will be introduced to the various methods and processes for locating and producing oil. In addition, the geology of the formation of oil deposits will be covered as well as an overview of the regulations for oil exploration. The methods and operations include exploration, drilling, completion of the well. The equipment necessary to provide and control these operations, quality control, safety, and jobs available in this industry will also be covered. Students will also do a project related to upstream processing. This course may be either live, a hybrid, or on-line.

#### PTEC 194 Special Topics Wastewater Treatment

In this course, students will be introduced to the various methods and processes for wastewater treatment. These will include the steps of preliminary, primary, secondary and tertiary treatment which involve the operations of sedimentation, biological and chemical reacting, thickening, drying, filtration, mixing, and disinfection. The equipment necessary to provide and control these operations, quality control, safety, and jobs available in this industry will also be covered. Students will also do a project related to pulp and paper processing. This course may be either live, a hybrid, or on-line.

#### PTEC 203 Safety, Health and Environment II

Continued instruction in the application of concepts presented in Safety, Health, & Environment I with an emphasis on emergency response concepts. The student will demonstrate appropriate response to emergency situation; recognize hazardous situations for personnel, environment, and the community; and apply team skills in response to emergency situations.

#### RAD 250 Mammographic Theory I

Prerequisite: ARRT registered or registry-eligible technologist

#### RAD 251 Mammographic Theory II

This course includes course work in normal breast anatomy and physiology, breast pathology, sectional anatomy of the breast, routine positioning in screening and diagnostic imaging, special views in positioning and procedures, and interventional procedures.

Prerequisite: ARRT registered or registry-eligible technologist

### RAD 252 Mammographical Clinical

Students are responsible for securing an ACR accredited mammographic facility for their clinical experience. One Registered Mammographer must be identified and agree to coordinate student experiences. This program does not provide clinical affiliates, however we reserve the right to approve or disapprove clinical sites. The clinical experience will occur during the same quarter as didactic instruction.

This course requires students to use the ARRT Mammography Clinical Experience Documentation Form to record clinical competencies and repetition of these procedures. Forms must be filled out accurately to gain acknowledgement of any procedure. Procedures must be verified by the initials of the supervising Mammographer or Mammography Radiologists. The student must provide the names and addresses of each mammographer initialing this form. Program approval of these professionals must be obtained before acquiring signatures.

### RHI 110 Fundamentals of Home Inspection & Field Training

### RT 101 Radiographic Positioning I

5 cr

Prerequisite: Acceptance into Radiologic Technology Program

### RT 102 Radiographic Positioning II

5 cr

### RT 103 Radiographic Positioning III

5 cr

### RT 121 Radiographic Physics I

This course is designed to establish a knowledge base in atomic structure and terminology. Included are the nature and characteristics of radiation, x-ray production and the fundamentals of photon interactions with matter. An introduction to the principles of radiation protection is included. Lab activities will provide application for the course theories.

### RT 122 Quality Assurance

3 cr

This course is designed to examine principles of radiology quality assurance. Principles related to quality assurance will include differentiation between quality improvement/management, quality assurance and quality control with elements of a department quality assurance program. Lab activities will provide application of theories presented in class.

### RT 123 Radiographic Physics II

4 cr

This course is designed to establish a knowledge base in radiographic, fluoroscopic, mobile and tomographic equipment requirements and design. Content includes manual versus automatic exposure control, equipment calibration, beam restriction, and recognition of malfunctions.

### RT 131 Radiographic Clinic I

7 cr

This course consists of two clinical assignments of eight-hour work shifts per week. Students are assigned clinical experience in a radiology department to complete clinical competencies correlating with academic coursework.

### RT 132 Radiographic Clinic II

7 cr

RT 133 Radiographic Clinic III

8 cr

This course consists of clinical assignments correlating with current academic course work. Assignments will include rotations at hospitals, clinical or doctors offices in regional areas. Rotations may include day, evening or weekend schedules.

RT 201 Adv Patient Procedures & Pathology I

4 cr

RT 202 Adv Patient Procedures & Pathology II

4 cr

RT 205 Radiology Pharmacology

3 cr

This course will provide basic concepts of pharmacology. Concepts included are pharmacokinetic and pharmacodynamic principles of drugs, categories specific to drugs, actions and side effects of select medications, and legal and ethical status of radiographer's role in drug administration.

RT 210 Radiation Biology

4 cr

RT 220 Radiographic Physics III

4 cr

RT 230 Registry Review & Employment Readiness

4 cr

RT 231 Radiographic Clinic IV

10 cr

This course consists of clinical assignments correlating with current academic course work. Assignments will include rotations at hospitals, clinics or doctors offices in regional areas. Rotations may include day, evening or weekend schedules.

RT 232 Radiographic Clinic V

10 cr

RT 233 Radiographic Clinic VI

10 cr

This course consists of clinical assignments correlating with current academic course work. Assignments will include rotations at hospitals, clinics or doctors offices in regional areas. Rotations may include day, evening or weekend schedules.

SAL 140 Marketing Research & Territory Management

Presents the structure and use of market research in sales territory management decision making. Students learn data analysis and interpretation skills that lead to sound decisions in personal territory management

SURG 120 Surgery Technology I

An introduction to surgical technology where the student will gain theoretical and practical knowledge of general equipment, instrumentation, surgical team member roles, and health care facilities and their management. Includes physical, psychological, and ethical aspects of patient care; principles of aseptic technique, sterilization, and safety in operating room.

Prerequisite: Acceptance into the Surgery Technology Program.

### SURG 125 Surgery Technology Lab

Principles and techniques of operating room procedures. Includes surgical scrub techniques, gowning and gloving, aseptic and sterile technique, creating and maintaining a sterile field and basic instrumentation usage. Hands on practice of scrub role functions.

Prerequisite: Acceptance into the Surgery Technology Program.

### SURG 136 Surgery Tech Clinical Practice I

Prerequisite: SURG 120, SURG 125, and HO 105.

### SURG 143 Surgery Technology III

Focus on legal, personal and professional responsibilities of a surgical technologist and related accrediting agencies, and job seeking skills. Includes patient care emergencies and sciences for the operating room.

Prerequisite: SURG 133, SURG 136.

### SURV 102 Fundamentals of Surveying I

Emphasis is placed on familiarization with the different types of surveys and their purpose and teaches the student to be able to differentiate between "accuracy" and "precision." It teaches the student to measure distances in a vertical direction and relate these measurements to a datum plane or elevation from sea level. Course also teaches the student how to measure directions from known points to find or establish other points and will enable the student to gain necessary skills in operating surveying instruments.

### SURV 103 Fundamentals of Surveying II

Emphasis on field work with the Total Station and Digital Level. A traverse will be run and adjusted and a topo made of the enclosed ground.

### SURV 140 Fundamentals of GIS & GPS

### SURV 205 Advanced GIS Applications

An advanced course in desktop mapping focusing on the use of the extensions in Geographic Information Systems applications.

### TQM 200 Six Sigma - Statistical Analysis Tools

You will learn when to use many of the proven Six Sigma problem solving methods and statistical tools to contribute to the success of your organization. This Six Sigma Green Belt course follows the DMAIC (Define, Measure, Analyze, Improve, Control) model and teaches the soft skills required to participate in projects effectively.

### VET 117 Veterinary Assisting Internship

2 cr

This course is for students, enrolled in the Veterinary Technician Program who choose the "early out" option and are pursuing a certificate in Veterinary Assistant. Students need to have completed VETT 101, 102, 103, 104, 106, 107, 108 and 109, as well as VET 120. Students are to gain work experience as a Veterinary Assistant in an appropriate setting.

Prerequisite: VET 120, VETT 101, 102, 103, 104, 106, 107, 108, 109 with C (2.0) grade or better.

### VET 120 Veterinary Math

Prerequisite: Admission to Veterinary Technician program.

### WLD 101 Welding Safety I

Introduction to the general welding industry, shop safety and orientation to the metal shop environment. Also electrical and compressed gas cylinder safety and safe applications with grinders, band saws, and ironworkers.

#### WLD 104 Career Opportunities for Welders

Survey course introduces students to careers in the welding & fabricating industry. Lecture topics will include code and non-code welding, fabricating, structural steel welding, aluminum welding, pipe welding & fitting, artistic, creative, and architectural welding, and local opportunities in the shop, refinery, and marine based industries. Guest speakers and tours of local industry will enhance the course to give students a broad-based view of the industry.

#### WLD 106 Print Reading I

Students will learn to use prints and drawings used in the welding trade. Students will study interpretation of basic drawings and prints, dimensions, terminology, notes, applied mathematics and sketching and drawing techniques. Students will create their own working drawing of existing object or a new project that is approved by instructor.

#### WLD 107 Welding Leadership I

Team and organizational skills are highlighted in this creative activity. Students will practice these skills by participating in the planning, organization, and execution of a multifaceted public performance event, the BTC Welding Rodeo, a two day welding skills competition. Students will combine their accumulated knowledge and skills in proper welding, cutting, and fabricating techniques, safety, Metallurgy, equipment set-up and troubleshooting, and material handling techniques. Students will also apply soft skills such as interpersonal relations in the workplace, event staging, advertising and promotion, creative thinking, team cooperation and leadership skills. Attendance during the 2-day event (usually Friday & Saturday) is required.

#### WLD 110 SMAW I

Students will learn applications of power sources, electrode identification, and basic steel metallurgy, while practicing lab techniques in E6010 Shield Metal Arc Welding Process in the 1F, 2F, and 3F positions, and E7018 in the 2F and 3F positions in the weld booth.

#### WLD 120 GMAW I

Introduction to the Gas Metal Arc Welding, welding process for mild steel. Power sources, techniques, shielding gases, metallurgy, and electrode identification will be covered. The student will learn the application of this process through lab practice in the weld booth.

#### WLD 150 Steel Fabricating I

3 cr

Students will learn and apply basic layout and fabricating techniques, applying simple print reading concepts, and cutting and welding techniques, to produce simple fabricated small projects. GMAW and FCAW welding processes may be used, as well as Plasma and Oxy/Fuel Thermal Cutting processes, and introduction to bevellers. The importance of accurate measuring; precision squares, angles, drilling and leveling; attention to detail, neatness, and the finished product will be demonstrated in an approved small fabrication project.

Prerequisite: WLD 101,102,103,105,106.

#### WLD 151 Aluminum Fabrication I

Weld joint theory & prep, fabricating aluminum and shapes, application of print reading basics. Storage and handling techniques, metal preparation for fitting and welding, fixture and jiggling tools and contamination and distortion control will be demonstrated and practiced. The importance of accurate measuring; precision squares, angles, drilling and leveling; attention to detail, neatness, and the finished product will be demonstrated in an approved small fabrication project.

Prerequisite: WLD 101,102,103,105,106.

#### WLD 206 Print Reading II

Students will learn to use prints and drawings used in the welding trade. Students will study interpretation of basic drawings and prints, dimensions, terminology, notes, applied mathematics and sketching and drawing techniques. Prerequisite: WLD 106.

#### WLD 209 Codes and Standards

Lecture will cover discussion of commonly used destructive and non-destructive weld testing processes and techniques, visual weld inspection parameters and techniques, and industry accepted codes and welding standards, publications, and standardizing organizations; including AWS/ASME, ANSI, and WABO.

#### WLD 210 SMAW II

Shield metal arc welding on steel in all positions using fillet and groove plates and structural shapes in the welding booth. Includes open-root groove welding on 3/8 plate; 2G, 3G, 4G.  
Prerequisite: WLD 110

#### WLD 215 SMAW Pipe

Shield metal arc welding of open root steel pipe in all positions in preparation for industrial applications and the WABO Structural Pipe Welding Certification Test (WABO testing is offered in-house). This pipe welding preparation mirrors the AWS/ASME VII, IX and ANSI B31.3 SMAW Pipe Welding Certification Standards for 2"XH, and 6" & 8"XH pipe for pressure piping applications required by local refineries and affiliated industry.  
Prerequisite: WLD 110  
Prerequisite: WLD 110

#### WLD 222 GMAW Aluminum II

Continuation of GMAW with fillet and groove welds in all positions. Pulse processes, power sources, shielding gases and applications will be discussed. Prerequisite: WLD 121  
Prerequisite:

#### WLD 230 FCAW II

Advanced FCA welding techniques in all positions; in the weld booth and in work simulated difficult positions such as the welding module. Lab practice will include preparation for WABO certification testing. Prerequisite: WLD 130.  
Prerequisite: WLD 130

#### WLD 242 GTAW Aluminum II

5 cr  
This course focuses on GTAW with fillet and groove welds in all positions on aluminum.  
Prerequisite: WLD 141

#### WLD 252 Aluminum Fabrication II

This course covers advanced fabricating techniques for the job site, including material handling practice and safety, crane & hoist operation & safety, confined spaces and fresh air training. In position welding utilizing GMAW and GTAW on fillet and groove welds in all positions, cutting and air carbon arc gouging, techniques in the Modular Training Facility. Fall protection & scaffold safety, and use of large shop equipment (brake, shear, power rolls). Prerequisite: WLD 151.

#### WLD 254 Steel Fabricating II

This course covers advanced fabricating techniques for the jobsite, including material handling practice and safety, crane & hoist operation & safety, confined spaces and fresh air training, In position welding utilizing proper SMAW, GTAW, and FCAW technique in all positions, and cutting and air carbon arc gouging techniques in the Modular Training Facility. Also includes fall protection & scaffold safety, and use of large shop equipment (brake, shear, power rolls). Prerequisite: WLD 150.

#### WLD 256 Pipe Fitting I

Theory and practicum, including basic trade math, measuring tools and techniques, pipe welding layout and fit-up techniques for large-bore and small-bore steel pipe; pipe materials and fittings; pipe fitting safety, tools and techniques; and preparation of beveled pipe joints for welding. Course

will include theory and application of prefabrication and field fit-up of pipe and piping systems, and welding to WABO structural, AWS and ASME pressure pipe welding standards, and NCCER Pipefitting Levels 1-3. Prerequisite: WLD 150.  
Prerequisite: WLD 150

#### WLD 257 Pipe Fitting II

Theory and practicum based on piping industry codes and standards will include trade math and trigonometric functions in laying-out angles and offsets; pipefitting calculations; special pipefitting problems, including branch connections, headers, fabrication piping systems involving reducers, offsets and rolling offsets. Also included will be special fit-up considerations for alloy pipe, and pipe support systems; theory of fit-ups to pumps, filters, pressure vessels; bolts, flanges, gaskets, bolt-up and blanking techniques; and rigging for piping installations in the Fabrication Module simulating real world conditions will be applied. This course will be based extensively on The Pipe Fitter's Blue Book by Graves and NCCER Pipefitting Levels 1-3.  
Prerequisite: WLD 256.

#### WLD 261 Advanced Structural Steel Welding

Advanced welding techniques in simulated real-world conditions, in the Fabrication Shop or Lab Training Module, including out-of-position welding and mirror welding techniques in one or more process using SMAW, GMAW, FCAW, or GTAW processes. Prerequisite: WLD 210.  
Prerequisite: WLD 210

#### WLD 262 GTAW Pipe Welding

GTAW open root welding on pipe (including carbon steel and alloy pipe welding techniques). Pipe fitting techniques for GTAW carbon and alloy pipe; back-gas purging techniques; heat treating for special alloys; GTAW remote amperage adjustment and scratch-arc techniques; welding in the booth and in the Fabrication Shop or Fabrication Module. Prerequisite: WLD 215.  
Prerequisite: WLD 215

#### WLD 270 Aluminum Testing

4 cr

This course will introduce destructive and non-destructive testing of weld joints to aluminum welding standards and will prepare students for testing processes and techniques and will require a successful in house certification welding test GTAW and GMAW to WABO, Coast Guard, AWS, AAS or ABS Standards.

#### WLD 271 WABO/ASME Testing I

This course requires successful completion of at least one WABO Certification Test (SMAW, FCAW, GMAW, GTAW) on 1" Plate, or 3/8" Plate; or WABO Certification Test on 8" Schedule 80 Pipe, or ASME Qualification Test on 2" x 5/8" wall pipe. Instructor permission required. Prerequisite: WLD 230, WLD 210, or WLD 262  
Prerequisite: WLD 230, WLD 210, or WLD 262

#### WLD 295 Capstone

4 cr

A culminating project consisting of a portfolio, resume and job search element, and a culminating fabrication project under the direction of staff. Prerequisite: All WLD courses 270 & under  
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# 7 **WE ARE HERE FOR YOU**

No changes/updates