

Chapter Four • Degree and Certificate Programs

Accounting

www.bates.ctc.edu/Accounting

Accounting is the process that summarizes economic information about a business entity for use by decision makers. Users of this information include investors, creditors, management and government agencies. The accounting program at Bates Technical College provides training in many types of accounting; such as financial, managerial, payroll, individual taxation and governmental accounting. Graduates are prepared for careers as accounting clerks, full charge bookkeepers, tax preparers, and small business accountants. General Education courses provide training in understanding diversity in the workplace, effective oral and written communication and human relations skills.

Associate in Applied Science: 90 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
ENGL&	101	English Composition I	5
100+	Level	Human Relations ¹	5
100+	Level	Humanities ²	5
100+	Level	Mathematics ³	5

REQUIRED ACCOUNTING COURSEWORK			CREDITS
ACCT&	201	Principles of Accounting I ⁷	5
ACCT&	202	Principles of Accounting II	5
ACCT&	203	Principles of Accounting III	5
ACCT	205	Excel for Accounting	5
ACCT	207	QuickBooks	5
ACCT	220	Payroll Accounting	5
ACCT	225	Federal Income Tax	5
ACCT	230	Governmental Accounting	5
ACCT	235	Intermediate Accounting Topics	5

REQUIRED BUSINESS COURSEWORK			CREDITS
BUS&	101	Intro to Business	5
BUS&	201	Business Law	5
BA	217	Business Communication	5
ECON&	201	Microeconomics	5
INFO	101	Computer Application Essentials	5

Certificate of Competency: 45 Credits

Bookkeeping

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations ⁴	5
90+	Level	Humanities ⁵	5
90+	Level	Mathematics ⁶	5

REQUIRED ACCOUNTING COURSEWORK			CREDITS
ACCT&	201	Principles of Accounting I	5
ACCT&	202	Principles of Accounting II	5
ACCT	205	Excel for Accounting	5
ACCT	207	QuickBooks	5
ACCT	220	Payroll Accounting	5

REQUIRED BUSINESS COURSEWORK			CREDITS
INFO	101	Computer Application Essentials	5

¹recommend HREL 111 Interviewing/Promoting

²recommend CMST& 210 Interpersonal Communications

³recommended MATH& 146 Statistics

⁴recommend HREL 111 Interviewing/Promoting

⁵recommend ENGL 091 Integrated Reading & Writing II

⁶recommended MATH 092 Elementary Algebra

⁷MATH 092 must be completed/test out prior to program start

Administrative Medical Assistant

www.bates.ctc.edu/AMA

Students prepare for careers as integral members of a health care team in an outpatient setting. Competency-based activities in the program provide extensive hands-on practice for students in the use of computer application skills to create and handle medical information. Medical transcription, electronic health records, medical terminology, patient administrative services, and professional ethics are presented with emphasis on the billing procedures of the insurance industry. The program also provides extended learning opportunities for persons previously or currently employed in related professions. In addition, work-based learning experiences are available in many medical settings that support the theory presented in the classroom.

Note: Students must possess basic keyboarding/word processing skills prior to enrollment in the program.

Applicants must:

1. Possess basic keyboarding/word processing skills prior to enrollment in the program, and
2. Pass a clear national criminal background check covering Washington state.

Faculty

Mary Ann Keith

Associate in Applied Science: 98-99 Credits

GENERAL EDUCATION REQUIREMENTS

		CREDITS
100+Level	Human Relations	5
100+Level	Communications	5
100+Level	Mathematics	5

REQUIRED COURSEWORK

		CREDITS
AMA 110	Computer Basics	1
AMA 111	Introduction to Word Processing	3
AMA 112	Fundamentals of Medical Terminology	4
AMA 113	Business Communications	5
AMA 114	Introduction to the Health Care Profession	5
AMA 115	Digital Medical Transcription	3
AMA 116	Medical Office Procedures	3
AMA 117	Beginning Medical Terminology	4
AMA 118	Administrative Medical Concepts	4
AMA 119	Advanced Medical Office Procedures	3
AMA 120	Introduction to Spreadsheets	3
AMA 121	Intermediate Medical Terminology	4
AMA 122	Intermediate Administrative Medical Concepts	4
AMA 123	Electronic Health Records	4
AMA 124	First Aid/CPR	1
AMA 125	Practice Management System Applications	2
AMA 126	Advanced Administrative Medical Concepts	4
AMA 127	Medical Insurance	4
AMA 128	Advanced Medical Terminology	4
AMA 129	Medical Coding Applications	4
AMA 130	Medical Office Supervision and Management	3
AMA 131	Interview Techniques	3
AMA 133	HIV Prevention Education	1
AMA 134	Healthcare Credentialing	2
AMA 135	Practical Applications	5
	and	
AMA 296	Work-based Learning Experience AND	2
AMA 297	Work-based Learning Seminar	1
	or	
AMA 298	Work-Based Learning – No Seminar	2
	or	
AMA 132	Phlebotomy	3

Certificate of Competency: 76 Credits

GENERAL EDUCATION REQUIREMENTS

		CREDITS
90+	Level Human Relations	5
90+	Level Communications	5
90+	Level Mathematics	5

REQUIRED COURSEWORK

		CREDITS
AMA 110	Computer Basics	1
AMA 111	Introduction to Word Processing	3
AMA 112	Fundamentals of Medical Terminology	4
AMA 113	Business Communications	5
AMA 114	Introduction to the Health Care Profession	5
AMA 115	Digital Medical Transcription	3
AMA 116	Medical Office Procedures	3
AMA 117	Beginning Medical Terminology	4
AMA 119	Advanced Medical Office Procedures	3
AMA 118	Administrative Medical Concepts	4
AMA 120	Introduction to Spreadsheets	3
AMA 121	Intermediate Medical Terminology	4
AMA 122	Intermediate Administrative Medical Concepts	4
AMA 123	Electronic Health Records	4
AMA 124	First Aid/CPR	1
AMA 125	Practice Management System Applications	2
AMA 127	Medical Insurance	4
AMA 128	Advanced Medical Terminology	4

This program is an I-BEST-supported program. Academic faculty embedded within the program provide additional support for students. Learn more on page 10.

Administrative Office Assistant

www.bates.ctc.edu/AOA

Prepare for a career as an office or administrative assistant, or a variety of office support positions. Students learn fundamental skills in Microsoft Word, Excel, Outlook, PowerPoint, Access, business writing and office procedures. Students receive practical experience in several areas, including grammar, keyboarding, employment preparation, and often gain work-based learning experience in temporary internships at local businesses or in residence at the college. The program also provides extended learning opportunities for persons previously or currently employed in related professions.

FACULTY

Sharon Netter

Associate in Applied Science: 93 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
AOA	102	Professional Office Procedures	5
AOA	103	Telecommunications	1
AOA	105	Keyboarding I	5
AOA	106	MS Windows	1
AOA	108	Records Management	4
AOA	109	Business Ethics	2
AOA	110	MS Word I	5
AOA	111	MS Outlook	2
AOA	112	Business Grammar I	1
AOA	120	Keyboarding II	5
AOA	121	MS Word II	5
AOA	123	Business Documentation	5
AOA	124	Business Presentations	3
AOA	126	Business Grammar II	1
AOA	132	Business Grammar III	1
AOA	240	Capstone Project	2
AOA	202	Business Grammar IV	1
AOA	203	MS Excel I	5
AOA	204	MS PowerPoint	3
AOA	205	MS Access I	3
AOA	206	Voice Recognition Software	2
AOA	207	Business Grammar V	1
AOA	217	Business Grammar VI	1
		Or	
AOA	223	MS Excel II	5
AOA	224	Desktop Publishing	3
AOA	225	MS Access II	3
AOA	234	Employment Preparation	1
AOA	291	Practical Applications*	2

*This course may be substituted with a work-based learning component

Certificate of Competency: 59 Credits

BASIC OFFICE SUPPORT

GENERAL EDUCATION REQUIREMENTS			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK

REQUIRED COURSEWORK			CREDITS
AOA	102	Professional Office Procedures	5
AOA	103	Telecommunications	1
AOA	105	Keyboarding I	5
AOA	106	MS Windows	1
AOA	108	Records Management	4
AOA	109	Business Ethics	2
AOA	110	MS Word I	5
AOA	111	MS Outlook	2
AOA	120	Keyboarding II	5
AOA	126	Business Grammar I	1
AOA	123	Business Documentation	5
AOA	126	Business Grammar II	1
AOA	132	Business Grammar III	1
AOA	202	Business Grammar IV	1
AOA	203	MS Excel I	5

Certificate of Training: 26 Credits

OFFICE FUNDAMENTALS

REQUIRED COURSEWORK			CREDITS
AOA	102	Professional Office Procedures	5
AOA	105	Keyboarding I	5
AOA	106	MS Windows	1
AOA	110	MS Word I	5
AOA	111	MS Outlook	2
AOA	112	Grammar I	1
AOA	126	Grammar II	1
AOA	203	MS Excel I	5
AOA	234	Employment Preparation	1

Architectural Woodworking/Cabinet Making Technology

www.bates.ctc.edu/Woodworking

Students prepare for careers in cabinet making and millwork crafts, in positions such as wood pattern maker, cabinet maker, door assembler, solid surface fabricator, cabinet and millwork installer, project manager, sander, utility worker, wood pattern maker and machine operator. Shop activities are an integral part of the program and provide training and practical applications in complex joinery, finishing, and installation. Students work with wood and high-tech laminates, perform component design and fabrication, and learn the use of tools and equipment. This is a pre-apprenticeship program for the Seattle/Tacoma Millmen and Cabinet Makers Apprenticeship Committee. This program also provides extended learning opportunities for persons previously or currently employed in these and other related occupations.

FACULTY

Steve Dziedziak

Associate in Applied Science: 112 Credits

GENERAL EDUCATION REQUIREMENTS

	CREDITS
100+ Level Human Relations	5
100+ Level Communication	5
100+ Level Mathematics	5

REQUIRED COURSEWORK

	CREDITS
ARWC 101 Introduction to Cabinetmaking	3
ARWC 102 Safety Principles	4
ARWC 103 Cabinetry Blueprints/Plans	4
ARWC 104 Materials	2
ARWC 105 Machine Tools I	4
ARWC 106 Machine Tools II	4
ARWC 107 Machine Tools \CNC	3
ARWC 108 Portable Power Tools	3
ARWC 109 Hand Tools	3
ARWC 110 Basic Cabinet Joinery	4
ARWC 111 Tool Maintenance/Sharpening	3
ARWC 112 Cabinetmaking/ Face Frame Construction I	4
ARWC 113 Cabinetmaking/ Face Frame Construction II	4
ARWC 114 Cabinetmaking/32mm System	3
ARWC 115 Finishing Methods I	3
ARWC 116 Drawers and Doors	2
ARWC 117 Laminates / Countertops /Solid Surface	3
ARWC 118 Occupational Math	3
ARWC 119 Jigs and Fixtures	2
ARWC 120 Cabinetmaking/Commercial Construction	3
ARWC 201 Wood Bending/Lamination Techniques	3
ARWC 202 Architectural Millwork	3
ARWC 203 Beginning Furniture Projects	5
ARWC 204 Cabinet Installation- Residential/Commercial	4
ARWC 205 Advanced Joinery	4
ARWC 206 Cabinetmaking Computer Technology	4
ARWC 207 Veneering Technology	2
ARWC 208 Employment Preparation	3
ARWC 209 Advanced Projects *	5

*This course may be substituted with a work-based learning component.

Certificate of Competency: 79 Credits

PRODUCTION CABINET MAKING

GENERAL EDUCATION REQUIREMENTS

	CREDITS
90+ Level Human Relations	5
90+ Level Communications	5
90+ Level Mathematics	5

REQUIRED COURSEWORK

	CREDITS
ARWC 101 Introduction to Cabinetmaking	3
ARWC 102 Safety Principles	4
ARWC 103 Cabinetry Blueprints/Plans	4
ARWC 104 Materials	2
ARWC 105 Machine Tools I	4
ARWC 106 Machine Tools II	4
ARWC 107 Machine Tools \CNC	3
ARWC 108 Portable Power Tools	3
ARWC 109 Hand Tools	3
ARWC 110 Basic Cabinet Joinery	4
ARWC 111 Tool Maintenance/Sharpening	3
ARWC 112 Cabinetmaking/ Face Frame Construction I	4
ARWC 113 Cabinetmaking/ Face Frame Construction II	4
ARWC 114 Cabinetmaking/32mm System	3
ARWC 115 Finishing Methods I	3
ARWC 116 Drawers and Doors	2
ARWC 117 Laminates / Countertops /Solid Surface	3
ARWC 118 Occupational Math	3
ARWC 119 Jigs and Fixtures	2
ARWC 120 Cabinetmaking/Commercial Construction	3

Auto Body Rebuilding & Refinishing

www.bates.ctc.edu/AutoBody

Students prepare for apprenticeship employment in the auto body rebuilding and refinishing industry, serving independent auto shops, automotive dealerships, government agencies, utility firms, and other companies that maintain vehicle fleets. Positions include auto body repairer, automotive refinisher, frame repairer, glass installer, painter, renovator, and shop estimator. Upon successful completion of the program, students can qualify to take the I-CAR steel welding qualification test. The program also provides extended learning opportunities for persons previously or currently employed in related professions.

FACULTY

Joe Brewer, Doug Yarbrough

Associate in Applied Science: 116 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
AUTOB	101	Auto Body Math Applications	3
AUTOB	102	Safety Principles	3
AUTOB	103	Materials Identification	3
AUTOB	104	Minor Body Repair Methods	5
AUTOB	105	Major Panel Replacement	5
AUTOB	106	Alignment – Sheet Metal	5
AUTOB	107	Alignment – Bumpers	3
AUTOB	108	Alignment – Head Lamps	1
AUTOB	109	Trim and Accessories	3
AUTOB	110	Window Mechanisms	4
AUTOB	111	Introduction to Surface Preparation	2
AUTOB	112	Surface Preparation Applications	5
AUTOB	113	Advanced Surface Preparations	5
AUTOB	201	Topcoat Systems	5
AUTOB	202	Topcoat Systems Applications	5
AUTOB	203	Shop Welding	5
AUTOB	204	Unibody Alignment	5
AUTOB	205	Body Over Frame Alignment	4
AUTOB	206	Glass Installation	4
AUTOB	207	Introduction to Plastic Repair	2
AUTOB	208	Plastic Repair Methods	5
AUTOB	209	Shop Management	3
AUTOB	210	Introduction to Estimating	4
AUTOB	211	Special Projects *	4
WBAS	101	Welding Basics	8

*This course may be substituted with a work-based learning component.

Certificate of Competency: 116 Credits

AUTO BODY REPAIR

GENERAL EDUCATION REQUIREMENTS			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
AUTOB	101	Auto Body Math Applications	3
AUTOB	102	Safety Principles	3
AUTOB	103	Materials Identification	3
AUTOB	104	Minor Body Repair Methods	5
AUTOB	105	Major Panel Replacement	5
AUTOB	106	Alignment ñ Sheet Metal	5
AUTOB	107	Alignment ñ Bumpers	3
AUTOB	108	Alignment ñ Head Lamps	1
AUTOB	109	Trim and Accessories	3
AUTOB	110	Window Mechanisms	4
AUTOB	111	Introduction to Surface Preparation	2
AUTOB	112	Surface Preparation Applications	5
AUTOB	113	Advanced Surface Preparations	5
AUTOB	201	Topcoat Systems	5
AUTOB	202	Topcoat Systems Applications	5
AUTOB	203	Shop Welding	5
AUTOB	204	Unibody Alignment	5
AUTOB	205	Body Over Frame Alignment	4
AUTOB	206	Glass Installation	4
AUTOB	207	Introduction to Plastic Repair	2
AUTOB	208	Plastic Repair Methods	5
AUTOB	209	Shop Management	3
AUTOB	210	Introduction to Estimating	4
AUTOB	211	Special Projects *	4
WBAS	101	Welding Basics	8

*This course may be substituted with a work-based learning component.

Certificate of Training: 20 Credits

AUTOMOTIVE REFINISHING

REQUIRED COURSEWORK			CREDITS
AUTOB	102	Safety Principles	3
AUTOB	111	Introduction to Surface Preparation	2
AUTOB	112	Surface Preparation Applications	5
AUTOB	201	Topcoat Systems	5
AUTOB	202	Topcoat Systems Applications	5

Automotive Technology

www.bates.ctc.edu/AutoMechanic

In an active, campus auto service facility, students practice all aspects of the profession, from balancing tires to diagnosing engine problems. Using advanced computerized analyzers, students learn to perform repairs, overhaul engines and transmissions, service fuel injection systems, and much more. Bates' automotive program is certified by the National Automotive Technicians Education Foundation (NATEF) for both secondary and post-secondary levels. Bates' Automotive Mechanic program instructors are Evaluation Team Leaders for NATEF and evaluate other programs in the Puget Sound area for NATEF membership eligibility. Instruction is configured according to Automotive Service Excellence (ASE) certification requirements, and students are encouraged to take one or more ASE certification tests while completing the program.

FACULTY

Mike Clark

Associate in Applied Science: 142 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
AUTOM	101	Basic Engines	4
AUTOM	102	Engine Systems	4
AUTOM	103	Basic Electrical Theory	4
AUTOM	105	Engines/Electrical Applications	3
AUTOM	106	Shop Safety and Meter Certification	1
AUTOM	121	Basic Engine Performance	5
AUTOM	122	Basic Ignition Systems	5
AUTOM	123	Introduction to Fuel Systems	4
AUTOM	124	Introduction to Emissions Systems	2
AUTOM	125	Introduction to Fuel Injection	2
AUTOM	130	Introduction to Lighting and Instruments	4
AUTOM	131	Introduction to Clutches and Manual Transmissions	4
AUTOM	132	Automatic Transmissions/Transaxles	4
AUTOM	133	Four and All-wheel Drive	4
AUTOM	140	Wheel Alignment and Steering Systems	4
AUTOM	141	Brake Systems	4
AUTOM	142	Disc and Drum Brakes	4
AUTOM	143	Heating and Air Conditioning Systems	4
AUTOM	201	Advanced Engine Repair	5
AUTOM	202	Engine Assembly	3
AUTOM	203	Automotive Electrical Systems	4
AUTOM	204	Battery, Starters, and Charging Systems	4
AUTOM	220	Ignition Systems Service	4
AUTOM	221	Fuel Systems Service	4
AUTOM	222	Emissions Systems Service	3
AUTOM	223	Fuel Injection	3
AUTOM	230	Lighting and Instrument Service	3
AUTOM	231	Clutches and Manual Transmission Service	5
AUTOM	232	Automatic Transmission and Transaxle Service	4
AUTOM	233	Four and All-Wheel Drive Service	4
AUTOM	240	Advanced Wheel Alignment and Steering Systems Service	4
AUTOM	241	Advanced Brake Service	4
AUTOM	242	Advanced Disc and Drum Brake Service	4
AUTOM	243	Applied HVAC Service	3

Automotive Mechanic Certificates of Training

These certificates correspond to the requirements of the Automotive Service Excellence (ASE) requirements. Students are encouraged to take one or more ASE certification tests so that they may qualify as ASE-certified technicians.

Certificate of Training, Engine Repair: 16 Credits

REQUIRED COURSEWORK			CREDITS
AUTOM	105	Basic Engines	4
AUTOM	106	Engine Systems	4
AUTOM	206	Advanced Engine Repair	5
AUTOM	207	Engine Assembly	3

Certificate of Training, Automatic Transmission and Transaxle: 6 Credits

REQUIRED COURSEWORK			CREDITS
AUTOM	209	Automatic Transmissions/Transaxles	6

Certificate of Training, Manual Drive Train and Axles: 12 Credits

REQUIRED COURSEWORK			CREDITS
AUTOM	208	Clutches and Manual Transmissions	6
AUTOM	210	Four and All-wheel Drive	6

Certificate of Training, Suspension and Steering: 6 Credits

REQUIRED COURSEWORK			CREDITS
AUTOM	211	Wheel Alignment and Steering Systems	6

Certificate of Training, Brakes: 10 Credits

REQUIRED COURSEWORK			CREDITS
AUTOM	212	Brake Systems	4
AUTOM	213	Disc and Drum Brakes	6

Certificate of Training, Electrical/Electronic Systems: 19 Credits

REQUIRED COURSEWORK			CREDITS
AUTOM	107	Basic Electrical Theory	4
AUTOM	108	Automotive Electrical Systems/Applications	6
AUTOM	111	Lighting and Instruments	5
AUTOM	112	Battery, Starters, and Charging Systems	4

Certificate of Training, Heating and Air Conditioning: 5 Credits

REQUIRED COURSEWORK			CREDITS
AUTOM	214	Heating and Air Conditioning Systems	5

Certificate of Training I - Engine Performance I: 11 Credits*

REQUIRED COURSEWORK			CREDITS
AUTOM	109	Basic Engine Performance	5
AUTOM	110	Ignition Systems	6

*Students must complete both Engine Performance I and Engine Performance II in order to receive ASE Certification A-8.

Certificate of Training I - Engine Performance II: 14 Credits*

REQUIRED COURSEWORK			CREDITS
AUTOM	113	Fuel Systems	6
AUTOM	114	Emissions Systems	4
AUTOM	205	Fuel Injection	4

*Students must complete both Engine Performance I and Engine Performance II in order to receive ASE Certification A-8.

Automotive Parts/Inventory/ Warehousing

www.bates.ctc.edu/AutoParts

Instruction takes place in a warehouse environment and in a fully-operational vehicle parts and accessories store open to the general public, giving students the opportunity to gain hands-on experience in inventory merchandise, wholesale and retail customers and working with vehicle parts vendors. Employment opportunities may include inventory and stock specialist, vehicle parts counter person, warehouse and distribution specialist, inventory clerk, shipping and receiving clerk, shipping documentation specialist, stock merchandiser, procurement specialist, counter and accessories sales, parts managers, materials movement worker, forklift operator, order puller and loading dock worker.

FACULTY

Jeff Lovin

Certificate of Competency: 65 Credits

REQUIRED COURSEWORK			CREDITS
VPM	101	Applied Math	40
VPM	106	Material Movement	2
VPM	107	Storage and Distribution	5
VPM	108	Shipping and Receiving	5
VPM	109	Introduction to Vehicle Parts Merchandising	5
VPM	110	Principles of Inventory Control	5
VPM	112	Stock/Product Order	4
VPM	115	Principles of Salesmanship	5
VPM	116	Retail Point of Sale	3
VPM	119	Principles of Management	5
VPM	120	Employment Preparation	3
VPM	121	Retail Applications*	3
VPM	122	Warehouse Applications*	3
VPM	123	Stock Merchandising	3
VPM	124	Automotive Parts Systems	4
VPM	125	Product Research Systems	4
VPM	126	Returns, Exchanges, and POs	2

*This course may be substituted with a work-based learning component.

Certificate of Training: 17 Credits

INVENTORY/STOCK SPECIALIST REQUIRED COURSEWORK			CREDITS
VPM	109	Introduction to Vehicle Parts Merchandising	5
VPM	110	Principles of Inventory Control	5
VPM	112	Stock/Product Order	4
VPM	123	Stock Merchandising	3

Certificate of Training: 29 Credits

VEHICLE PARTS COUNTER PERSON REQUIRED COURSEWORK			CREDITS
VPM	109	Introduction to Vehicle Parts Merchandising	5
VPM	116	Retail Point of Sale	3
VPM	119	Principles of Management	5
VPM	120	Employment Preparation	3
VPM	121	Retail Applications*	3
VPM	124	Automotive Parts Systems	4
VPM	125	Product Research Systems	4
VPM	126	Returns, Exchanges, and POs	2

*This course may be substituted with a work-based learning component.

Certificate of Training: 24 Credits

WAREHOUSE/DISTRIBUTION SPECIALIST REQUIRED COURSEWORK			CREDITS
VPM	101	Applied Math	4
VPM	106	Material Movement	2
VPM	107	Storage and Distribution	5
VPM	108	Shipping and Receiving	5
VPM	109	Introduction to Vehicle Parts Merchandising	5
VPM	122	Warehouse Applications*	3

*This course may be substituted with a work-based learning component.

Barber

www.bates.ctc.edu/Barber

www.bates.ctc.edu/BarberShop

Bates Technical College has the only college barber program in the State of Washington in which students prepare to become licensed barbers while learning in a stand-alone program and working in an on-campus shop that serves the public. Students are evaluated on the performance of each competency of the curriculum to ensure readiness to meet state licensure requirements and enter the profession. Prior to program completion, each student must take and pass a comprehensive written and practical examination that includes theoretical concepts. The program also provides extended learning opportunities for persons previously or currently employed in related professions.

Note: The minimum age for licensure as a barber in the State of Washington is 17 years of age.

FACULTY

Jeff Olson

Certificate of Competency: 75 Credits

REQUIRED COURSEWORK			CREDITS
BARB 110	Barbering Theory		1
BARB 111	Scalp and Hair Analysis		2
BARB 112	Shampooing		3
BARB 113	Decontamination and Infection Control		5
BARB 114	Introduction to Barbering		5
BARB 115	Safety/First Aid		2
BARB 116	Basic Haircutting Techniques		4
BARB 117	Customer Service		3
BARB 118	Applied Communications		3
BARB 120	Math for Barbers		3
BARB 121	Facial Hair		5
BARB 122	Barbering Applications		5
BARB 123	Intermediate Haircutting Techniques		3
BARB 124	Haircutting Applications		5
BARB 125	Applied Human Relations		3
BARB 131	Advanced Techniques		4
BARB 132	Advanced Applications		4
BARB 133	Cutting and Styling Methods		4
BARB 134	Cutting and Styling Applications		5
BARB 135	Hair Styling		2
BARB 136	Artificial Hair Services		2
BARB 137	Practical Applications*		2

*This course may be substituted with a work-based learning component.

Biomedical Equipment Service Technician: Clinical Engineering

www.bates.ctc.edu/Biomedical

Health care, the largest industry in the country, employs more than 14 million people, and figures continue to mount. From small-town private practices to mammoth inner-city hospitals, health care workers are in high demand. The patients in those practices and hospitals depend not only on the expertise of doctors and nurses, but on the proper functioning of sophisticated biomedical equipment. The people responsible for repairing and maintaining these highly specialized machines and instruments such as defibrillators, heart monitors, electric wheelchairs, medical imaging equipment (x rays, CAT scanners, and ultrasound equipment), are biomedical service technicians. They inspect and install equipment used by doctors, nurses, and other healthcare providers for researching, monitoring, diagnosing, and treating illnesses and disorders. They also repair, calibrate, and safety test the equipment in order to ensure proper function and safety for both the operator and the patient.

FACULTY

Art Cutting, Franklin Hsu

Prerequisite

BIOL 171 Human Anatomy and Physiology 5

To be taken prior to or within the first three quarters of start date.

Associate in Applied Science: 114 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
BMST	101	Safety Principles	4
BMST	102	Blood borne Pathogens	3
BMST	103	HIPAA	2
BMST	104	Applied Math	4
EEST	103	Electronics Principles I	5
EEST	104	DC Electronics	4
EEST	105	AC Electronics	5
EEST	106	Capacitors	4
EEST	107	Electronics Principles II	5
EEST	108	Amplifiers and Transistors	4
EEST	109	Electronic Devices	2
EEST	110	Introduction to Programmable Logic Controllers	5
EEST	201	Electronic Principles - Automation	5
EEST	202	Antenna and Satellite Systems	3
EEST	203	Magnetic and Laser Media	3
EEST	204	RF Receivers and Audio Amps	4
BMST	105	Testing Equipment	5
BMST	106	Soldering	2
BMST	107	Schematics	3
BMST	109	Applied Service I	3
BMST	110	Applied Service II	2
BMST	201	Imaging Systems	3
BMST	215	Introduction to Medical Terminology	3
BMST	217	Biomedical Instrumentation	5
BMST	218	Biomedical Equipment	3
BMST	219	Medical Equipment Research	3
BMST	220	Biomedical Engineering Applications *	5
		OR	5
BMST	298	Work-based Learning – No Seminar	5

This program is an I-BEST-supported program. Academic faculty embedded within the program provide additional support for students. Learn more on page 10.

Broadcasting/Video Production

www.bates.ctc.edu/Broadcasting

The broadcasting curriculum has been examined by and meets the requirements of the Society of Broadcast Engineers (SBE). Students are encouraged to test for the SBE certification upon completion of the program. Three options are offered:

Broadcast Operations includes on-air master control, content storage, playback operations, and editing; satellite downlink operations; operations/systems technician; automation technician; and VIS (visual information specialist).

Broadcast Engineering includes transmitter/microwave operations; video server/non-linear editing; technical training to support electronic news, sports, and field productions; transcoding and compression systems; broadcast equipment installation, maintenance, operation; and the technical training to support electronic news, sports and field productions.

Video Production includes planning and script development; lighting; set design and construction; camera operation; sound mixing; technical directing; content editing; graphics generation; and equipment training to support studio and remote production.

FACULTY

Roland Robinson, Ken Witkoe

Associate in Applied Science Degrees: 104-108 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

PROGRAM CORE COURSES (3 of 4 sets and electives are required) CREDITS

SET	CORE COURSE	CREDITS
SET 1	CORE ENGINEERING	
	BROAD 103	Safety and First Aid 2
	BROAD 105	Broadcast Electronics Theory 3
	BROAD 106	Applied Electronics 3
	BROAD 107	Electronic Concepts 3
BROAD 108	Electronic Principles 3	
SET 2	CORE OPERATIONS	
	BROAD 111	Master Control Operations 1 5
	BROAD 118	Control Room Equipment I 3
	BROAD 119	Basic Maintenance and Troubleshooting 3
BROAD 123	Introduction to Broadcast Systems 3	
SET 3	CORE PRODUCTION	
	BROAD 114	Introduction to Studio and Field Production 3
	BROAD 116	Principles of Lighting 3
	BROAD 121	Production Process Theory 3
BROAD 127	Production Editing I 3	
SET 4	CORE AUDIO	
	BROAD 109	Characteristics of Sound 3
	BROAD 112	Basic Audio Equipment 3
	BROAD 113	Studio Acoustics 3
	BROAD 120	Introduction to Digital Recording 5
ELECTIVES		15

PROGRAM ADVANCED COURSES (one advanced option is required):

ADVANCED ENGINEERING			CREDITS
BROAD	201	Analog Systems I	3
BROAD	202	Advanced Broadcast Formats	3
BROAD	203	Introduction to Digital Systems	2
BROAD	209	AC/DC Circuits	5
BROAD	210	AC/DC Applications	4
BROAD	217	Audio Engineering	5
BROAD	219	Video Engineering	4
BROAD	285	Practicum I *	5
ELECTIVES			3-5

ADVANCED OPERATIONS

BROAD	221	Satellite Communications	2
BROAD	223	Systems Maintenance	5
BROAD	231	Broadcast Station Operations	5
BROAD	237	Control Room Equipment II	5
BROAD	243	Master Control Operations II	5
BROAD	248	Network Storage and Control	4
BROAD	286	Practicum II *	5
ELECTIVES			3-5

ADVANCED PRODUCTION

BROAD	239	Production Audio Preparation	5
BROAD	251	Introduction to the TV Process	3
BROAD	252	TV Production Applications	5
BROAD	255	Lighting Techniques	5
BROAD	260	Studio Camera Equipment	3
BROAD	262	Set Design	3
BROAD	267	Production Editing II	2
BROAD	287	Practicum III *	5
ELECTIVES			3-5

CERTIFICATE OF COMPETENCY

BROADCAST AND VIDEO ELEMENTS: 70-72 CREDITS

GENERAL EDUCATION REQUIREMENTS			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

PROGRAM COURSEWORK (3 of 4 sets and electives are required)

SET	CORE COURSE	CREDITS
SET 1	CORE ENGINEERING	
	BROAD 103	Safety and First Aid 2
	BROAD 105	Broadcast Electronics Theory 3
	BROAD 106	Applied Electronics 3
	BROAD 107	Electronic Concepts 3
BROAD 108	Electronic Principles 3	
SET 2	CORE OPERATIONS	
	BROAD 111	Master Control Operations 1 5
	BROAD 118	Control Room Equipment I 3
	BROAD 119	Basic Maintenance and Troubleshooting 3
BROAD 123	Introduction to Broadcast Systems 3	
SET 3	CORE PRODUCTION	
	BROAD 114	Introduction to Studio and Field Production 3
	BROAD 116	Principles of Lighting 3
	BROAD 121	Production Process Theory 3
	BROAD 127	Production Editing I 3

Broadcasting/Video Production (continued)

SET 4	CORE AUDIO	CREDITS
	BROAD 109 Characteristics of Sound	3
	BROAD 112 Basic Audio Equipment	3
	BROAD 113 Studio Acoustics	3
	BROAD 120 Introduction to Digital Recording	5
	ELECTIVES	15

CERTIFICATES OF TRAINING

BVP ENGINEERING CORE: 14 CREDITS	CREDITS
BROAD 103 Safety and First Aid	2
BROAD 105 Broadcast Electronics Theory	3
BROAD 106 Applied Electronics	3
BROAD 107 Electronic Concepts	3
BROAD 108 Electronic Principles	3

BVP OPERATIONS CORE: 14 CREDITS	CREDITS
BROAD 111 Master Control Operations 1	5
BROAD 118 Control Room Equipment I	3
BROAD 119 Basic Maintenance and Troubleshooting	3
BROAD 123 Introduction to Broadcast Systems	3

BVP PRODUCTION CORE: 12 CREDITS	CREDITS
BROAD 114 Introduction to Studio and Field Production	3
BROAD 116 Principles of Lighting	3
BROAD 121 Production Process Theory	3
BROAD 127 Production Editing I	3

BVP AUDIO CORE: 14 CREDITS	CREDITS
BROAD 112 Basic Audio Equipment	3
BROAD 113 Studio Acoustics	3
BROAD 109 Characteristics of Sound	3
BROAD 120 Introduction to Digital Recording	5

ELECTIVES LIST

ELECTIVES LIST	CREDITS
BROAD 117 Program Editing I	3
BROAD 125 Record & Playback Devices	3
BROAD 126 Elements of Audio I	3
BROAD 129 Audio Techniques	4
BROAD 204 Introduction to Operating Systems	3
BROAD 205 Receivers/Transmitters	5
BROAD 206 Power and Communication Systems	3
BROAD 207 Advanced Editing Projects	5
BROAD 215 ATSC Formats and Transcoding	2
BROAD 227 DTV Trans-Systems /8VSB	4
BROAD 229 Compression MPEG-II & AC-3	2
BROAD 247 Program Editing II	5
BROAD 254 Principles of Lighting	5
BROAD 265 Field Production	7
BROAD 273 Video Graphics Applications	5
BROAD 276 Technical Directing I	6
BROAD 283 Emerging Technologies	3
BROAD 288 Practicum IV *	5
BROAD 289 Practicum V *	5
BROAD 290 Practicum VI *	5

Students may receive elective credits for Digital Media classes. See the Digital Media instructor for classes offered.

Carpentry

www.bates.ctc.edu/Carpentry

Students prepare for apprenticeship employment in the construction industry, filling positions such as carpenter, framer, concrete worker, and interior and exterior finisher. Off-campus building and remodeling projects provide opportunities for extensive practical training, giving students valuable experience in the trade, from estimating construction projects through all phases of construction. This is a pre-apprenticeship program for the South Puget Sound Carpenters Joint Apprenticeship Training Committee.

FACULTY

Dan Smith

Associate in Applied Science: 116 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
CARPT	101	Carpentry Math	3
CARPT	102	Safety Principles	3
CARPT	103	Prints and Plans	4
CARPT	104	Construction Materials	2
CARPT	105	Tools and Equipment	4
CARPT	106	Power Tools	5
CARPT	107	Optical Instruments	3
CARPT	108	Plot Plans and Building Layout	3
CARPT	109	Introduction to Framing	4
CARPT	110	Foundation	3
CARPT	111	Foundation Footings	3
CARPT	112	Foundation Walls	5
CARPT	201	Floor Systems	5
CARPT	202	Wall and Ceiling Construction	5
CARPT	203	Stairs	3
CARPT	204	Introduction to Roofing	3
CARPT	205	Roof Construction	5
CARPT	206	Introduction to Exterior Finish Methods	4
CARPT	207	Exterior Doors and Windows	5
CARPT	208	Siding	5
CARPT	209	Introduction to Interior Finish Methods	3
CARPT	210	Interior Floors, Walls, and Ceilings	4
CARPT	211	Interior Doors and Windows	5

CARPT	213	Employment Preparation	2
CARPT	215	Practical Applications*	2
WBAS	101	Welding Basics	8

*This course may be substituted with a work-based learning component.

Certificate of Competency: 116 Credits

CARPENTRY			CREDITS
GENERAL EDUCATION REQUIREMENTS			
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
CARPT	101	Carpentry Math	3
CARPT	102	Safety Principles	3
CARPT	103	Prints and Plans	4
CARPT	104	Construction Materials	2
CARPT	105	Tools and Equipment	4
CARPT	106	Power Tools	5
CARPT	107	Optical Instruments	3
CARPT	108	Plot Plans and Building Layout	3
CARPT	109	Introduction to Framing	4
CARPT	110	Foundation	3
CARPT	111	Foundation Footings	3
CARPT	112	Foundation Walls	5
CARPT	201	Floor Systems	5
CARPT	202	Wall and Ceiling Construction	5
CARPT	203	Stairs	3
CARPT	204	Introduction to Roofing	3
CARPT	205	Roof Construction	5
CARPT	206	Introduction to Exterior Finish Methods	4
CARPT	207	Exterior Doors and Windows	5
CARPT	208	Siding	5
CARPT	209	Introduction to Interior Finish Methods	3
CARPT	210	Interior Floors, Walls, and Ceilings	4
CARPT	211	Interior Doors and Windows	5
CARPT	213	Employment Preparation	2
CARPT	292	Independent Projects	2
WBAS	101	Welding Basics	8

*This course may be substituted with a work-based learning component.

Certificate of Competency: 77 Credits

Carpenter Technician

GENERAL EDUCATION REQUIREMENTS			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
CARPT	101	Carpentry Math	3
CARPT	102	Safety Principles	3
CARPT	103	Prints and Plans	4
CARPT	104	Construction Materials	2
CARPT	105	Tools and Equipment	4
CARPT	106	Power Tools	5
CARPT	110	Foundation	3
CARPT	111	Foundation Footings	3
CARPT	112	Foundation Walls	5
CARPT	201	Floor Systems	5
CARPT	202	Wall and Ceiling Construction	5
CARPT	203	Stairs	3
CARPT	205	Roof Construction	5
CARPT	208	Siding	5
CARPT	211	Interior Doors and Windows	5
CARPT	292	Independent Projects *	2

Carpentry (cont'd)

Certificates of Training

BASIC CARPENTRY I: 16 CREDITS

REQUIRED COURSEWORK		CREDITS
CARPT	101 Carpentry Math	3
CARPT	102 Safety Principles	3
CARPT	103 Prints and Plans	4
CARPT	104 Construction Materials	2
CARPT	105 Tools and Equipment	4

BASIC CARPENTRY II: 16 CREDITS

REQUIRED COURSEWORK		CREDITS
CARPT	106 Power Tools	5
CARPT	107 Optical Instruments	3
WBAS	101 Welding Basics	8

CONCRETE FOUNDATIONS: 14 CREDITS

REQUIRED COURSEWORK		CREDITS
CARPT	108 Plot Plans and Building Layout	3
CARPT	110 Foundation	3
CARPT	111 Foundation Footings	3
CARPT	112 Foundation Walls	5

WOOD FRAMING: 22 CREDITS

REQUIRED COURSEWORK		CREDITS
CARPT	109 Introduction to Framing	4
CARPT	201 Floor Systems	5
CARPT	202 Wall and Ceiling Construction	5
CARPT	203 Stairs	3
CARPT	205 Roof Construction	5

EXTERIOR FINISHING: 17 CREDITS

REQUIRED COURSEWORK		CREDITS
CARPT	204 Introduction to Roofing	3
CARPT	206 Introduction to Exterior Finish Methods	4
CARPT	207 Exterior Doors and Windows	5
CARPT	208 Siding	5

INTERIOR FINISHING: 16 CREDITS

REQUIRED COURSEWORK		CREDITS
CARPT	209 Introduction to Interior Finish Methods	3
CARPT	210 Interior Floors, Walls, and Ceilings	4
CARPT	211 Interior Doors and Windows	5
CARPT	213 Employment Preparation	2
CARPT	292 Independent Projects	2

CARPENTRY: MULTI-CRAFT TRADES: 10 CREDITS

REQUIRED COURSEWORK		CREDITS
CARPT	102 Safety Principles	3
CARPT	105 Tools and Equipment	4
CARPT	215 Practical Applications	2
CARPT	292 Independent Projects	1

Civil Engineering Technology

www.bates.ctc.edu/CivilEngineering

Students prepare for careers as civil engineering technicians who typically work under the direct supervision of a project engineer. The program environment emulates a civil engineering/surveying firm, giving students practice in many aspects of the profession, including defining project requirements, conducting survey/field work, field engineering, construction staking, designing, estimating, modeling and client presentations. Instruction includes computer-aided design, the preparation of engineering calculations, and coordinate systems which include lengths, directions, slopes, bearings areas, volumes, weights densities, moments, forces, reactions, flows, and loads. Students learn to use a variety of computer software application packages, including, but not limited to Word, Excel, Civil 3D, CadrePro, Hydraflow and SurvCE

Program Prerequisites: COMPASS Pre-algebra 55, Reading 80, or transition from basic studies.

FACULTY

Brian Smith

Associate in Applied Science-Transfer: 101 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
MATH&	141	Precalculus I	
		-or-	
MATH&	142	Precalculus II	5
ENGL&	101	English Composition I	5
CMST&	210	Interpersonal Communications	5
		-or-	
CMST&	230	Small Group Communications	
		Electives (Two Courses)	10

Transferable CTC commonly numbered distribution course or transferable CTC commonly numbered course

ENGINEERING CORE REQUIREMENTS

			CREDITS
AMATH	170	Engineering Foundational Mathematics	5
ENGR	105	CAD – Two Dimension Fundamentals	5
ENGR	106	Intro to Engineering Technology	2
ENGR	107	Intro to Engineering Graphics	3

REQUIRED COURSEWORK

			CREDITS
CET	103	Statics	3
CET	105	Structural Analysis	3
CET	109	Introduction to Surveying	3
CET	111	Civil 3D Surfaces and Points	3
CET	113	Hydrology	3
CET	117	GIS Resources	3
CET	121	Coordinate Geometry	3
CET	123	Alignment and Profiles	3
CET	125	Basic Corridors in Civil 3D	3
CET	127	Surveying - Control	3
CET	131	Construction Materials	3
CET	133	Civil 3D Grading	3
CET	137	Topographic Surveying	3
CET	202	Finite Element Models	3
CET	204	3D Structural Modeling	3
CET	212	Open Channel Flow	3
CET	226	Construction Staking	3
CET	297	Work Based Seminar or Special Topics	2
CET	231	Projects I	4
CET	232	Projects II	4
		-or-	
CET	298	Work Based Learning – no seminar	8

Associate in Applied Science: 91 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
MATH&	141	Precalculus I	
		-or-	
MATH&	142	Precalculus II	5
ENGL&	101	English Composition I	5
CMST&	210	Interpersonal Communications	5
		-or-	
CMST&	230	Small Group Communications	

ENGINEERING CORE REQUIREMENTS

			CREDITS
AMATH	170	Engineering Foundational Mathematics	5
ENGR	105	CAD – Two Dimension Fundamentals	5
ENGR	106	Intro to Engineering Technology	2
ENGR	107	Intro to Engineering Graphics	3

REQUIRED COURSEWORK

			CREDITS
CET	103	Statics	3
CET	105	Structural Analysis	3
CET	109	Introduction to Surveying	3
CET	111	Civil 3D Surfaces and Points	3
CET	113	Hydrology	3
CET	117	GIS Resources	3
CET	121	Coordinate Geometry	3
CET	123	Alignment and Profiles	3
CET	125	Basic Corridors in Civil 3D	3
CET	127	Surveying - Control	3
CET	131	Construction Materials	3
CET	133	Civil 3D Grading	3
CET	137	Topographic Surveying	3
CET	202	Finite Element Models	3
CET	204	3D Structural Modeling	3
CET	212	Open Channel Flow	3
CET	226	Construction Staking	3
CET	297	Work Based Seminar or Special Topics	2
CET	231	Projects I	4
CET	232	Projects II	4
		-or-	
CET	298	Work Based Learning – no seminar	8

CNC Machinist

www.bates.ctc.edu/CNC

This program prepares students for employment in the machinist/manufacturing field. Using a variety of machine tools including computer numeric control (CNC) equipment, students learn to make metal parts to precise specifications. Knowledge of the working properties of metal, capabilities of machine tools and equipment, and standard shop practices prepare students for employment in all types of factories, industries, and maintenance shops.

FACULTY

Barry Young, Denell Zander

Associate in Applied Science: 103 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5

REQUIRED CORE

CNCM	121	Introduction to Machining Technology	3
CNCM	122	Measurement Applications	5
CNCM	123	Geometric Dimensioning and Tolerancing	5
CNCM	124	Blueprint Reading II	5
CNCM	125	Machine Shop Mathematics II	5

REQUIRED COURSEWORK

CNCM	102	Machining Fundamentals	3
CNCM	105	Secondary Operations, Benchwork	2
CNCM	110	CNC Mill I	2
CNCM	111	Introduction to CNC Technology	2
CNCM	112	CNC Controls	3
CNCM	113	CNC Programming	4
CNCM	114	CNC Troubleshooting	3
CNCM	119	CNC Lathe I	3
CNCM	201	CNC Lathe II	4
CNCM	202	CNC Lathe III	5
CNCM	203	CNC Mill II	5
CNCM	204	CNC Mill III	5
CNCM	207	Advanced Projects I	5
CNCM	208	Advanced Projects II	5
CNCM	209	Advanced Manufacturing Processes	3
CNCM	213	Aerospace Blueprint Reading	3
CNCM	215	Computer-Aided Manufacturing	5
CNCM	216	Introduction to Computer-Aided Drafting (CAD)	5
CNCM	217	Emergent Technologies	3

Certificate of Competency

CNC Machining: 94 CREDITS

GENERAL EDUCATION REQUIREMENTS			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5

REQUIRED CORE

CNCM	121	Introduction to Machining Technology	3
CNCM	122	Measurement Applications	5
CNCM	123	Geometric Dimensioning and Tolerancing	5
CNCM	124	Blueprint Reading II	5
CNCM	125	Machine Shop Mathematics II	5

REQUIRED COURSEWORK

CNCM	102	Machining Fundamentals	5
CNCM	105	Secondary Operations, Benchwork	2
CNCM	110	CNC Mill I	2
CNCM	111	Introduction to CNC Technology	2
CNCM	112	CNC Controls	3

(Cont'd)

REQUIRED COURSEWORK			CREDITS
CNCM	113	CNC Programming	4
CNCM	114	CNC Troubleshooting	3
CNCM	119	CNC Lathe I	3
CNCM	201	CNC Lathe II	5
CNCM	203	CNC Mill II	5
CNCM	207	Advanced Projects I	5
CNCM	209	Advanced Manufacturing Processes	3
CNCM	213	Aerospace Blueprint Reading	4
CNCM	215	Computer-Aided Manufacturing	5
CNCM	216	Introduction to Computer-Aided Drafting (CAD)	5

Certificate of Training

CNC Operator: 41 CREDITS

REQUIRED COURSEWORK			CREDITS
CNCM	102	Machining Fundamentals	5
CNCM	103	Aerospace Blueprint Reading	4
CNCM	105	Secondary Operations, Benchwork	2
CNCM	119	CNC Lathe I	5
CNCM	110	CNC Milling I	2
CNCM	121	Introduction to Machining Technology	3
CNCM	122	Measurement Applications	5
CNCM	123	Geometric Dimensioning and Tolerancing	5
CNCM	124	Blueprint Reading II	5
CNCM	125	Machine Shop Mathematics II	5

This program is an I-BEST-supported program. Academic faculty embedded within the program provide additional support for students. Learn more on page 10.

Commercial Truck Driving-Entry Level

www.bates.ctc.edu/TruckDriving

Bates Technical College is the only school in Washington state certified by the Professional Truck Driver Institute. Students prepare for entry-level employment as commercial truck drivers with the goal of a Class A Commercial Driver's License (CDL) with all endorsements. Training takes place in classrooms, on Bates' truck driving range, and on the road, using a variety of equipment.

Note: Through an Opportunity Grant, special tuition and book funding is available to assist low-income adult students entering this program. Contact Ramon Burton, 253.680.7544, for more information.

Prerequisites:

Applicants must:

1. possess a valid Washington State driver's license;
2. have a driving record with no DUI, negligent, reckless, or hit and run infractions within the past five years;
3. have no more than three moving violations in the past 36 months (a state vehicle operating requirement);
4. must be able to pass the Federal Department of Transportation physical exam and drug screen;
5. not have a felony within the past five years;
6. be a minimum of 18 years of age to enroll in local commercial driving; and
7. be a minimum of 21 years of age to enroll in long-haul commercial driving.

FACULTY

Tom Deligeannis, Dan French, Bob Gunter, Marc Jones, Wade Westphal

Certificate of Training: 40 Credits

REQUIRED COURSEWORK			CREDITS
TRUCK	101	Safety/First Aid	3
TRUCK	102	Introduction to the Trucking Industry	4
TRUCK	103	Commercial Driver's License (CDL)	4
TRUCK	104	Pre-Trip Requirements	3
TRUCK	105	Close Quarters Operation	5
TRUCK	106	Materials/Cargo I	3
TRUCK	107	City/Town Driving	5
TRUCK	108	Freeway/Open Road I	5

Students must choose one option:

OPTION A: Local

TRUCK	110	City/Town Driving	4
TRUCK	111	Materials/Cargo II	4

OPTION B: Long Haul

TRUCK	112	Freeway/Open Road II	4
TRUCK	113	Advanced Commercial Driving	4

Certificate of Training: 3 Credits

COMMERCIAL DRIVER LICENSE--CLASS B

REQUIRED COURSEWORK			CREDITS
TRUCK	109	Commercial Driver Class B	3

This program is an I-BEST-supported program. Academic faculty embedded within the program provide additional support for students. Learn more on page 10.

Computer Networking Systems Technician

www.bates.ctc.edu/ComputerNetworking

Computer network systems technicians link the hardware and software that comprise computer data communications networks. They install, configure and maintain network components, work on client workstations, servers, domain controllers, shared printers, cables, and routers. They maintain network equipment, applications, data and user interfaces and workstations as well as troubleshoot local and wide area networks. Desktop, server and network administration positions are needed in all industries due to the ongoing movement towards computer automation. Students are encouraged to obtain Microsoft, Comptia and Cisco certifications, including A+, MCSA, MCITP, MCTS, MCDST and CCNA.

FACULTY

Dave Skeen

Associate in Applied Science: 112 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
ETECH	101	Introduction to Electronics	2
ETECH	102	DC Circuits	5
ETECH	103	AC Circuits	5
ETECH	104	Analog Circuits	5
ETECH	105	Digital Circuits	5
ETECH	106	Microcontrollers	5
CNST	110	MS Client Operating Systems	5
CNST	201	Cisco Network Fundamentals	5
CNST	202	Cisco Routing Protocols and Concepts	5
CNST	205	Fundamentals of Linux	5
CNST	207	Network Infrastructure	5
CNST	209	Directory Services	5
CNST	210	Network Security	5
INFO	101	Computer Applications Essentials	5
INFO	104	A+ Essentials	5
INFO	105	A+ Practical	5
INFO	110	Emerging Technologies	5

Students must choose 15 credits from the attached elective list.

ELECTIVES LIST

			CREDITS
CNST	212	Cisco LAN Switching and Wireless	5
CNST	213	Cisco - Accessing the WAN	5
CNST	292	Independent Projects	1-5
ECS	201	Telecommunications Network Cabling	5
ECS	202	Fiber Optics	5
ECS	249	Job Search and Preparation	3
ETECH	108	CET Certification Preparation	3
INFO	108	Project Management	5

Culinary Arts

www.bates.ctc.edu/CulinaryArts

www.bates.ctc.edu/Dining

Students prepare for a variety of careers in the culinary arts profession and for advanced education at other culinary institutions. Career paths include dinner cook, institutional cook, cook's helper, baker's helper, fry cook, and short order cook. Students work in all aspects of the dining facilities on campus, planning and preparing meals and catering banquet functions. Instruction includes food planning and preparation, and serving and cleanup. Graduates receive a broad base of skills and are well prepared for a variety of entry-level culinary jobs.

FACULTY

Richard Houle, Roger Knapp, J.J. Meland

Associate in Applied Science: 120 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
CARTS	101	Intro Fundamentals to Culinary Arts	6
CARTS	102	Sanitation and Food Safety	2
CARTS	103	Product Identification	2
CARTS	104	Fundamentals of Table Service	3
CARTS	105	Garde Manger	1
CARTS	106	Breakfast Service	2
CARTS	107	Food service math and cost control	4
CARTS	108	Fundamentals of cooking II	4
CARTS	109	Cooking Applications	9
CARTS	110	Food and beverage service	6
CARTS	111	Introduction to baking	5
CARTS	112	Advanced cooking techniques	5
CARTS	201	Menu development	2
CARTS	202	Meats and seafood	3
CARTS	203	Nutrition	2
CARTS	204	Restaurant desserts	5
CARTS	205	Regional and International cuisine	6
CARTS	206	Garde Manger II	2
CARTS	207	Catering and Banquets	8
CARTS	208	Classical cooking applications	9
CARTS	209	Ice Carving	1
CARTS	210	Intro to management	5
CARTS	211	Chef's table service	5
CARTS	212	Techniques of Restaurant Cooking	4
CARTS	213	Wine/ Spirits	4

Certificate of Competency: 64 Credits

CULINARY ARTS LINE COOK

GENERAL EDUCATION REQUIREMENTS

			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
CARTS	101	Intro Fundamentals to Culinary Arts	6
CARTS	102	Sanitation and Food Safety	2
CARTS	103	Product Identification	2
CARTS	104	Fundamentals of Table Service	3
CARTS	105	Garde Manger	1
CARTS	106	Breakfast Service	2
CARTS	107	Food service math and cost control	4
CARTS	108	Fundamentals of cooking II	4
CARTS	109	Cooking Applications	9
CARTS	110	Food and beverage service	6
CARTS	111	Introduction to baking	5
CARTS	112	Advanced cooking techniques	5
CARTS	113	Introduction to Baking	5
CARTS	114	Cost Control	2
CARTS	115	Food and Beverage Service	3
CARTS	116	Menu Development	2
CARTS	117	A La Carte Cooking	5

Certificate of Training: 35 Credits

MOBILE FOOD COOK

REQUIRED COURSEWORK

			CREDITS
CARTS	102	Sanitation and Food Safety	2
CARTS	103	Product Identification	2
CARTS	104	Breakfast Service	2
CARTS	105	Basic Food Preparation	4
CARTS	108	Garde Manger I	1
CARTS	111	Vegetables, Starches, and Grains	5
CARTS	114	Cost Control	2
CARTS	116	Menu Development	2
CARTS	118	Introduction to Catering and Banquets	4
CARTS	120	Food Truck Fundamentals	3
CARTS	121	Business Plans for Mobile Food Services	3
CARTS	122	Food Truck Operation	3
CARTS	214	Employment Preparation	2

Database Technology

www.bates.ctc.edu/Database

From retail to financial services, healthcare to automotive, today's businesses are computer and information-driven, making database developers an important position in most industries. Database developers organize and manage information to corporations and organizations large and small. Students acquire computer and software development skills and prepare for high-demand Oracle certifications. Career opportunities can include data analyst, database administrator, database application developer, database resource specialist and help desk analyst. The program also provides extended learning opportunities for persons previously or currently employed in related professions.

FACULTY

Judith Graham

Associate of Applied Science - Transfer: 115 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
MATH&	146	Introduction to Stats	5
MATH&	141	Precalculus I	5
ENGL&	101	College Composition	5
Social Sciences/Communications Studies:			5
SOC&	101	Introduction to Sociology, or	
CMST&	210	Interpersonal Communications, or	
PSYC&	100	General Psychology	
Humanities			5
ART&	100	Art Appreciation, or	
HIST	101	History of Science and Technology, or	
ASL&	101	American Sign Language I	

REQUIRED COURSEWORK			CREDITS
DATA	101	Data Modeling\Relational Database Design	5
DATA	102	SQL	5
DATA	103	Operating Systems	5
SOFT	101	Computer Concepts	5
SOFT	102	Programming Fundamentals	5
SOFT	121	C-Sharp I	5
SOFT	122	C-Sharp II	5
WEB	101	Microsoft Office Applications	5
WEB	102	HTML, XHTML and CSS	5
DATA	201	PL/SQL	5
DATA	202	Database Fundamentals I	5
DATA	203	Database Fundamentals II	5
DATA	204	Database Fundamentals III	5
DATA	208	SQL Server Admin	5
CS&	141	Computer Science I – JAVA	5
SOFT	142	Programming in JAVA II	5
SOFT	207	Dynamic Web Pages	5
DATA	290	Capstone Project	5

Associate in Applied Science: 110 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
Human Relations:			5
SOC&	101	Introduction to Sociology, or	
CMST&	210	Interpersonal Communications, or	
PSYC&	100	General Psychology	
Communications			5
ENGL&	101	College Composition	
Computations			10
MATH&	146	Introduction to Stats, and	
MATH&	141	Precalculus I	

REQUIRED COURSEWORK			CREDITS
DATA	101	Data Modeling\Relational Database Design	5
DATA	102	SQL	5
DATA	103	Operating Systems	5
SOFT	101	Computer Concepts	5
SOFT	102	Programming Fundamentals	5
SOFT	121	C-Sharp I	5
SOFT	122	C-Sharp II	5
WEB	101	Microsoft Office Applications	5
WEB	102	HTML, XHTML and CSS	5
DATA	201	PL/SQL	5
DATA	202	Database Fundamentals I	5
DATA	203	Database Fundamentals II	5
DATA	204	Database Fundamentals III	5
SOFT	204	Open Source Programming	5
CS&	141	Computer Science I – JAVA	5
SOFT	142	Programming in JAVA II	5
SOFT	207	Dynamic Web Pages	5
DATA	290	Capstone Project	5

Certificate of Competency: 60 Credits

DATABASE TECHNICIAN			CREDITS
GENERAL EDUCATION REQUIREMENTS			
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
DATA	101	Data Modeling\Relational Database Design	5
DATA	102	SQL	5
DATA	103	Operating Systems	5
DATA	201	PL/SQL	5
DATA	202	Database Fundamentals I	5
DATA	203	Database Fundamentals II	5
DATA	204	Database Fundamentals III	5
SOFT	101	Computer Concepts	5
WEB	101	Microsoft Office Applications	5

Dental Assisting

www.bates.ctc.edu/DentalAssisting

Students prepare for careers as chairside dental assistants, dental office managers, and infection control specialists. The program is designed in accordance with American Dental Association guidelines and is fully accredited by the Commission on Dental Accreditation. After completing industry-specific competencies, students may take the Dental Assisting national board examination to earn nationally recognized credentials as a certified dental assistant. Note: General education requirements must be taken 1) prior to entering the program or, 2) before or after the regularly schedule dental assisting coursework.

Prerequisites:

1. High School diploma or GED
2. Minimum age for program entry: 18 years of age
3. A National and Washington State Patrol background check clearance
4. Documentary evidence of current immunizations and medical/dental evaluation within two weeks of program start date.
5. Documentary evidence of current American Heart Association, Health Care Provider approved CPR card within two weeks of program start date.
6. Must meet pre-determined COMPASS levels in reading and writing
7. Meet with Dental Assisting faculty to receive program-specific documentation.

FACULTY

Shawn Adams, Teri Amundsen, Patty Reno

Associate in Applied Science: 95 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
DNTA	110	Introduction to Dental Assisting	2
DNTA	111	Infection Control	5
DNTA	112	Biomedical Sciences	5
DNTA	114	Dental Sciences I	4
DNTA	120	Introduction to Chairside Assisting	4
DNTA	121	Chairside Assisting I	4
DNTA	122	Dental Materials I	3
DNTA	124	HIV/AIDS Training	1
DNTA	127	Office Administration	3
DNTA	128	Dental Sciences II	3
DNTA	130	Dental Sciences III	3
DNTA	131	Chairside Assisting II	3
DNTA	134	Chairside Assisting III	3
DNTA	139	Restorative Services I	5
DNTA	144	Dental Radiology	5
DNTA	146	Chairside Assisting IV	5
DNTA	147	Dental Materials II	3
DNTA	150	Dental Sciences IV	3
DNTA	151	Clinical Experience I	5
DNTA	152	Dental Materials III	4

DNTA	153	Office Administration Applications	2
DNTA	162	Clinical Experience II	3
DNTA	165	Clinical Experience III	2

Certificate of Competency: 90 Credits

DENTAL ASSISTANT			CREDITS
GENERAL EDUCATION REQUIREMENTS			
100+	Level	Human Relations	5
90+	Level	Communications	5

REQUIRED COURSEWORK			CREDITS
DNTA	110	Introduction to Dental Assisting	2
DNTA	111	Infection Control	5
DNTA	112	Biomedical Sciences	5
DNTA	114	Dental Sciences I	4
DNTA	120	Introduction to Chairside Assisting	4
DNTA	121	Chairside Assisting I	4
DNTA	122	Dental Materials I	3
DNTA	124	HIV/AIDS Training	1
DNTA	127	Office Administration	3
DNTA	128	Dental Sciences II	3
DNTA	130	Dental Sciences III	3
DNTA	131	Chairside Assisting II	3
DNTA	134	Chairside Assisting III	3
DNTA	139	Restorative Services I	5
DNTA	144	Dental Radiology	5
DNTA	146	Chairside Assisting IV	5
DNTA	147	Dental Materials II	3
DNTA	150	Dental Sciences IV	3
DNTA	151	Clinical Experience I	5
DNTA	152	Dental Materials III	4
DNTA	153	Office Administration Applications	2
DNTA	162	Clinical Experience II	3
DNTA	165	Clinical Experience III	2

Dental Lab Technician

www.bates.ctc.edu/DentalLab

Students prepare for employment in dental laboratories, fabricating orthodontic appliances, complete and partial dentures, and gold or porcelain crowns and bridges. The curriculum complies with American Dental Association guidelines and is the only fully accredited ADA dental lab technician program in Washington State. Instructors of this program are certified dental technicians.

Prerequisites:

1. A high school diploma or GED.
2. Applicants must be fully ready to enter into general education courses. This entry requirement may be satisfied by providing the registrar with official transcripts showing completion of general education courses, or by satisfactory completion of placement tests that enable the student to enroll directly into required general education courses.

3. Students must take and satisfactorily complete a hands-on wax carving test.

FACULTY

Bob Criss, Kristina Merriman

Associate in Applied Science: 115 Credits

GENERAL EDUCATION REQUIREMENTS CREDITS

100+ Level	Human Relations	5
100+ Level	Communications	5
100+ Level	Mathematics	5

REQUIRED COURSEWORK CREDITS

DENLB 101	Introduction to Dental Lab Technology	2
DENLB 102	Dental Anatomy I	3
DENLB 103	Dental Materials I	3
DENLB 104	Denture Processes I	4
DENLB 105	Denture Processes II	4
DENLB 106	Dental Anatomy II	2
DENLB 107	Denture Processes III	4
DENLB 108	Denture Processes IV	3
DENLB 110	Introduction to Orthodontics	3
DENLB 111	Orthodontic Appliances – Fixed	3
DENLB 112	Orthodontic Appliances – Removable	3
DENLB 120	Removable Partial Dentures I	3
DENLB 121	Removable Partial Dentures II	3
DENLB 122	Removable Partial Dentures III	4
DENLB 123	Removable Partial Dentures IV	3
DENLB 124	Advanced Dentures	3
	or	
DENLB 125	Advanced Orthodontics	3
	or	
DENLB 126	Advanced Removable Partial Dentures	3
DENLB 201	Tooth Morphology Practicum	5
DENLB 202	Dental Materials II	2
DENLB 203	Fixed Prosthodontics I	5
DENLB 204	Principles of Occlusion	2
DENLB 205	Fixed Prosthodontics II	5
DENLB 206	Ceramics I	2
DENLB 207	Understructure Design	5
DENLB 208	Ethics, Jurisprudence & Laboratory Management	3
DENLB 209	Ceramics II	5
DENLB 211	Ceramics III	4

REQUIRED COURSEWORK (cont'd) CREDITS

DENLB 212	Computer Aided Design/Computer Aided Manufacturing	5
DENLB 213	Advanced Technologies	4
	or	
DENLB 214	Advanced Crown & Bridge	3
	or	
DENLB 215	Advanced Dental Ceramics	3
	and	
DENLB 296	Work-based Learning Seminar and	1
DENLB 297	Work-based Learning Experience	3
	or	
DENLB 298	Work-based Learning Experience – No seminar	4

Certificate of Competency: 62 Credits

DENTAL LAB TECHNICIAN

GENERAL EDUCATION REQUIREMENTS CREDITS

90+ Level	Human Relations	5
90+ Level	Communications	5
90+ Level	Mathematics	5

REQUIRED COURSEWORK CREDITS

DENLB 101	Introduction to Dental Lab Technology	2
DENLB 102	Dental Anatomy I	3
DENLB 103	Dental Materials I	3
DENLB 104	Denture Processes I	4
DENLB 105	Denture Processes II	4
DENLB 106	Dental Anatomy II	2
DENLB 107	Denture Processes III	4
DENLB 108	Denture Processes IV	3
DENLB 110	Introduction to Orthodontics	3
DENLB 111	Orthodontic Appliances – Fixed	3
DENLB 112	Orthodontic Appliances – Removable	3
DENLB 120	Removable Partial Dentures I	3
DENLB 121	Removable Partial Dentures II	3
DENLB 122	Removable Partial Dentures III	4
DENLB 123	Removable Partial Dentures IV	3

Denturist

www.bates.ctc.edu/Denturist

Bates Technical College is the only college in Washington State to offer a denturist training program. Denturists are licensed specialists who make, fit, and repair complete and partial dentures. In order to meet the requirements of the denturist profession, candidates must obtain training at an accredited college to qualify to sit for the Washington, Oregon, Idaho, Montana, or Arizona denturist's license examination. Instruction includes anatomy, physiology, microbiology, ethics, medical emergencies, office management, and clinical/laboratory techniques as they apply to denture practices. Students receive clinical experience in the on-campus denturist clinic which provides services to the public. New students may enter the program at the beginning of fall and spring quarters.

Prerequisites:

1. A high school diploma or GED.
2. Applicants must be fully ready to enter into general education courses. This entry requirement may be satisfied by providing the registrar with official transcripts showing actual completion of general education courses, or by satisfactory completion of placement tests that enable the student to enroll directly into required general education courses.
3. Applicants must take and pass aptitude tests measuring dexterity and the ability to visualize three-dimensional forms.
4. Personal interview with instructor.

FACULTY

Mauricio Henriquez, Dr. Kenneth Kais

Associate in Applied Science: 120 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
DNTU	101	Asepsis, Infection, Hazard Control	2
DNTU	102	Biological Concepts	3
DNTU	103	Introduction to Complete Denture Prosthodontics	3
DNTU	104	Baseplates and Occlusion Rims	2
DNTU	105	Tooth Selection and Set I	3
DNTU	106	Dental Materials I	2
DNTU	107	Denture Techniques	2
DNTU	108	Complete Denture Fabrication I	2
DNTU	109	Dental Office Management I	1
DNTU	110	Head Anatomy and Physiology I	2
DNTU	111	Tooth Selection and Set II	1
DNTU	112	Medical Emergencies	3
DNTU	114	Clinical Denture Fabrication II	1
DNTU	115	Partial Dental Casts	2
DNTU	116	Framework Design - RPD	3
DNTU	117	Dental Office Management II	2
DNTU	118	Clinical Denture Procedures I	2
DNTU	119	Dental Impressions Procedures I	2
DNTU	120	Head Anatomy and Physiology II	3
DNTU	121	Tooth Selection and Set III	1
DNTU	123	Complete Denture Repair I	2

REQUIRED COURSEWORK (cont'd)

			CREDITS
DNTU	124	Casts - Partials	2
DNTU	125	Oral Pathology	2
DNTU	126	Clinical Denture Procedures II	2
DNTU	127	Dental Impressions Procedures II	2
DNTU	128	Fabrication Clinical II	1
DNTU	129	Polish Methods - RDP Frames	1
DNTU	131	Wax Patterns - Partials	4
DNTU	132	Teeth Arrangement - RPD	2
DNTU	135	Intro to Oral Pathology I	3
DNTU	136	Clinical Denture Procedures III	2
DNTU	138	Fabrication Clinical III	2
DNTU	139	Dental Office Management III	2
DNTU	201	Complete Denture Repair II	2
DNTU	203	RPD Repair Methods	3
DNTU	204	Dental Office Management IV	2
DNTU	205	Denture Adjustments	1
DNTU	206	Ethics and Jurisprudence	1
DNTU	207	Malocclusions	2
DNTU	208	Clinical Denture Procedures IV	2
DNTU	210	Geriatric Patient Needs	3
DNTU	211	Fabrication Clinical IV	2
DNTU	212	Alternative RPD Systems	2
DNTU	213	Implant and Precision Attachments	1
DNTU	214	Advanced Special Services	1
DNTU	215	Advanced Dental Appliances	1
DNTU	220	Dental Office Management V	2
DNTU	222	Fabrication Clinical V	3
DNTU	223	Dental Office Management VI	3
DNTU	229	Clinical Denture Procedures V	4
DNTU	233	Finish Methods - RPD	1

Diesel & Heavy Equipment Mechanic

www.bates.ctc.edu/Diesel

Students prepare for employment in the diesel and heavy equipment industry, diagnosing, repairing, and rebuilding components of diesel-powered vehicles in an on-campus shop setting. Local industry training partnerships provide practical experience that enhances student instruction. Graduates may find employment as technicians in diesel and heavy duty apprenticeships, working with on/off highway trucks, construction equipment, hydraulics, material handling equipment, agricultural equipment, power generation equipment, marine diesel applications, and utilities. With instructor permission courses may be completed through work-based learning agreements with industry.

Customized training and scholarships are available.

FACULTY

Gene Gablehouse, Lee Jefferson Jr., Mick McGuire, Phil Marr, Mike Sartore

Associate in Applied Science: 105 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
DIESL	100	Basic Electrical Systems	5
DIESL	105	Introduction to Diesel Technology	1
DIESL	106	Engine Construction	5
DIESL	107	Engine Systems	1
DIESL	108	Engine Reassembly	4
DIESL	109	Fuel Systems	2
DIESL	110	Introduction to Air Brakes	2
DIESL	112	Electrical Systems Application	4
DIESL	113	Electronic Engine Systems	3
DIESL	114	Mobile Air Conditioning Systems	3
DIESL	115	Introduction to Power Trains	1
DIESL	117	Automated Manual Transmission Service	2
DIESL	118	Clutch Service	2
DIESL	119	Automatic Transmission Service	2
DIESL	120	Driveline Service	1
DIESL	121	Differentials/ Final Drive	2
DIESL	122	Wheel End Service	1
DIESL	123	Servicing Manual Transmissions	4
DIESL	151	Basic Vehicle Service I	5
DIESL	152	Basic Vehicle Service II	5
DIESL	153	Basic Vehicle Service III	5
DIESL	206	Advanced Service Applications *	7
DIESL	205	Advanced Service Techniques *	15
WBAS	101	Welding Basics	8

Certificate of Competency: 75 Credits

Diesel Service Technician

GENERAL EDUCATION REQUIREMENTS

			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
DIESL	100	Basic Electrical Systems	5
DIESL	105	Introduction to Diesel Technology	1
DIESL	106	Engine Construction	5
DIESL	107	Engine Systems	1
DIESL	108	Engine Reassembly	4
DIESL	109	Fuel Systems	2
DIESL	110	Introduction to Air Brakes	2
DIESL	112	Electrical Systems Application	4
DIESL	113	Electronic Engine Systems	3
DIESL	114	Mobile Air Conditioning Systems	3
DIESL	115	Introduction to Power Trains	1
DIESL	117	Automated Manual Transmission Service	2
DIESL	118	Clutch Service	2
DIESL	119	Automatic Transmission Service	2
DIESL	120	Driveline Service	1
DIESL	121	Differentials/ Final Drive	2
DIESL	122	Wheel End Service	1
DIESL	123	Servicing Manual Transmissions	4
DIESL	151	Basic Vehicle Service I	5
DIESL	152	Basic Vehicle Service II	5
DIESL	153	Basic Vehicle Service III	5

Certificate of Training: 15 Credits

TRUCK AND HEAVY EQUIPMENT ELECTRICAL SYSTEMS

REQUIRED COURSEWORK

			CREDITS
DIESL	100	Basic Electrical Systems	5
DIESL	112	Electrical Systems Application	4
DIESL	113	Electronic Engine Systems	3
DIESL	114	Mobile Air Conditioning Systems	3

Certificate of Training: 13 Credits

DIESEL ENGINES

REQUIRED COURSEWORK

			CREDITS
DIESL	105	Introduction to Diesel Technology	1
DIESL	106	Engine Construction	5
DIESL	107	Engine Systems	1
DIESL	108	Engine Reassembly	4
DIESL	109	Fuel Systems	2

Certificate of Training: 15 Credits

HEAVY DUTY TRUCK DRIVE TRAINS

REQUIRED COURSEWORK

			CREDITS
DIESL	115	Introduction to Power Trains	1
DIESL	117	Automated Manual Transmission Service	2
DIESL	118	Clutch Service	2
DIESL	119	Automatic Transmission Service	2
DIESL	120	Driveline Service	1
DIESL	121	Differentials/ Final Drive	2
DIESL	122	Wheel End Service	1
DIESL	123	Servicing Manual Transmissions	4

This program is an I-BEST-supported program. Academic faculty embedded within the program provide additional support for students. Learn more on page 10.

Digital Media

www.bates.ctc.edu/DigitalMedia

Digital media is a key component in film, television, video and website production, and encompasses a variety of projects, from filming and editing to digital animation and computer games. The constant implementation of new technology makes this a fast-moving field, a good fit for the student who seeks a career in a visual medium with leading-edge technology. Instruction includes production and editing software and the opportunity to achieve practical experience working on a variety of studio projects. Employment opportunities for digital media professionals include work as creative services editors, video editors and graphics editors for production studios, film companies, web design companies, advertising and multimedia companies. The program also provides extended learning opportunities for persons previously or currently employed in the industry.

FACULTY

Brian Parker

Associate in Applied Science: 106 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
DIGIT	102	Image Editing	5
DIGIT	103	Graphic Generation I	5
DIGIT	105	Digital Imaging	5
DIGIT	121	Production Process I	5
DIGIT	126	Production Process II	5
DIGIT	127	Production Process III	5
DIGIT	130	Production Editing I	3
DIGIT	131	Production Editing II	3
DIGIT	132	Digital Media – Video	5
DIGIT	141	Compositing I	5
DIGIT	142	Compositing II	5
DIGIT	143	Digital Media – Animation	5
DIGIT	145	Digital Media – Audio	5
DIGIT	210	Pre-production Project I	5
DIGIT	211	Production Process Project I	5
DIGIT	212	Post-production Project I	5
DIGIT	220	Pre-production Project II	5
DIGIT	221	Production Process Project II	5
DIGIT	222	Post-production Project II	5

Certificate of Competency: 76 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
DIGIT	102	Image Editing	5
DIGIT	103	Graphic Generation I	5
DIGIT	105	Digital Imaging	5
DIGIT	121	Production Process I	5
DIGIT	126	Production Process II	5
DIGIT	127	Production Process III	5
DIGIT	130	Production Editing I	3
DIGIT	131	Production Editing II	3
DIGIT	132	Digital Media – Video	5
DIGIT	141	Compositing I	5
DIGIT	142	Compositing II	5
DIGIT	143	Digital Media – Animation	5
DIGIT	145	Digital Media – Audio	5

Certificate of Training: 15 Credits

Video Production			CREDITS
REQUIRED COURSEWORK			
DIGIT	121	Production Process I	5
DIGIT	126	Production Process II	5
DIGIT	127	Production Process III	5

Certificate of Training: 11 Credits

Editing			CREDITS
REQUIRED COURSEWORK			
DIGIT	130	Non-linear Editing	3
DIGIT	131	Editing Process	3
DIGIT	132	Digital Media – Video	5

Certificate of Training: 15 Credits

Motion Graphics			CREDITS
REQUIRED COURSEWORK			
DIGIT	102	Image Editing	5
DIGIT	103	Graphic Generation I	5
DIGIT	105	Digital Imaging	5

Early Childhood Education

www.bates.ctc.edu/EarlyEducation

Students prepare for careers in Early Childhood Education (ECE) for such positions as Early Learning Program teacher, assistant teacher, program supervisor, and/or center director. The ECE curriculum prepares students to work with children birth to 8 years of age in diverse early childhood environments. The competencies are aligned with Washington State Core Competencies for Early Care and Education Professionals and national standards (National Association for the Education of Young Children) and identify seven (7) content areas organized into five (5) levels of proficiency. Early Childhood students will combine learned theories and practical laboratory experiences with young children in early childhood education programs under supervision with qualified educators.

Recommended:

Complete all 100-level ECE courses before entering 200-level ECE courses.

Prerequisites:

1. Pass the Department of Early Learning Portable Background Check prior to the 1st day of class
2. Negative Mantoux TB test in the 12 months prior to 1st day of class
3. Complete entrance testing at an 80-level minimum

FACULTY

Teresa Borchardt

Associate of Applied Science - Transfer: 96 Credits

REQUIRED COURSEWORK	CREDITS
100+ Level Humanities	5

Associate in Applied Science: 91 Credits

REQUIRED COURSEWORK	CREDITS
100+ Level English	5
100+ Level Mathematics	5
100+ Level Human Relations	5

State Initial Early Childhood Education Certificate

ECED& 105	Intro to Early Childhood Education	5
ECED& 107	Health, Nutrition and Safety	5
ECED& 120	Practicum – Nurturing Relationships*	2

State Short Certificate of Specialization Early Childhood Education

(Must complete Initial Certificate and the following eight credits)

EDUC& 115	Child Development - and	5
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Choose ONE of the following three credit options

(For 2nd year students, Guiding Behavior and one of the following):

EDUC& 130	Guiding Behavior	3
EDUC& 136	School Age	3
ECED& 132	Infant Toddler	3
ECED& 134	Family Child Care	3
ECED& 139	Administration of EL	3

State Early Childhood Education Certificate

(Must complete Initial and Short Certificate, 5 cr. 100+ level English, 5 cr. 100+ level Math, and the following 17 credits)

EDUC& 150	Child, Family and Community	3
ECED& 160	Curriculum Development	5
ECED& 170	Environments for Young Children	3
ECED& 180	Language & Literacy Development	3
ECED& 190	Observation and Assessment	3

Early Childhood Education Required AAS Degree Coursework:

**A 2.0 is required in each key assessment course to meet the five levels of proficiency.

ECED& 139	Administration of EL (This is a required course for 2nd year)	3
EDUC& 204	**Exceptional Children	5
ECE 207	**Professionalism	5
ECE 211	Social and Emotional Development	5
ECE 212	**Cognitive Development	5
ECE 213	Creative Experience-Art & Movement	5

Early Childhood Education Practicums Required AAS Degree Coursework:

(All Practicum coursework must be completed with a 2.0 grade or better,

*Including ECED& 120)

ECE 204	**Early Childhood Practicum II: Birth to 3 years	3
ECE 210	**Early Childhood Practicum III: 3 years to 8 years	3
ECE 214	**Early Childhood Practicum IV: Birth to 8 years	2

Electrical Construction

www.bates.ctc.edu/Electrical

Full-time day and swing shift programs are available for students seeking to earn a degree or certificate in electrical construction for jobs in commercial and residential construction, public utility agencies, and industrial construction and maintenance. The program also provides extended learning opportunities for persons previously or currently employed in these and related occupations. Students interested in receiving an ELO1 license should consult with career advisors to ensure enrollment in the appropriate program.

FACULTY

Jim Androy, Dave Leenhouts, Jeff Llapitan

Associate in Applied Science: 120-158 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
ELCON	101	Introduction to Electrical Construction	3
ELCON	102	Applied Physical Science	5
ELCON	103	Hand and Power Tools	4
ELCON	104	Electrical Service Installation	4
ELCON	105	Electrical Components	4
ELCON	106	Introduction to Residential Wiring	3
ELCON	107	National Electric Code	4
ELCON	108	NFPA 70E Standard	4
ELCON	109	Residential Design	3
ELCON	110	Residential Wiring Techniques	3
ELCON	111	Systems Troubleshooting	3
ELCON	112	Introduction to Blueprint Reading	3
ELCON	113	Blueprint Reading Applications	5
WBAS	101	Welding Basics	8
ELCON	201	Specialty Tools	4
ELCON	202	Commercial Wiring	3
ELCON	203	Commercial Codes and Regulations	3
ELCON	204	Commercial Material Identification	3
ELCON	205	Commercial Installation	3
ELCON	206	Industrial Wiring	3
ELCON	207	Industrial Material Identification	3
ELCON	208	Industrial Installation	3
ELCON	209	Industrial Hazards	3
ELCON	210	Motors and Controllers	4
ELCON	211	Project Estimation	5
ELCON	212	Control Circuits	3
ELCON	213	Motors and Controllers Applications	3
ELCON	214	Transformers	3
ELCON	215	Advanced Motor Controls	3
ELCON	220	Advanced Projects I *	10
ELCON	221	Advanced Projects II *	10
ELCON	222	Advanced Projects III *	10
ELCON	223	Advanced Project s IV*	10

*These courses are available for students who need additional hours in order to meet licensing requirements.

Certificate of Competency: 67 Credits

RESIDENTIAL ELECTRICIAN

GENERAL EDUCATION REQUIREMENTS

			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
ELCON	101	Introduction to Electrical Construction	3
ELCON	102	Applied Physical Science	5
ELCON	103	Hand and Power Tools	4
ELCON	104	Electrical Service Installation	4
ELCON	105	Electrical Components	4
ELCON	106	Introduction to Residential Wiring	3
ELCON	107	National Electric Code	4
ELCON	108	NFPA 70E Standard	4
ELCON	109	Residential Design	3
ELCON	110	Residential Wiring Techniques	3
ELCON	111	Systems Troubleshooting	3
ELCON	112	Introduction to Blueprint Reading	3
ELCON	113	Blueprint Reading Applications	5
ELCON	201	Specialty Tools	4

ELECTRICAL CONSTRUCTION - Licensure Eligibility

This is a career training program that prepares students to apply to the Southwest Washington Electrical Joint Apprenticeship Training Committee, an organization affiliated with the International Brotherhood of Electrical Workers Local #76. Upon completion of the 3000 hours of instruction, students will be given 4000 hours that will apply toward the ELOA1 license.

This program is an I-BEST-supported program. Academic faculty embedded within the program provide additional support for students. Learn more on page 10.

Electrical Engineering Technician

www.bates.ctc.edu/ElectricalEngineering

Bates offers the only program in the region in which students prepare for careers in electrical code application, interior and exterior lighting design, and all aspects of electrical design. Instruction includes all phases of electrical engineering, CAD drafting, and design for commercial buildings. Technician's design and draft electrical power, signal, interior, and exterior lighting systems. They also assist in specification writing and share in on-site construction supervision. Students in this program are encouraged to take the National Institute for Certification in Engineering Technologies (NICET) examinations.

Program Prerequisite: COMPASS Pre-algebra 55 and Reading 80 or approved transition from basic studies

FACULTY

Stan Reed

Associate in Applied Science - Transfer: 123 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
MATH&	141	Precalculus I	
		-or-	5
MATH&	142	Precalculus II	
ENGL&	101	English Composition I	5
CMST&	210	Interpersonal Communications	
		-or-	5
CMST&	230	Small Group Communications	
		-or-	
PSYC&	100	General Psychology	
		Humanities or Natural Science Electives (Two Courses) 10	
HIST	101	History of Science and Technology, or	

*Transferable CTC commonly numbered humanities distribution course or transferable CTC commonly numbered physics or chemistry course.

ENGINEERING CORE REQUIREMENTS			CREDITS
AMATH	170	Engineering Foundational Mathematics	5
ENGR	105	CAD – Two Dimension Fundamentals	5
ENGR	106	Intro to Engineering Technology	2
ENGR	107	Intro to Engineering Graphics	3

REQUIRED COURSEWORK			CREDITS
ETRIC	114	Fundamentals of Electricity	4
ETRIC	123	Electrical Principles	4
ETRIC	129	Applied Electrical Principles	4
ETRIC	141	National Electrical Code	3
ETRIC	143	Fundamentals of Power Systems	3
ETRIC	144	Codes Applications I	4
ETRIC	145	Technical Communications	3
ETRIC	146	Physics for Engineering	3
ETRIC	171	Electrical Math I	4
ETRIC	172	Electrical Math II	4
ETRIC	204	Essentials of Electrical Systems Design	2
ETRIC	205	Fundamentals of Lighting Systems	3
ETRIC	210	Advanced Power Systems	4
ETRIC	225	Advanced CAD Operations	3
ETRIC	227	Introduction to Commercial Electrical Systems	4
ETRIC	230	Intermediate Electrical System Design	5
ETRIC	234	CAD Design Applications	4
ETRIC	245	Commercial Electrical Design Applications	5
ETRIC	246	Advanced Electrical System Design	5
ETRIC	247	Codes Applications II	5
ETRIC	206	Fundamentals of Low-Voltage Systems	2
ETRIC	242	Fundamentals of Cost Estimating	2
ETRIC	207	Fundamentals of High-Voltage Systems	3

Associate in Applied Science: 113 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
MATH&	141	Precalculus I	
		-or-	
MATH&	142	Precalculus II	5
ENGL&	101	English Composition I	5
CMST&	210	Interpersonal Communications	5
		-or-	
CMST&	230	Small Group Communications	
		-or-	
PSYC&	100	General Psychology	

ENGINEERING CORE REQUIREMENTS			CREDITS
AMATH	170	Engineering Foundational Mathematics	5
ENGR	105	CAD – Two Dimension Fundamentals	5
ENGR	106	Intro to Engineering Technology	2
ENGR	107	Intro to Engineering Graphics	3

REQUIRED COURSEWORK			CREDITS
ETRIC	114	Fundamentals of Electricity	4
ETRIC	123	Electrical Principles	4
ETRIC	129	Applied Electrical Principles	4
ETRIC	141	National Electrical Code	3
ETRIC	143	Fundamentals of Power Systems	3
ETRIC	144	Codes Applications I	4
ETRIC	145	Technical Communications	3
ETRIC	146	Physics for Engineering	3
ETRIC	171	Electrical Math I	4
ETRIC	172	Electrical Math II	4
ETRIC	204	Essentials of Electrical Systems Design	2
ETRIC	205	Fundamentals of Lighting Systems	3
ETRIC	210	Advanced Power Systems	4
ETRIC	225	Advanced CAD Operations	3
ETRIC	227	Introduction to Commercial Electrical Systems	4
ETRIC	230	Intermediate Electrical System Design	5
ETRIC	234	CAD Design Applications	4
ETRIC	245	Commercial Electrical Design Applications	5
ETRIC	246	Advanced Electrical System Design	5
ETRIC	247	Codes Applications II	5
ETRIC	206	Fundamentals of Low-Voltage Systems	2
ETRIC	242	Fundamentals of Cost Estimating	2
ETRIC	207	Fundamentals of High-Voltage Systems	3

Electronic and Communications Systems Technology

www.bates.ctc.edu/ElectronicCommunications

Students prepare for employment in the electronic and communications industry working to install, repair, test and maintain a wide variety of equipment including radio and mobile communication, avionics, marine electronics, cellular, satellite, as well as other electronic equipment and systems.

Communications technicians may install and maintain structured cable or fiber optic systems to meet the needs of communication services including telephony, data, video, computer, broadcast or wireless networks. Graduates are employed as field or bench technicians with opportunities to work anywhere from an outdoor mountain top repeater station to a comfortable indoor work environment.

Students also prepare for industry certifications and licenses including the Federal Communications Commission, Network Cabling Specialist, Certified Fiber Optic Technician and Certified Electronics Technician. Take charge of your life today and enroll in our Electronic and Communications Systems degree program to launch your career in any one of many high-growth industries with excellent income potential. With a rapidly changing economy, the time is right for you to acquire the specialized skills needed to succeed in today's fast paced world of electronics and communications.

With a degree or certificate in Electronic and Communications Systems, graduates are well-positioned for employment as:

- Fiber Optics Systems Specialist
- Cellular Systems Technician
- Cable Systems Installer
- Data/Voice Network
- Mobile Radio Technician
- Wireless Systems Support
- Electronic Technician
- Telecommunications Specialist

FACULTY

Laura Robertson

Associate in Applied Science: 100 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
ECS	101	Introduction to Electronics	2
ECS	102	DC Circuits	5
ETECH	103	AC Circuits	5
ECS	104	Analog Circuits I	2
ECS	105	Analog Circuits II	3
ETECH	105	Digital Circuits	5
ECS	108	CET Certification Preparation	3
ECS	201	Telecommunications Network Cabling Systems	5
ECS	202	Fiber Optics	5
ECS	203	FCC Licensure Prep I	3
ECS	204	FCC Licensure Prep II	5
ECS	205	Wireless/RF Communications	2
ECS	206	Wireless Personal Area Networks	1
ECS	207	Wireless Local Area Networks	2
ECS	208	Wireless Broadband Networks	2
ECS	210	Introduction to RF Communications	2

REQUIRED COURSEWORK (cont'd)

			CREDITS
ECS	211	Amplitude Modulation	3
ECS	212	Single Sideband and Frequency Modulation	4
ECS	213	Transmission Lines and Antennas	2
ECS	214	Microwave, Telephony, and Cellular	2
ECS	215	Data and Networking Fundamentals	2
ECS	216	Advanced Communications Principles	2
ECS	249	Job Search and Preparation	3

Students must chose 15 credits from the elective list. 15

Certificate of Competency: 65 Credits

Wireless Voice and Data Communications

GENERAL EDUCATION REQUIREMENTS

			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
ECS	101	Introduction to Electronics	2
ECS	102	DC Circuits	5
ETECH	103	AC Circuits	5
ECS	104	Analog Circuits I	2
ECS	105	Analog Circuits II	3
ETECH	105	Digital Circuits	5
ECS	108	CET Certification Preparation	3
ECS	201	Telecommunications Network Cabling Systems	5
ECS	202	Fiber Optics	5
ECS	205	Wireless/RF Communications	2
ECS	206	Wireless Personal Area Networks	1
ECS	207	Wireless Local Area Networks	2
ECS	208	Wireless Broadband Networks	2

Students must choose eight credits from the electives list. 8

ELECTIVES LIST

			CREDITS
ECS	230	Telecommunications Fundamentals Lab	2
ECS	231	Radio Communications Lab	3
ECS	232	Microwave Lab Fundamentals	2
ECS	233	Signal Processing Lab	4
ECS	290	Independent Study I	3-5
ECS	291	Independent Study II	3-5
ECS	296	Work-based Learning Experience	1-9
INFO	101	Computer Applications Essentials	5
INFO	104	A+ Essentials	5
INFO	105	A+ Practical	5
CNST	201	Cisco Network Fundamentals	5
CNST	202	Cisco Routing Protocols and Concepts	5

Certificate of Training: 25 Credits

Electronics Technician

ELECTRONICS TECHNICIAN

			CREDITS
ECS	101	INTRODUCTION TO ELECTRONICS	2
ECS	102	DC CIRCUITS	5
ETECH	103	AC CIRCUITS	5
ECS	104	ANALOG CIRCUITS I	2
ECS	105	ANALOG CIRCUITS II	3
ETECH	105	DIGITAL CIRCUITS	5
ECS	108	CET CERTIFICATION PREPARATION	3

Electronic Equipment Service Technician

www.bates.ctc.edu/EEST

Students prepare for careers in the electronic equipment service profession as technicians in a wide range of high tech industries, including broadcast audio, broadcast video, car audio, electronic service, medical equipment repair, office automation and video tape. Employment opportunities may also include mobile electronics installer and electronic assembler. Students acquire and hone service technician skills through extensive practice with live equipment, and prepare for industry certification as Certified Electronics Technicians, Mobile Electronics Certified Professionals, and Certified Broadcast Technologists. This program also provides extended learning opportunities for persons previously or currently employed in these and related occupations.

FACULTY

Art Cutting, Franklin Hsu

Associate in Applied Science: 91 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
EEST	101	Safety Principles	3
EEST	102	Applied Math	5
EEST	103	Electronics Principles I	5
EEST	104	DC Electronics	4
EEST	105	AC Electronics	5
EEST	106	Inductors and Capacitors	4
EEST	107	Electronics Principles II	5
EEST	108	Amplifiers and Transistors	4
EEST	109	Electronic Devices	2
EEST	110	Introduction to Programmable Logic Controllers	5
EEST	201	Electronic Principles - Automation	5
EEST	202	Antenna and Satellite Systems	3
EEST	203	Magnetic and Laser Media	3
EEST	204	RF Receivers and Audio Amps	4
EEST	205	Video Projection	1
EEST	206	Emerging Technologies	3
BMST	105	Testing Equipment	5
BMST	106	Soldering	2
BMST	107	Schematics	3
BMST	109	Applied Service I	3
BMST	110	Applied Service II	2

Electronics Technician

www.bates.ctc.edu/ElectronicsTech

Successful completion of coursework in the electronics technician program qualifies graduates to use precision test equipment and hand tools to install, maintain, test, and repair electronic equipment for a broad range of careers, including manufacturing, communications, information technologies and computers, electronic security, avionics, and defense. Students also prepare for Certified Electronic Technician (CET) testing. Note: Completion of electronics technician coursework is required before entering other advanced technologies programs at Bates. All credits earned in the electronics technician program may be applied to fulfill elective requirements for a degree in an advanced technology program at Bates Technical College.

FACULTY

David Skeen

Certificate of Training: 30 Credits

REQUIRED COURSEWORK			CREDITS
ETECH	101	Introduction to Electronics	2
ETECH	102	DC Circuits	5
ETECH	103	AC Circuits	5
ETECH	104	Analog Circuits	5
ETECH	105	Digital Circuits	5
ETECH	106	Microcontrollers	5
ETECH	108	CET Certification Preparation	3

Facilities Maintenance Engineer

www.bates.ctc.edu/FME

Students prepare for careers in the building care and maintenance industry, including boiler operator, building repairer, facilities maintenance engineer and custodian in industrial and office buildings, hotels, schools, and government agencies. Instruction includes electricity, welding, blueprint reading, machine maintenance, grounds keeping, boiler repair and operation, HVAC/R and advanced industry applications. Major elements of the program prepare students for Class V and Class IV boiler operator/fireman certification. This is a pre-apprenticeship program for the Western Washington Operating Engineers Facilities Custodial Services Apprenticeship Committee and the Western Washington Stationary Engineers Apprenticeship Committee. The program also provides extended learning opportunities for persons previously or currently employed in these or other related professions.

FACULTY

Dale Trombley

Associate in Applied Science: 120 Credits

GENERAL EDUCATION REQUIREMENTS

		CREDITS
100+	Level Human Relations	5
100+	Level Communications	5
100+	Level Mathematics	5

REQUIRED COURSEWORK

FACM 101	Safety Principles	2
FACM 102	Fundamentals of Electricity	3
FACM 103	Electrical Service	4
FACM 104	Introduction to Blueprint Reading	5
FACM 105	Engineering Drawings	4
FACM 106	Introduction to Hydraulics/Pneumatics	5
FACM 107	Machine Components	5
FACM 108	Mechanical and Machine Maintenance	5
FACM 109	Tools and Equipment	3
FACM 111	Building Maintenance and Repair Methods	5
FACM 112	Basic Refrigeration	4
FACM 113	Introduction to Building Maintenance	3
FACM 121	Grounds Keeping	5
FACM 122	HVAC Systems	4
FACM 222	Introduction to Remodeling	4
FACM 221	Small Business Planning	3
FACM 230	Computers in Industry	2
FACM 231	Computer Applications	4
FACM 140	Boiler Operations and Certification	12
FACM 144	Advanced Boiler Operations	5
FACM 143	Advanced Projects	10
WBAS 101	Welding Basics	8

Certificate of Competency: 84-87 Credits

GENERAL EDUCATION REQUIREMENTS

		CREDITS
90+	Level Human Relations	5
90+	Level Communications	5
90+	Level Mathematics	5

REQUIRED COURSEWORK

FACM 101	Safety Principles	2
FACM 102	Fundamentals of Electricity	3
FACM 103	Electrical Service	4
FACM 104	Introduction to Blueprint Reading	5
FACM 105	Engineering Drawings	4
FACM 106	Introduction to Hydraulics/Pneumatics	5
FACM 107	Machine Components	5

		CREDITS
FACM 108	Mechanical and Machine Maintenance	5
FACM 109	Tools and Equipment	3
FACM 111	Building Maintenance and Repair Methods	5
FACM 113	Introduction to Building Maintenance	3
FACM 121	Grounds Keeping	5
FACM 222	Introduction to Remodeling	4

STUDENTS MUST CHOOSE ONE OF THE FOLLOWING OPTIONS:

Option A:

FACM 112	Basic Refrigeration	4
FACM 123	HVAC Systems II	4
FACM 221	Small Business Planning	3
FACM 230	Computers in Industry	2
FACM 231	Computer Applications	4

Option B:

FACM 140	Boiler Operations and Certification	12
FACM 144	Advanced Boiler Operations	5

Option C: Work-based Learning

FACM 143	Advanced Projects	10
WBAS 101	Welding Basics	8

BOILER OPERATIONS, Certificate of Training: 12 Credits

REQUIRED COURSEWORK

FACM 140	Boiler Operations and Certification	12
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BUILDING CARE AND MAINTENANCE I, Certificate of Training: 18 Credits

REQUIRED COURSEWORK

FACM 101	Safety Principles	2
FACM 102	Fundamentals of Electricity	3
FACM 103	Electrical Service	4
FACM 104	Introduction to Blueprint Reading	5
FACM 105	Engineering Drawings	4

MAINTENANCE TECHNICIAN I, Certificate of Training: 18 Credits

REQUIRED COURSEWORK

FACM 106	Introduction to Hydraulics/Pneumatics	5
FACM 107	Machine Components	5
FACM 108	Mechanical and Machine Maintenance	5
FACM 109	Tools and Equipment	3

BUILDING CARE AND MAINTENANCE II, Certificate of Training: 17 Credits

REQUIRED COURSEWORK

FACM 111	Building Maintenance and Repair Methods	5
FACM 113	Introduction to Building Maintenance	3
FACM 121	Grounds Keeping	5
FACM 222	Introduction to Remodeling	4

MAINTENANCE TECHNICIAN II, Certificate of Training: 17 Credits

REQUIRED COURSEWORK

FACM 112	Basic Refrigeration	4
FACM 123	HVAC Systems II	4
FACM 221	Small Business Planning	3
FACM 230	Computers in Industry	2
FACM 231	Computer Applications	4

This program is an I-BEST-supported program. Academic faculty embedded within the program provide additional support for students. Learn more on page 10.

Fire Protection Engineering Technology

www.bates.ctc.edu/FireProtection

Fire protection engineering technicians design and service fire sprinklers, fire alarms, and other types of in-place detection and suppression systems. The program is supplemented by preparation for NICET examinations, enabling students to choose from three career paths: Automatic Sprinkler Layout, Fire Alarm/Suppression Systems Layout, and Inspection, Testing, and Maintenance.

FACULTY

Ron Greenman

Associate in Applied Science-Transfer: 119 Credits

GENERAL EDUCATION REQUIREMENTS (AAS-T Degree) CREDITS

MATH& 146	Introduction to Statistics	5
ENGL& 101	English Composition	5
CMST& 230	Small Group Communication	5
	Humanities or Natural Science Electives (Two courses)*	10

*Transferable CTC commonly numbered humanities distribution courses, or transferrable CTC commonly numbered physics or chemistry courses

An AAS-T Degree is directly transferable by an articulation agreement with The Evergreen State College. A transferring student will enter The Evergreen State College as an upper classman but will primarily enroll in lower division, general education coursework. Upon completion the student will be eligible for a Bachelors of Technology Degree

GENERAL EDUCATION REQUIREMENTS CREDITS

AMATH 170	Engineering Foundational Mathematics	5
ENGR 105	CAD – Two Dimensional Fundamentals	5
ENGR 106	Intro to Engineering Technology	2
ENGR 107	Introduction to Engineering Graphics	3

REQUIRED COURSEWORK CREDITS

FPET 101	Introduction to Fire Protection Engineering	3
FPET 103	Research Methods	5
FPET 107	Alarm and Suppression System Design	5
FPET 108	Applied Math and Fire Science I	2
FPET 112	Sprinkler Design I	5
FPET 114	Inspection and Testing	3
FPET 117	Fire Protection Project/Applications I	3
FPET 118	Applied Math and Fire Science II	2
FPET 119	Applied Math and Fire Science III	2
FPET 120	Fire Protection Project/Applications II	3
FPET 122	Building Construction	4
FPET 124	Design Seminar	5
FPET 126	Codes and Standards	4
FPET 127	The Practice of Fire Protection	4
FPET 129	Calculations Seminar	5
FPET 200	Codes and Standards – Applications	3
FPET 206	Practical Applications II – Commissioning and Inspections	4
FPET 231	Projects I	3
FPET 232	Projects II	3
FPET 233	Projects III	3
FPET 234	Projects IV	3
FPET 235	Practical Applications I - Design	5

Associate in Applied Science: 109 Credits

GENERAL EDUCATION REQUIREMENTS CREDITS

MATH& 146	Introduction to Statistics	5
ENGL& 101	English Composition I	5
CMST& 230	Small Group Communications	5

REQUIRED ENGINEERING CORE

AMATH 170	Engineering Foundational Mathematics	5
ENGR 105	CAD – Two Dimensional Fundamentals	5
ENGR 106	Intro to Engineering Technology	2
ENGR 107	Introduction to Engineering Graphics	3

REQUIRED COURSEWORK

FPET 101	Introduction to Fire Protection Engineering	3
FPET 103	Research Methods	5
FPET 107	Alarm and Suppression System Design	5
FPET 108	Applied Math and Fire Science I	2
FPET 112	Sprinkler Design I	5
FPET 114	Inspection and Testing	3
FPET 117	Fire Protection Project/Applications I	3
FPET 118	Applied Math and Fire Science II	2
FPET 119	Applied Math and Fire Science III	2
FPET 120	Fire Protection Project/Applications II	3
FPET 122	Building Construction	4
FPET 124	Design Seminar	5
FPET 126	Codes and Standards	4
FPET 127	The Practice of Fire Protection	4
FPET 129	Calculations Seminar	5
FPET 200	Codes and Standards – Applications	3
FPET 206	Practical Applications II – Commissioning and Inspections	4
FPET 231	Projects I	3
FPET 232	Projects II	3
FPET 233	Projects III	3
FPET 234	Projects IV	3
FPET 235	Practical Applications I - Design	5

Certificate of Competency: 72 Credits

GENERAL EDUCATION REQUIREMENTS CREDITS

AMATH 170	Engineering Foundational Mathematics	5
ENGL 091	Integrated Reading and Writing II	5
CMST& 230	Small Group Communication	5

REQUIRED COURSEWORK CREDITS

ENGR 105	CAD – Two Dimension Fundamentals	5
ENGR 106	Intro to Engineering Technology	2
ENGR 107	Intro to Engineering Graphics	3
FPET 101	Introduction to Fire Protection Engineering	3
FPET 103	Research Methods	5
FPET 107	Alarm and Suppression System Design	5
FPET 108	Applied Math and Fire Science I	2
FPET 112	Sprinkler Design I	5
FPET 114	Inspection and Testing	3
FPET 118	Applied Math and Fire Science II	2
FPET 119	Applied Math and Fire Science III	2
FPET 122	Building Construction	4
FPET 126	Codes and Standards	4
FPET 127	The Practice of Fire Protection	4
FPET 129	Calculations Seminar	5
FPET 200	Codes and Standards – Applications	3

Fire Service

www.bates.ctc.edu/Firefighter

Students prepare for careers as fire fighters, or in closely related occupations that require certification as a firefighter in this program that is accredited by the International Fire Service Accreditation Congress. Training incorporates all entry-level requirements according to nationally recognized standards.

Students who choose the management option are prepared for leadership in the fire service with emphasis on the administration and management of fire service organizations. The program is intended to develop skills in critical and analytical reasoning as they apply to fire services.

Prerequisites:

1. Applicants must meet predetermined assessment test levels in writing, reading, algebra, mechanical reasoning, and space relations.
2. Applicants are to have good eyesight, normal color vision, and be able to pass a stringent physical examination.
3. Applicants must have a current Washington State driver's license, a good driving history, and no criminal record.
4. Students are required to maintain and show proof of medical/health insurance for the duration of Bates Fire Service educational career.

FACULTY

Pat Dale, Lloyd Galey, Pat Piper, Darrell Taylor

Associate in Applied Science: 99-105 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
FIRES	101	Orientation to Fire Service	2
FIRES	102	Firefighter Safety	4
FIRES	103	Fire Service Applications I	5
FIRES	104	Physical Fitness I	1
FIRES	105	Introduction to Fire Science	3
FIRES	106	Fire Hose and Appliances	3
FIRES	107	Fire Service Applications II	5
FIRES	108	Physical Fitness II	1
FIRES	109	Ladders	5
FIRES	110	Intermediate Fire Service	2
FIRES	111	Fire Service Applications III	4
FIRES	112	Physical Fitness III	1
FIRES	121	Wildland Firefighter	2
FIRES	123	Fire Service Applications IV	5
FIRES	124	Physical Fitness IV	1
FIRES	125	Fire Vehicle Operations	3
FIRES	201	Rescue Procedures	3
FIRES	202	Advanced Fire Service	3
FIRES	203	Fire Service Applications V	5
FIRES	204	Physical Fitness V	1
FIRES	206	Employment Preparation	2
FIRES	207	Strategy, Tactics, and Incident Management	2
FIRES	208	Fire Service Applications VI	4
FIRES	209	Healthcare Provider	1
FIRES	215	Hazardous Materials I	1
FIRES	216	Hazardous Materials II	2

Students must choose either Option I or Option II:

Option I: Advanced Firefighter			CREDITS
Fires	212	Advanced Firefighter	4
Fires	213	Physical Fitness	1
FIRES	222	Advanced Pump Operations	4
FIRES	220	Fire Service Applications VII	4

Option II: Emergency Medical Technician			CREDITS
FIRES	225	Emergency Medical Technician (EMT)	14

Certificate of Training: 15 Credits FIRE SERVICE SUPERVISION

GENERAL EDUCATION REQUIREMENTS			CREDITS
FIRES	240	Fire Instructor I	3
FIRES	241	Fire Safety Officer	2
FIRES	242	Fire Officer I	5
FIRES	243	Fire Officer II	5

Hearing Instrument Technology

www.bates.ctc.edu/Hearing

A Hearing Aid Specialist is a healthcare professional who is responsible for assessing hearing and providing services to hard of hearing individuals who can benefit from the use of hearing aids. Responsibilities include assessment, counseling, recommendations, and selection, procurement, fitting and follow-up services for patients.

One pathway to licensure requires satisfactory completion of a two year associates of applies sciences in hearing instruments. The applicant must also pass a written state examination and jurisprudence examination administered by the state of Washington

Successful completion of the Hearing Instrument Program fulfills the two year degree requirement. Instruction includes acoustics, hearing instrument sciences, anatomy and physiology of the human auditory system, pathophysiology of the auditory system, psychological aspects of hearing loss, tests of the hearing organ, making impressions of the ear, business aspects of the hearing industry, overview of related fields and medical implants to improve hearing. An in house hearing clinic provides at minimum 260 hours of direct and 260 hours of indirect clinical supervision by a licensed audiologist.

Prerequisites: Applicants must...

Be fully ready to enter into general education courses. This entry requirement may be satisfied by providing official transcripts showing completion of general education courses or by satisfactory completion of placement tests the enable the student to enroll directly into required general education courses.

Prerequisites:

Applicants must be fully ready to enter into general education courses. This entry requirement may be satisfied by providing the registrar with official transcripts showing actual completion of general education courses, or by satisfactory completion of placement tests the enable the student to enroll directly into required general education courses.

FACULTY

Marci Leong, Au.D.

Associate in Applied Science: 109 Credits

GENERAL EDUCATION REQUIREMENTS

		CREDITS
100+ Level	Human Relations	5
100+ Level	Communications	5
100+ Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
HEAR	110	INTRO HEARING PROFESSION	60 5
HEAR	120	ANATOMY/ PHYSIOLOGY	60 5
HEAR	131	HEARING AIDS I	70 5
HEAR	111	SAFETY PRACTICES	70 4
HEAR	112	ACOUSTICS	70 5
HEAR	113	HEARING ASSESSMENT I	50 3
HEAR	130	DISORDERS-AUDITORY SYS	60 5
HEAR	121	INSTRUMENTATION	90 5
HEAR	122	HEARING ASSESSMENT II	50 3
HEAR	132	AUDIOMETRIC INTRPRTN I	90 5
HEAR	222	HEARING AIDS II	70 5
HEAR	210	HEARING ASSESSMENT III	60 3
HEAR	213	CLINICAL I	90 3
HEAR	220	HEARING AIDS EVALUATION	90 5
HEAR	221	AUDIOMETRIC INTRPRTN II	90 5
HEAR	211	AURAL REHABILITATION I	60 3
HEAR	212	BUSINESS ASPECTS I	60 5
HEAR	223	CLINICAL II	90 3
HEAR	230	HEARING AID SERV/REPAIR	100 5
HEAR	231	AURAL REHABILITATION II	80 4
HEAR	232	BUSINESS ASPECTS II	80 4
HEAR	233	CLINICAL III	120 4

Heating, Ventilation, Air Conditioning & Refrigeration Technician

www.bates.ctc.edu/HVAC

Students prepare for certified entry-level employment in the heating, ventilation, air conditioning, and refrigeration industry. The technical skills acquired in this program may be applied in areas such as air conditioning, systems controls, energy management systems, heating and ventilation technicians, and sales. The program also provides extended learning opportunities for persons previously or currently employed in related professions.

Note: Students are required to pass the Air Conditioning and Refrigeration Institute industry competency exam to complete the program: Two examinations to obtain a degree; one exam to obtain a certificate. Sufficient training is provided to qualify students to take the Environmental Protection Agency CFC certification examination required to work in the industry. A total of 1,100 hours of credit is applied toward the Washington State O6A electrical certificate.

FACULTY

Joe Lyon

Associate in Applied Science: 103 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
HVAC	101	HVAC Fundamentals	3
HVAC	102	Safety	2
HVAC	103	HVAC/R Science	2
HVAC	104	Tools and Equipment	4
HVAC	105	Refrigerant and Refrigeration Systems I	4
HVAC	106	Refrigerant and Refrigeration Systems II	3
HVAC	107	Electrical Systems and Components	5
HVAC	108	Electrical Troubleshooting	3
HVAC	109	Soldering and Brazing Applications	3
HVAC	110	Residential Systems	5
HVAC	111	Light Commercial Systems	5
HVAC	112	Heat Pump Systems	4
HVAC	201	System Design, Sizing, and Layout	4
HVAC	210	Drafting and Blueprint Applications	4
HVAC	211	Commercial Environmental Systems	5
HVAC	212	Chilled Water Systems	2
HVAC	213	Hydronic Heating Systems	2
HVAC	214	Cooling Tower	1
HVAC	215	Thermal Storage	2
HVAC	216	CFC Exam Preparation	1
HVAC	217	Commercial Refrigeration	3
HVAC	218	Installation, Maintenance, and Troubleshooting	2
HVAC	219	AHRI Industry Competency Exam #1	3
HVAC	220	AHRI Industry Competency Exam #2	3
HVAC	221	Industry Math	5

Students must choose one option:

Option A:			CREDITS
HVAC	202	Welding Processes	2
HVAC	203	Hand-held Torch Burning Applications	2
HVAC	204	SMAW (ARC) Applications	2
HVAC	205	GMAW (MIG) applications	2

Option B:			CREDITS
HVAC	206	Basic Metalworking	2
HVAC	207	Basic Layout and Patterns	2
HVAC	208	Fabrication Practices	2
HVAC	209	Air Balance and Duct Sizing	2

HVAC/R Support Technician Certificate of Competency: 99 Credits

HVAC/R SUPPORT TECHNICIAN GENERAL EDUCATION REQUIREMENTS			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK			CREDITS
HVAC	101	HVAC Fundamentals	3
HVAC	102	Safety	2
HVAC	103	HVAC/R Science	2
HVAC	104	Tools and Equipment	4
HVAC	105	Refrigerant and Refrigeration Systems I	4
HVAC	106	Refrigerant and Refrigeration Systems II	3
HVAC	107	Electrical Systems and Components	5
HVAC	108	Electrical Troubleshooting	3
HVAC	109	Soldering and Brazing Applications	3
HVAC	110	Residential Systems	5
HVAC	111	Light Commercial Systems	5
HVAC	112	Heat Pump Systems	4
HVAC	210	Drafting and Blueprint Applications	4
HVAC	211	Commercial Environmental Systems	5
HVAC	212	Chilled Water Systems	2
HVAC	213	Hydronic Heating Systems	2
HVAC	214	Cooling Tower	1
HVAC	215	Thermal Storage	2
HVAC	216	CFC Exam Preparation	1
HVAC	217	Commercial Refrigeration	3
HVAC	218	Installation, Maintenance, and Troubleshooting	2
HVAC	219	AHRI Industry Competency Exam #1	3
HVAC	220	AHRI Industry Competency Exam #2	3
HVAC	221	Industry Math	5

Students must choose one option:

Option A:			CREDITS
HVAC	202	Welding Processes	2
HVAC	203	Hand-held Torch Burning Applications	2
HVAC	204	SMAW (ARC) Applications	2
HVAC	205	GMAW (MIG) applications	2

Option B:			CREDITS
HVAC	206	Basic Metalworking	2
HVAC	207	Basic Layout and Patterns	2
HVAC	208	Fabrication Practices	2
HVAC	209	Air Balance and Duct Sizing	2

Industrial Electronics and Robotics Technician

www.bates.ctc.edu/IERT

In the Industrial Electronics and Robotics Technician program, students learn to install, diagnose, maintain, modify, test, and calibrate electronic, electrical, and mechanical systems used in manufacturing support equipment and production machinery, including precision machine tools (CNC) and industrial robots.

The program consists of a certificate of training in Basic Electricity, a one-year Electrical Technician certificate, and a two-year Industrial Technology degree that prepares students for entry into electrical apprenticeships.

The program features equipment and software from industry leaders such as Allen Bradley, Rockwell Automation, FANUC Robotics, Bosch, Siemens, Famic Technologies, and National Instruments. Focus is on the intelligent control of machines and processes using programmable logic controllers (PLCs), embedded controllers, variable frequency drives (VFDs), industrial networks, sensors & transducers, instrumentation and robotics. The electrical curriculum is based on guidelines from the National Joint Apprenticeship Training Committee (NJATC) for electrical trades. The program also offers in-depth career training for those interested in becoming an electronics technician in the manufacturing, scientific, aerospace, or civilian military industries.

FACULTY

Landon Johnson, Tom Newman

Associate in Applied Science: 119 Credits

GENERAL EDUCATION REQUIREMENTS			CREDITS
100+	Level	Human Relations	5
100+	Level	Mathematics	5
100+	Level	Communications	5

REQUIRED COURSEWORK

IERT	101	Introduction to Industrial Robots	5
IERT	104	Basic Blueprint Reading	3
IERT	106	Introduction to Numeric Controls	3
IERT	108	Basic Precision Measuring Tools	1
IERT	110	Electricity and Magnetism	2
IERT	115	DC Circuit Analysis	5
IERT	118	Fluid Power	5
IERT	120	Alternating Current	2
IERT	121	Practical CNC	5
IERT	122	Servo Systems	5
IERT	123	Metal Fabrication	5
IERT	125	AC Circuit Analysis	5
IERT	126	Analog Electronics	5
IERT	128	Polyphase AC Power Generation and Distribution	5
IERT	135	Mechanics	3
IERT	140	Motors and Control Systems	5
IERT	145	Construction Practices, The NEC, and UL Guides	5
IERT	212	Digital Logic	5
IERT	215	Programmable Logic Controllers	5
IERT	225	Sensors and Transducers	3
IERT	230	Programming Methodologies	2
IERT	238	Embedded Controllers	5
IERT	240	Industrial Robotics	5
IERT	255	Instrumentation	5
IERT	268	Industrial Networks	5

Certificate of Competency: 57 Credits

ELECTRICAL TECHNICIAN			CREDITS
GENERAL EDUCATION REQUIREMENTS			
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK

IERT	110	Electricity and Magnetism	2
IERT	115	DC Circuit Analysis	5
IERT	118	Fluid Power	5
IERT	120	Alternating Current	2
IERT	125	AC Circuit Analysis	5
IERT	126	Analog Electronics	5
IERT	128	Polyphase AC Power Generation and Distribution	5
IERT	135	Mechanics	3
IERT	140	Motors and Control Systems	5
IERT	145	Construction Practices, the NEC, and UL Guides	5

Certificate of Training: 14 Credits

BASIC ELECTRICITY			CREDITS
GENERAL EDUCATION REQUIREMENTS			
IERT	110	Electricity and Magnetism	2
IERT	115	DC Circuit Analysis	5
IERT	120	Alternating Current	2
IERT	125	AC Circuit Analysis	5

Certificate of Training: 18 Credits

FUNDAMENTALS OF PROGRAMMABLE LOGIC CONTROLLERS

In this short-term training certificate, students acquire basic programmable logic controllers (PLC) skills and knowledge and learn how programmable logic controllers (PLC) can be used in a plant or manufacturing system.

GENERAL EDUCATION REQUIREMENTS			CREDITS
IERT	130	Introduction to Electronic Equipment Technology	3
IERT	131	Electrical Safety	2
IERT	132	Industrial Electricity	3
IERT	134	Electrical Circuits I	5
IERT	136	Programmable Logic Controllers	5

Information Technology Specialist

www.bates.ctc.edu/ITSpecialist

Information technologies specialists are an integral part of nearly every industry in today's technology-dominated workplace. Students in this program prepare for careers that focus on PC and network support with emphasis on both practical experience and certification preparation, including LAN/WAN administrator, network system support specialist. Students are encouraged to obtain Microsoft, Cisco, and CompTIA, certifications. Possible certifications students can obtain include, A+, MCITP, MCP, MCDST, MCSE, and MCSA.

Note: Bates Technical College is an official Cisco Networking Academy.

FACULTY

Emmett Peterson

Associate in Applied Science: 112 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
INFO	101	Computer Applications Essentials	5
INFO	102	Fundamentals of Information Technology	4
INFO	103	Internet Applications	5
INFO	104	A+ Essentials	5
INFO	105	A+ Practical	5
INFO	106	Electronics Basics	5
INFO	107	Structured Cabling	3
INFO	110	Emerging Technologies	5
INFO	111	Practical Applications	5
CNST	206	MS Client Operating Systems	5
CNST	207	Network Infrastructure	5
CNST	209	Directory Services	5
CNST	210	Network Security	5
CNST	201	Cisco Network Fundamentals	5
CNST	202	Cisco Routing Protocols and Concepts	5
CNST	205	Fundamentals of Linux	5

Students must chose 20 credits from the electives list.

ELECTIVES LIST

			CREDITS
CNST	203	Cisco LAN Switching and Wireless	5
CNST	204	Cisco – Accessing the WAN	5
INFO	108	Project Management	5
INFO	292	Independent Projects	1-5
ECS	201	Telecommunications Network Cabling	5
ECS	202	Fiber Optics	5
ECS	249	Job Search and Preparation	3

Machinist

www.bates.ctc.edu/Machinist

Machinists produce precision parts, tools, and instruments utilizing both manual and computerized machining systems. For over sixty years, the machinist program has prepared students for apprentice positions through local apprenticeship agencies. Instruction contains extensive hands-on experience in the use of traditional precision tooling and machining equipment, as well as sophisticated, state-of-the-art technology including CNC lathes, CNC milling machines, and program-specific software. The program also provides extended learning opportunities for persons previously or currently employed in related professions.

FACULTY

Steve Rose

Associate in Applied Science: 101 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5

REQUIRED CORE

MACH	116	Introduction to Machining Technology	3
MACH	117	Measurement Applications	5
MACH	118	Geometric Dimensioning and Tolerancing	5
MACH	119	Blueprint Reading II	5
MACH	120	Machine Shop Mathematics II	5

REQUIRED COURSEWORK

MACH	111	Machine Shop Mathematics I	2
MACH	112	Industrial Safety I	3
MACH	114	Lathe Operations I	4
MACH	121	Lathe Operations II	4
MACH	122	Grinding I	2
MACH	123	Machining I	2
MACH	124	Milling I	2
MACH	126	Blueprint Reading I	2
MACH	131	Industrial Safety II	2
MACH	133	Milling Operations II	3
MACH	134	Advanced Machining I	4
MACH	137	Advanced Machining II	2
MACH	139	Grinding II	2
MACH	142	Advanced Machine Shop Applications	8
		OR	
WBAS	101	Welding Basics	
MACH	211	Machining III	1
MACH	212	Manufacturing Support	1
MACH	213	Advanced Machining III	5
MACH	221	CNC Lathe I	2
MACH	225	CNC Lathe II	3
MACH	230	CNC Mill I	4
MACH	224	Computer-Aided Manufacturing (CAM)	5
MACH	234	CNC Mill II	5
MACH	232	Advanced CNC Machining I	5
MACH	233	Advanced CNC Machining II	5

Certificate of Competency: 65 Credits

MANUAL MACHINING

GENERAL EDUCATION REQUIREMENTS

			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5

REQUIRED CORE

MACH	116	Introduction to Machining Technology	3
MACH	117	Measurement Applications	5
MACH	118	Geometric Dimensioning and Tolerancing	5
MACH	119	Blueprint Reading II	5
MACH	120	Machine Shop Mathematics II	5

REQUIRED COURSEWORK

MACH	111	Machine Shop Mathematics I	2
MACH	112	Industrial Safety I	3
MACH	114	Lathe Operations I	4
MACH	121	Lathe Operations II	4
MACH	122	Grinding I	2
MACH	123	Machining I	2
MACH	124	Milling I	2
MACH	126	Blueprint Reading I	2
MACH	131	Industrial Safety II	2
MACH	133	Milling Operations II	3
MACH	134	Advanced Machining I	4
MACH	137	Advanced Machining II	2
MACH	139	Grinding II	2
MACH	142	Advanced Machine Shop Applications	8
		OR	
WBAS	101	Welding Basics	

This program is an I-BEST-supported program. Academic faculty embedded within the program provide additional support for students. Learn more on page 10.

Marketing & Business Management

www.bates.ctc.edu/Marketing

Students prepare for careers in sales, advertising, merchandising, customer service, market research, business and management, and public relations. When available, work-based learning activities provide students with the opportunity to work in Puget Sound businesses. Major projects allow students to apply competencies such as preparing formal business plans, performing research studies, and developing advertising campaigns. This program also provides extended learning opportunities to persons previously or currently employed in these and related professions.

FACULTY

Kathy Brock

Associate in Applied Science: 105 – 108 – 110 Credits

Associate of Applied Science - Transfer: 110 – 113 – 115 Credits

GENERAL EDUCATION REQUIREMENTS (AT Degree)			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

GENERAL EDUCATION REQUIREMENTS (AAS-T Degree)

100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5
100+	Level	Humanities/Social Sciences	5

REQUIRED COURSEWORK

			CREDITS
MARK	101	Marketing Principles	5
MARK	102	Customer Service	5
MARK	103	Written Business Communication	3
MARK	104	Business Negotiations and Collaboration	3
MARK	105	Information Research and Acquisition	1
MARK	106	Business Concepts	5
MARK	107	Cross Cultural Communications	5
MARK	108	International Trade Practices	5
MARK	109	Economics: A Marketing Perspective	5
MARK	110	Principles of Management and Supervision	5
MARK	111	Cyber Marketing/E-Commerce	5
MARK	112	Business Law	5
MARK	113	Accounting Principles	5

Students must choose one option:

Option A - Marketing

MARK	121	Branding/Corporate Identity	2
MARK	122	Advertising: Creation and Planning	4
MARK	123	Business Software Applications	3
MARK	124	Sales Strategies and Consumer Psychology	5
MARK	125	Business and Marketing Presentation Skills	3
MARK	126	Planning and Leadership	5
MARK	127	Public Relations	3
MARK	128	Marketing Research and Forecasting	3
MARK	129	Advanced Marketing Projects	5

Option B: Business Management

MARK	201	Introduction To Leadership Skills and Ethics	3
MARK	202	Introduction To Strategic Marketing	4
MARK	203	Introduction To Business Accounting/Finance	5
MARK	204	Introduction To Presentation and Facilitation Skills	3
MARK	205	Advanced Business Projects	5
MARK	206	Teaming for Success	3
MARK	207	Introduction To Managing Change	3
MARK	208	Achieving Results Through Influence	3
MARK	209	Entrepreneurial Concepts	5
MARK	210	Introduction to Project Management	4

Option C: International Commerce

MARK	221	International Business Law	2
MARK	222	Supply Chain Operations	5
MARK	223	Supply Chain Risk Management	2
MARK	224	Supply Chain Intermediaries	5
MARK	225	International Marketing	3
MARK	226	Offshore Procurement Process	2
MARK	227	International Market Research and Planning	3
MARK	228	Global Trade Financing	5
MARK	229	International Payment, Credit, and Collections	5
MARK	230	Advanced Projects - Marketing Plan Implementation	4

Certificate of Competency: 49 Credits

SALES AND CUSTOMER SERVICE

GENERAL EDUCATION REQUIREMENTS			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
MARK	101	Marketing Principles	5
MARK	102	Customer Service	5
MARK	103	Written Business Communication	3
MARK	105	Information Research and Acquisition	1
MARK	106	Business Concepts	5
MARK	122	Advertising: Creation and Planning	4
MARK	123	Business Software Applications	3
MARK	124	Sales Strategies and Consumer Psychology	5
MARK	125	Business and Marketing Presentation Skills	3

Mechanical Engineering

www.bates.ctc.edu/MechanicalEngineer

Students prepare for careers as engineering technicians with an emphasis on mechanical systems. Instruction focuses on computer-aided drafting and design (CADD). Students have opportunities to work on community and college projects that may include patent application drawings and detailed machine shop production drawings. Extended learning opportunities are available with industry partners

Program Prerequisite: COMPASS Pre-algebra 55 and Reading 80 or approved transition from basic studies

FACULTY

Curt Meyer

Associate in Applied Science - Transfer: 118 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
MATH&	141	Precalculus I	
		-or-	5
MATH&	142	Precalculus II	
ENGL&	101	English Composition I	5
CMST&	210	Interpersonal Communications	
		-or-	5
CMST&	230	Small Group Communications	
		-or-	
PSYC&	100	General Psychology	
		Humanities or Natural Science Electives (Two Courses) 10	
HIST	101	History of Science and Technology, or	
		*Transferable CTC commonly numbered humanities distribution course or transferable CTC commonly numbered physics or chemistry course.	

ENGINEERING CORE REQUIREMENTS

			CREDITS
AMATH	170	Engineering Foundational Mathematics	5
ENGR	105	CAD – Two Dimension Fundamentals	5
ENGR	106	Intro to Engineering Technology	2
ENGR	107	Intro to Engineering Graphics	3

REQUIRED COURSEWORK

MET	105	Orthographic Projections	7
MET	106	Sectional Views	5
MET	107	Auxiliary Views	5
MET	108	Principles of Dimensioning	4
MET	110	Dimensioning Practices	7
MET	111	Geometric Dimensioning and Tolerancing	5
MET	112	Basic Geometric Constructions	6
MET	114	Introduction to Sketching	5
MET	214	Engineering Projects I	7
MET	215	Axonometric and Oblique Projections	5
MET	216	Engineering Projects II	7

ELECTIVE COURSEWORK OPTIONS: (Students must choose one option listed below.)

Option A

MET	201	Machine Shop Drawings	4
MET	202	Threads, Fasteners, and Springs	3
MET	203	Gears	4
MET	204	Cams	4

Option B

MET	205	Pneumatic/Hydraulic Symbols	3
MET	206	Piping and Instrumentation Drawings	4
MET	207	Valve Sections	4
MET	208	Pump Sections	4

Option C

MET	209	Production Drawings	4
MET	210	Duct Fitting Symbols	3
MET	211	Flat Pattern Development	5
MET	212	Basic Air Flow Systems	3

Associate in Applied Science: 108 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
MATH&	141	Precalculus I	
		-or-	5
MATH&	142	Precalculus II	
ENGL&	101	English Composition I	5
CMST&	210	Interpersonal Communications	
		-or-	5
CMST&	230	Small Group Communications	
		-or-	
PSYC&	100	General Psychology	

ENGINEERING CORE REQUIREMENTS

			CREDITS
AMATH	170	Engineering Foundational Mathematics	5
ENGR	105	CAD – Two Dimension Fundamentals	5
ENGR	106	Intro to Engineering Technology	2
ENGR	107	Intro to Engineering Graphics	3

REQUIRED COURSEWORK

MET	105	Orthographic Projections	7
MET	106	Sectional Views	5
MET	107	Auxiliary Views	5
MET	108	Principles of Dimensioning	4
MET	110	Dimensioning Practices	7
MET	111	Geometric Dimensioning and Tolerancing	5
MET	112	Basic Geometric Constructions	6
MET	114	Introduction to Sketching	5
MET	214	Engineering Projects I	7
MET	215	Axonometric and Oblique Projections	5
MET	216	Engineering Projects II	7

ELECTIVE COURSEWORK OPTIONS: (Students must choose one option listed below.)

Option A

MET	201	Machine Shop Drawings	4
MET	202	Threads, Fasteners, and Springs	3
MET	203	Gears	4
MET	204	Cams	4

Option B

MET	205	Pneumatic/Hydraulic Symbols	3
MET	206	Piping and Instrumentation Drawings	4
MET	207	Valve Sections	4
MET	208	Pump Sections	4

Option C

MET	209	Production Drawings	4
MET	210	Duct Fitting Symbols	3
MET	211	Flat Pattern Development	5
MET	212	Basic Air Flow Systems	3

Occupational Therapy Assistant

www.bates.ctc.edu/OTA

Occupational therapy assistants work under the direction of occupational therapists to provide services to persons whose lives have been challenged due to injury, illness, developmental deficits or aging. Occupational therapy assistants view individuals in a holistic manner and help people prevent, lessen or overcome disabilities so they are able to function more independently in every aspect of daily living. Occupational therapy assistants use therapeutic activities and exercises to improve a client's skills for performing a variety of important everyday tasks safely and independently in their role at work, home, school, and in the community. Students in this program receive fundamental skills in occupational therapy and extensive clinical training. Successful completion of the program prepares students for careers as occupational therapy assistants in hospitals, out-patient clinics, rehabilitation centers, mental health centers, assisted living and nursing care facilities, and school systems.

Prerequisites:

1. Be at least 18 years of age and have proof of high school completion or GED
2. Completion of the OTA Foundation courses with a grade of 3.0 or better prior to program entry.
3. Completion of the OTA program enrollment application.

PROGRAM DIRECTOR

Denise Tremblay

FACULTY

Aimee Sidhu, Phyllis Lang

Associate in Applied Science: 120 Credits

REQUIRED FOUNDATION COURSEWORK		CREDITS
ENGL& 100+	English Composition course	5
MATH 100+	Mathematics	5
PSYC& 200	Lifespan Psychology	5
BIOL 170	Medical Terminology	2
BIOL& 175	Survey of A&P	5

(These courses must be completed with a minimum grade of 3.0 before enrolling in the OTA core coursework.)

REQUIRED CORE COURSEWORK

REQUIRED CORE COURSEWORK		CREDITS
OTA 102	Health and Wellness and the OTA	3
OTA 103	Functional Movement	5
OTA 104	Therapeutic Use of Self	5
OTA 105	Nervous System Function	4
OTA 106	Therapeutic Activities and Performance I	5
OTA 107	Developmental Disabilities - Treatment and Applications	5
OTA 108	Applied Experience I-A	1
OTA 109	Adaptive Technologies	5
OTA 110	Documentation Skills	3
OTA 111	Introduction to Occupational Therapy	5
OTA 201	Therapeutic Activities and Performance II	5
OTA 202	Psychosocial Dysfunctions: Treatment and Applications	8
OTA 203	Applied Experience - I-B	1
OTA 204	Seminar - Applied Mental Health	1
OTA 210	Physical Disabilities: Treatment and Applications	8
OTA 212	Applied Experience - I-C	1
OTA 213	Seminar - Applied Physical Rehabilitation	1
OTA 220	Clinical Fieldwork Level II - Rotation A	11
OTA 221	Clinical Fieldwork Level II - Seminar A	1
OTA 222	Clinical Fieldwork Level II - Rotation B	11
OTA 223	Clinical Fieldwork Level II - Seminar B	1
OTA 231	OTA and Special Settings	4
OTA 232	Professional Issues for the OTA	4

The Occupational Therapy Assistant program at Bates is accredited with the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), www.acoteonline.org, located at 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449. ACOTE's telephone number is 301.652.2682.

Our graduates are eligible to sit for the national certification examination for the occupational therapy assistant administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this exam, the individual will be a certified occupational therapy assistant (COTA). In addition, most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certificate Examination.

Note that a felony conviction may affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure.

Power Sports & Equipment Technology

www.bates.ctc.edu/PowerSports

Students in the program prepare for careers in the power sports and power equipment industries. Technicians in these areas maintain and repair a variety of two- and four-cycle engines, power trains, and chassis.

Power Sports: Maintenance and repair of power sports vehicles such as motorcycles, sport utility vehicles, all-terrain vehicles, personal watercraft, and boats for employment in dealerships, independent repair shops, and self-employment.

Power Equipment: Maintenance and repair of outdoor power equipment, including lawn and garden equipment and light industrial/commercial equipment. Employment may be in lawn and garden stores, department stores, rental companies, landscaping companies, golf courses, fleet repair facilities, government agencies, and self-employment.

FACULTY

Matthew Spitzer

Associate in Applied Science: 111 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
POW	101	Introduction to Power Sports	5
POW	102	Pre-Delivery Maintenance	3
POW	103	Seasonal Maintenance	5
POW	104	Periodic Maintenance	5
POW	120	Engines – Failure Analysis	5
POW	121	Engine Repair Methods	5
POW	122	Engines Installation Methods	5
POW	130	Exhaust Systems	5
POW	131	Lubrication/Cooling Systems	5
POW	132	Advanced Engine Service	5
POW	140	Fundamentals of Electricity	3
POW	141	Electrical Systems	5
POW	142	Electrical Systems - Diagnosis	5
POW	143	Brake Systems	4
POW	150	Introduction to Power Trains	3
POW	151	Power Train Service	5
POW	152	Introduction to Marine Propulsion	3
POW	153	Marine Propulsion Service	5
POW	160	Introduction to Chassis	3
POW	161	Chassis Service	5
POW	162	Advanced Projects*	7

*This course may be substituted with a work-based learning component.

Certificate of Competency: 80 Credits

POWER SPORTS AND EQUIPMENT TECHNICIAN

GENERAL EDUCATION REQUIREMENTS

			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK

			CREDITS
POW	101	Introduction to Power Sports	5
POW	102	Pre-Delivery Maintenance	3
POW	103	Seasonal Maintenance	5
POW	104	Periodic Maintenance	5
POW	120	Engines – Failure Analysis	5
POW	121	Engine Repair Methods	5
POW	122	Engines Installation Methods	5
POW	130	Exhaust Systems	5
POW	131	Lubrication/Cooling Systems	5
POW	132	Advanced Engine Service	5
POW	140	Fundamentals of Electricity	3
POW	141	Electrical Systems	5
POW	142	Electrical Systems - Diagnosis	5
POW	143	Brake Systems	4

Practical Nurse

www.bates.ctc.edu/PracticalNurse

Students prepare for careers as licensed practical nurses in a variety of healthcare settings. Clinical activities are an integral part of this program which is approved by the Washington Nursing Care Quality Assurance Commission. During the clinical phase, students demonstrate nursing competencies under supervision at clinical sites and improve skills by working with a healthcare professional in a preceptorship role. Graduates are required to pass the Washington State Practical Nursing licensing exam to practice as licensed practical nurses in Washington State. Prior to licensing exam, applicant will need to provide proof of high school graduation or equivalent.

Prerequisites: Applicants must...

1. Pass a clear National Criminal background check covering Wash. state.
2. Obtain medical and dental clearance.
3. Pass a drug screen.
4. Provide documentary evidence of current immunizations, medical insurance (illness and injury), and Health Care Provider CPR.
5. Possess current liability insurance coverage in the amount of \$1 million.
6. AIDS/HIV Training - seven hours.

Program Director

Dianne Nauer

FACULTY

Various

Associate in Applied Science: 110-119 Credits

GENERAL EDUCATION REQUIREMENTS

CREDITS

(These courses must be completed before enrolling in the PNUR coursework.)

BIOL&	241	Human A & P I	5
BIOL&	242	Human A & P 2	5
BIOL&	260	Microbiology	5
CHEM&	121	Intro to Chemistry	5
CMST&	210	Interpersonal Communications	5
CTNA	101	Nursing Assistant Certified *	5
ENGL&	101	English Composition	5
PSYC&	200	Lifespan Psychology	5
MATH&	146	Introduction to Statistics	5
NUTR&	101	Nutrition	5

Nursing I

(All PNUR coursework must be completed with a 3.2 grade or better.)

PNUR	201	Nursing Math/Pharmacology	4
PNUR	202	Personal Vocational Relationships	4
PNUR	203	Nursing Fundamentals I/Sim I	7

NURSING II

PNUR	220	Nursing Fundamentals II/Sim II	4
PNUR	221	Med/Surg I	7
PNUR	222	Clinical I/Sim III/Clinical Math	4

NURSING III

PNUR	230	Med/Surg II	5
PNUR	231	Newborn/Maternal/Reproductive Nursing	2
PNUR	232	Pediatrics	2
PNUR	233	Clinical II/Sim IV	3
PNUR	234	Advanced Clinical II/Sim V/Clinical Math	3

Electives

PNUR	233R	Independent Project	3
PNUR	234R	Independent Project	3

NURSING IV

PNUR	240	Med/Surg III	7
PNUR	241	Clinical III /Sim VI/ Clinical Math	4
PNUR	242	Preceptor Experience	4
Elective			
PNUR	241R	Independent Project	3

* This course may be waived with active proof of NAC license.

This program is an I-BEST-supported program. Academic faculty embedded within the program provide additional support for students. Learn more on page 10.

Sheet Metal Technology

www.bates.ctc.edu/SheetMetal

Bates offers the only program in the region that prepares students for apprenticeship employment in the sheet metal industry. Customer projects completed in the classroom, shop, and the field, provide students with the necessary foundational skills to succeed in this high demand and rewarding occupation. Instruction includes equipment operation, fabrication and installation of various ventilation systems, blueprint reading, computer-aided drafting, air distribution, and material handling. This is a pre-apprenticeship program for the Western Washington Sheet Metal Joint Apprenticeship Training Committee. Students who complete all required elements of the selected Sheet Metal Technology course offerings will be awarded direct entry into the Western Washington Sheet Metal JATC Local 66 building trades or residential apprenticeship program. Students will be placed at the end of the out of work list. Prior educational credits are recognized upon entrance into the apprenticeship.

FACULTY

Steve MacKay

Associate in Applied Science: 118 Credits

GENERAL EDUCATION REQUIREMENTS

			CREDITS
100+	Level	Human Relations	5
100+	Level	Communications	5
100+	Level	Mathematics	5

REQUIRED COURSEWORK

SHME	101	Introduction to Sheet Metal Technology	3
SHME	102	Metalworking Machines Technology	4
SHME	103	Fittings Fabrication I	7
SHME	104	Principles of Health and Safety	5
SHME	105	Materials Technology	3
SHME	106	Hand Tools and Equipment	4
SHME	107	Applied Math	5
SHME	108	Introduction to Drafting	2
SHME	109	Drafting Techniques	5
SHME	110	Layout Math	3
SHME	111	Technology of Seams and Locks	3
SHME	112	Fittings Fabrication II	8
SHME	212	Introduction to Architectural Sheet Metal	4
SHME	213	Introduction to Blueprint Reading	4
SHME	203	Blueprint Reading Applications	5
SHME	214	Layout Drafting II	4
SHME	215	Layout Drafting III	4
SHME	218	Complex Components Fabrication	4
SHME	217	Energy Codes	2
SHME	218	Duct Design and Air Balancing - Basics	4
SHME	219	Duct Design and Air Balancing - Advanced	4
SHME	210	Solar Heating	2
SHME	221	Commercial Projects	5
WBAS	101	Welding Basics	8

Certificate of Competency: 118 Credits

SHEET METAL TECHNOLOGY

GENERAL EDUCATION REQUIREMENTS

			CREDITS
90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK

SHME	101	Introduction to Sheet Metal Technology	3
SHME	102	Metalworking Machines Technology	4
SHME	103	Fittings Fabrication I	7
SHME	104	Principles of Health and Safety	5
SHME	105	Materials Technology	3
SHME	106	Hand Tools and Equipment	4
SHME	107	Applied Math	5
SHME	108	Introduction to Drafting	2
SHME	109	Drafting Techniques	5
SHME	110	Layout Math	3
SHME	111	Technology of Seams and Locks	3
SHME	112	Fittings Fabrication II	8
SHME	212	Introduction to Architectural Sheet Metal	4
SHME	202	Introduction to Blueprint Reading	3
SHME	203	Blueprint Reading Applications	5
SHME	214	Layout Drafting II	4
SHME	215	Layout Drafting III	4
SHME	206	Complex Components Fabrication	5
SHME	217	Energy Codes	2
SHME	218	Duct Design and Air Balancing - Basics	4
SHME	219	Duct Design and Air Balancing - Advanced	4
SHME	210	Solar Heating	2
SHME	221	Commercial Projects	5
WBAS	101	Welding Basics	8

Sheet Metal Technology (continued)

Certificate of Competency: 94 Credits

SHEET METAL TECHNICIAN

GENERAL EDUCATION REQUIREMENTS

90+	Level	Human Relations	5
90+	Level	Communications	5
90+	Level	Mathematics	5

REQUIRED COURSEWORK

SHME	101	Introduction to Sheet Metal Technology	3
SHME	102	Metalworking Machines Technology	4
SHME	103	Fittings Fabrication I	7
SHME	104	Principles of Health and Safety	5
SHME	105	Materials Technology	3
SHME	106	Hand Tools and Equipment	4
SHME	107	Applied Math	5
SHME	108	Introduction to Drafting	2
SHME	109	Drafting Techniques	5
SHME	111	Technology of Seams and Locks	3
SHME	112	Fittings Fabrication II	8
SHME	202	Introduction to Blueprint Reading	3
SHME	203	Blueprint Reading Applications	5
SHME	204	Layout Drafting II	3
SHME	205	Layout Drafting III	3
SHME	207	Energy Codes	3
SHME	218	Duct Design and Air Balancing - Basics	4
WBAS	101	Welding Basics	8

Certificate of Training: 42 Credits

SHEET METAL PRODUCTION SUPPORT

REQUIRED COURSEWORK

SHME	102	Metalworking Machines Technology	4
SHME	103	Fittings Fabrication I	7
SHME	105	Materials Technology	3
SHME	106	Hand Tools and Equipment	4
SHME	107	Applied Math	5
SHME	111	Technology of Seams and Locks	3
SHME	112	Fittings Fabrication II	8
WBAS	101	Welding Basics	8

Certificate of Training: 44 Credits

SHEET METAL RESIDENTIAL INSTALLATIONS

REQUIRED COURSEWORK

SHME	120	Introduction to Sheet Metal Technology	3
SHME	121	Principles of Health and Safety	2
SHME	122	Hand Tools and Equipment	3
SHME	123	Metalworking Machines Technology	2
SHME	124	Fittings Fabrication I	4
SHME	125	Applied Math	3
SHME	126	Technology of Seams and Locks	2
SHME	127	Prefabricated Components	2
SHME	128	Material Handling Technology	2
SHME	129	Wood Working Tools	1
SHME	130	Carpentry Installation	3
SHME	131	Air Properties Technology	1
SHME	132	Duct installation	3
SHME	133	Residential Venting Technology	2
SHME	134	Unit Operations	2
SHME	135	Code Principles	2
SHME	136	Gas Piping Technology	2
SHME	137	Duct Design Technology	3
SHME	138	Preventive Maintenance	2

Software Development

www.bates.ctc.edu/SoftwareDevelopment

Instruction in the Software Development program includes designing, coding, and implementing software applications in a variety of programming languages: Unix, SQL, Java, C Sharp, C++. In addition, students build skills in problem-solving, attention to detail, communication and teamwork.

FACULTY

Dan Achman, Judith Graham

Associate in Applied Science - Transfer: 110 Credits

GENERAL EDUCATION REQUIREMENTS

	CREDITS
MATH& 146 Introduction to Stats	5
MATH& 141 Precalculus I	5
ENGL& 101 College Composition	5
Social Sciences/Communications Studies:	5
SOC& 101 Introduction to Sociology, or	
CMST& 210 Interpersonal Communications, or	
PSYC& 100 General Psychology	
Humanities	5
ART& 100 Art Appreciation, or	
HIST 101 History of Science and Technology, or	
ASL& 101 American Sign Language I	

REQUIRED COURSEWORK

CS& 141 Computer Science I - JAVA	5
DATA 101 Data Modeling\Relational Database Design	5
DATA 102 SQL I	5
SOFT 101 Computer Concepts	5
SOFT 102 Programming Fundamentals	5
SOFT 103 Operating Systems	5
SOFT 121 C-Sharp I	5
SOFT 122 C-Sharp II	5
SOFT 132 C++	5
SOFT 142 Programming in JAVA II	5
SOFT 204 Open Source Programming	5
SOFT 207 Dynamic Web Pages	5
SOFT 208 Principles of Systems Analysis and Design	5
SOFT 209 Emerging Technologies	5
SOFT 210 Mobile Device Programming	5
WEB 101 Microsoft Office Applications	5
WEB 102 HTML, XHTML and CSS	5
SOFT 290 Capstone Project	5

Associate in Applied Science: 110 Credits

GENERAL EDUCATION REQUIREMENTS

	CREDITS
Human Relations:	5
SOC& 101 Introduction to Sociology, or	
CMST& 210 Interpersonal Communications, or	
PSYC& 100 General Psychology	
Communications	5
ENGL& 101 College Composition	
Computations	10
MATH& 146 Introduction to Stats, and	
MATH& 141 Precalculus I	

REQUIRED COURSEWORK

CS& 141 Computer Science I - JAVA	5
DATA 101 Data Modeling\Relational Database Design	5
DATA 102 SQL I	5
SOFT 101 Computer Concepts	5
SOFT 102 Programming Fundamentals	5
SOFT 103 Operating Systems	5
SOFT 121 C-Sharp I	5
SOFT 122 C-Sharp II	5
SOFT 132 C++	5

REQUIRED COURSEWORK

	CREDITS
SOFT 142 Programming in JAVA II	5
SOFT 204 Open Source Programming	5
SOFT 207 Dynamic Web Pages	5
SOFT 208 Principles of Systems Analysis and Design	5
SOFT 209 Emerging Technologies	5
SOFT 210 Mobile Device Programming	5
WEB 101 Microsoft Office Applications	5
WEB 102 HTML, XHTML and CSS	5
SOFT 290 Capstone Project	5

Certificate of Competency: 60-65 Credits

BUSINESS APPLICATION DEVELOPMENTS

GENERAL EDUCATION REQUIREMENTS

	CREDITS
90+ Level Human Relations	5
90+ Level Communications	5
90+ Level Mathematics	5

REQUIRED COURSEWORK

CS& 141 Computer Science I JAVA	5
DATA 101 Data Modeling\Relational Database Design	5
DATA 102 SQL I	5
DATA 105 Principles of System Analysis and Design	5
SOFT 101 Computer Concepts and Technologies	5
SOFT 102 Programming Fundamentals	5
WEB 101 Microsoft Office Applications	5
SOFT 290 Capstone Project	5

PROGRAMMING LANGUAGE

STUDENTS MUST CHOOSE ONE OF THE FOLLOWING OPTIONS:

OPTION A

SOFT 121 C-SHARP I	5
SOFT 122 C-SHARP II	5

OPTION B

SOFT 132 C++	5
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OPTION C

SOFT 142 PROGRAMMING IN JAVA II	5
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Web Design and Development

www.bates.ctc.edu/WebDeveloper

Instruction in this program combines a unique blend of design and development technologies using a hands-on approach. Students learn to use industry software and development tools to create, implement and maintain static and dynamic web sites. A web developer is responsible for the site design and functionality that make surfing the Internet fun and easy. Employment opportunities include positions as web designers, specialists, technicians, and developers.

FACULTY

Ingrid Smith

Associate in Applied Science-Transfer: 105 Credits

GENERAL EDUCATION REQUIREMENTS

	CREDITS
MATH&146 Introduction to Stats	5
MATH&141 Precalculus I	5
ENGL&101 College Composition	5
Social Sciences/Communications Studies:	5
SOC& 101 Introduction to Sociology, or	
CMST& 210 Interpersonal Communications, or	
PSYC& 100 General Psychology	
Humanities or Natural Science	5
ART& 100 Art Appreciation, or	
HIST 101 History of Science and Technology, or	
ASL& 101 American Sign Language I, or	
CHEM& 110 Chemical Concepts, or	
CHEM&121 Intro to Chemistry	

REQUIRED COURSEWORK

WEB 102 Web Development I	5
WEB 201 Internet Technologies	5
WEB 202 Front-End Development Application	5
WEB 203 Web Graphics I	5
WEB 204 Web Motion Graphics	5
WEB 205 Introduction to Graphic Design	5
WEB 206 Web Development II	5
WEB 207 Web Interface Design	5
WEB 208 Web Graphics II	5
WEB 209 Content Management Systems I	5
WEB 210 Content Management Systems II	5
WEB 211 Introduction to Social Media and Analytics	5
WEB 212 Web Development III	5
WEB 213 Web Development IV	5
WEB 214 Professional Industry Practices	5
WEB 290 Capstone Project	5

Associate in Applied Science: 95 Credits

GENERAL EDUCATION REQUIREMENTS

	CREDITS
100+ Level Human Relations	5
100+ Level Communications	5
100+ Level Mathematics	5

REQUIRED COURSEWORK

	CREDITS
WEB 102 Web Development I	5
WEB 201 Internet Technologies	5
WEB 202 Front-End Development Application	5
WEB 203 Web Graphics I	5
WEB 204 Web Motion Graphics	5
WEB 205 Introduction to Graphic Design	5
WEB 206 Web Development II	5
WEB 207 Web Interface Design	5
WEB 208 Web Graphics II	5
WEB 209 Content Management Systems I	5
WEB 210 Content Management Systems II	5
WEB 211 Introduction to Social Media and Analytics	5
WEB 212 Web Development III	5
WEB 213 Web Development IV	5
WEB 214 Professional Industry Practices	5
WEB 290 Capstone Project	5

Certificate of Competency: 75 Credits

FRONT-END WEB DESIGN

GENERAL EDUCATION REQUIREMENTS

	CREDITS
90+ Level Human Relations	5
90+ Level Communications	5
90+ Level Mathematics	5

REQUIRED COURSEWORK

WEB 102 Web Development I	5
WEB 201 Internet Technologies	5
WEB 202 Front-End Development Application	5
WEB 203 Web Graphics I	5
WEB 205 Introduction to Graphic Design	5
WEB 206 Web Development II	5
WEB 207 Web Interface Design	5
WEB 208 Web Graphics II	5
WEB 209 Content Management Systems I	5
WEB 210 Content Management Systems II	5
WEB 211 Introduction to Social Media and Analytics	5
WEB 212 Web Development III	5

Welding

www.bates.ctc.edu/Welding

Students prepare for apprenticeship employment as welders, filling positions in industries including shipbuilding, industrial construction, energy fields, sheet metal, and auto body. Extensive practical training in all aspects of welding is included as students work in the shop on a variety of welding projects. Upon completion of the welding competencies, students are encouraged to take the certification tests for the American Welding Society and the Washington Association of Building Officials. This program also provides extended learning for persons previously or currently employed in these professions. Note: Through an Opportunity Grant, special tuition and book funding is available to assist low-income adult students entering this program.

FACULTY

Rick Huston, William Knox, Pat Normandeau, Linc Sprinkel

Associate in Applied Science: 120 Credits

GENERAL EDUCATION REQUIREMENTS

	CREDITS
100+ Level Human Relations	5
100+ Level Communications	5
100+ Level Mathematics	5

REQUIRED COURSEWORK

	CREDITS
WELD 101 Safety Principles	2
WELD 102 Fabrication Plans	4
WELD 103 Pre and Post-welding Activities	2
WELD 104 Oxyacetylene Cutting	3
WELD 105 Introduction to Shielded Metal Arc Welding	5
WELD 107 Brazing and Soldering	1
WELD 108 Full Penetration Welds – Flat/Horizontal	5
WELD 109 Full Penetration Welds – Vertical/Overhead	5
WELD 110 Full Penetration Welds – Open Root	5
WELD 111 Introduction to Gas Metal Arc Welding	3
WELD 112 Gas Metal Arc Welding – Full Penetration	4
WELD 113 Gas Metal Arc Welding – Aluminum	5
WELD 114 Introduction to Flux Core Arc Welding	4
WELD 115 Flux Core Arc Welding – Full Penetration	5
WELD 116 Carbon Arc Cutting	5
WELD 117 Welding Symbols	5
WELD 201 Introduction to Gas Tungsten Arc Welding	5
WELD 202 Gas Tungsten Arc Welding – Full Penetration	5
WELD 203 Gas Tungsten Arc Welding – Aluminum	5
WELD 204 Welding Certification Testing – SMAW	5
WELD 205 Advanced Welding Applications – Pipe/SMAW	5
WELD 206 Advanced Welding Applications – Pipe/GTAW	5
WELD 207 Welding Certification Testing – Flux Core	5
WELD 208 Non-Destructive Testing	1
WELD 209 Forklift Training	1
WELD 210 Advanced Welding Applications - Project	5

Certificate of Competency: 103 Credits

WELDER

GENERAL EDUCATION REQUIREMENTS		CREDITS
90+ Level Human Relations		5
90+ Level Communications		5
90+ Level Mathematics		5

REQUIRED COURSEWORK

	CREDITS
WELD 101 Safety Principles	2
WELD 102 Fabrication Plans	4
WELD 103 Pre and Post-welding Activities	2
WELD 104 Oxyacetylene Cutting	3
WELD 105 Introduction to Shielded Metal Arc Welding	5
WELD 107 Brazing and Soldering	1
WELD 108 Full Penetration Welds – Flat/Horizontal	5
WELD 109 Full Penetration Welds – Vertical/Overhead	5
WELD 110 Full Penetration Welds – Open Root	5
WELD 111 Introduction to Gas Metal Arc Welding	3
WELD 112 Gas Metal Arc Welding – Full Penetration	4
WELD 113 Gas Metal Arc Welding – Aluminum	5
WELD 114 Introduction to Flux Core Arc Welding	4
WELD 115 Flux Core Arc Welding – Full Penetration	5
WELD 116 Carbon Arc Cutting	5
WELD 117 Welding Symbols	5
WELD 201 Introduction to Gas Tungsten Arc Welding	5
WELD 202 Gas Tungsten Arc Welding – Full Penetration	5
WELD 203 Gas Tungsten Arc Welding – Aluminum	5
WELD 204 Welding Certification Testing – SMAW	5
WELD 205 Advanced Welding Applications – Pipe/SMAW	5

Courses may be substituted with a work-based learning component with instructor approval.

Certificate of Training: 32 Credits

WELDER-LEVEL I

REQUIRED COURSEWORK		CREDITS
WELD 101 Safety Principles		2
WELD 102 Fabrication Plans		4
WELD 103 Pre and Post-welding Activities		2
WELD 104 Oxyacetylene Cutting		3
WELD 105 Introduction to Shielded Metal Arc Welding		5
WELD 107 Brazing and Soldering		1
WELD 108 Full Penetration Welds – Flat/Horizontal		5
WELD 109 Full Penetration Welds – Vertical/Overhead		5
WELD 117 Welding Symbols		5

Courses may be substituted with a work-based learning component with instructor approval.

Certificate of Training: 31 Credits

WELDER-LEVEL II

REQUIRED COURSEWORK		CREDITS
WELD 110 Full Penetration Welds – Open Root		5
WELD 111 Introduction to Gas Metal Arc Welding		3
WELD 112 Gas Metal Arc Welding – Full Penetration		4
WELD 113 Gas Metal Arc Welding – Aluminum		5
WELD 114 Introduction to Flux Core Arc Welding		4
WELD 115 Flux Core Arc Welding – Full Penetration		5
WELD 116 Carbon Arc Cutting		5

Courses may be substituted with a work-based learning component with instructor approval.