

ACADEMIC POLICY AND PLANNING COMMITTEE
CURRICULUM REPORT

March 18, 2014

Sofía Ramírez-Gelpí, Chairperson

Judith Dal Porto, Applied Social Sciences ✓

Carmen Montañez-Rodríguez, Business ✓

Lydia Maxwell, Counseling ✓

Jennifer Jozwiak, English ✓

Michael Dempsey, Fine Arts

Sheri Bates, Kinesiology, Recreation and Athletics. ✓

Larry Manalo, Health Sciences ✓

Robert Mabry, Industrial Technology ✓

Melinda Nishimori, Languages & Communication ✓

Sandra Bierdzinski, ✓
Learning Resources, Economic Development, Learning Assistance Program, and Health Services

Robert Lennihan, Life and Physical Sciences ✓

Derek Mitchem, Mathematical Sciences ✓

Mike Messina, Public Safety ✓

Thomas Vandermolen, Social & Behavioral Sciences ✓

Nicholas Presher, ASBG Student Representative ✓

Janet Hooghuis, Admissions & Records Representative (ex officio) ✓

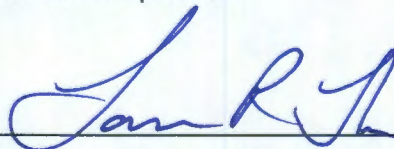
David DeGroot, Articulation Officer (ex officio) ✓

Non-Credit Education (vacant)

Luis Sanchez, Vice President, Academic Affairs (ex officio)

Rebecca Andres, Curriculum Specialist

Adopted by Board of Trustees:



Date
President, Board of Trustees
Allan Hancock Joint Community
College District

NEW CREDIT COURSES/PROGRAMS RECOMMENDED FOR ADOPTION

NEW: Courses (effective)

Course Prefix	Course Title	Units
AB 350	Skills U.S.A. Competition Preparation	3
ARCH 350	Skills U.S.A. Competition Preparation	3
AT /ET/ MT 117	Print Reading & Interpretation	3
AT/AB/ET/ MT/WLDT 300	Shop Math and Measurement	3
AT 350	Skills U.S.A. Competition Preparation	3
EL 350	Skills U.S.A. Competition Preparation	3
ET 350	Skills U.S.A. Competition Preparation	3
FT 120	Fire Command 2A: Command Tactics at Major Fires	2.5
FT 131	Fire Management 2A: Organizational Development and Human Relations	2.5
MT 112	CNC Principles and Practices 3	4
MT 117	Print Reading and Interpretation	3
MT 118	Understanding and Measuring GD&T	3
MT 350	Skills U.S.A. Competition Preparation	3
PSY 105	Research Methods in Psychology	3
WLDT 350	Skills U.S.A. Competition Preparation	3

NEW: Programs (effective pending state approval)

<u>Program Title</u>	<u>Program Units</u>
Associate in Arts in Psychology for Transfer	20

MODIFICATIONS TO COURSES/PROGRAMS RECOMMENDED FOR ADOPTION

Major modifications to course content, course outline of record, or program listings are included in this section. Modifications include but are not limited to course/program units, hours, prerequisites, co-requisites, advisories, and enrollment limitations.

MODIFCATIONS: Courses (effective)

<u>Course Prefix</u>	<u>Course Title</u>	<u>Units</u>
ESL	The ESL courses are being updated to address TBA scheduling.	

ESL 532	Writing Skills 1	4
ESL 535	Writing Skills 2	4
ESL 538	Writing Skills 3	4
ESL 541	Writing Skills 4	4
ESL 550	Grammar 1	3
ESL 551	Grammar 2	3
ESL 552	Grammar 3	3
ECS 115	Caring for Infants and Toddlers	3
ECS 310	Art for Young Children	0.5
MT 109	Survey of Machining and Manufacturing	4
MT 110	CNC Principles and Practices 1	4
PHTO	The photography courses are being updated due to the courses no longer being repeatable.	
PHTO 120	Materials and Processes	3
PHTO 130	Advanced Black and White Photography	3
PHTO 140	Intro to Color Photography	3
PHTO 380	Black and White Photo Lab 1	0.5
PHTO 381	Black and White Photo Lab 2	1
PHTO 382	Color Photo Lab 1	0.5
PHTO 383	Color Photo Lab 2	1
PHTO 384	Digital Photo Lab 1	0.5
PHTO 385	Digital Photo Lab 2	1
PSY	The psychology courses are being updated as part of course/program review.	
PSY 101	General Psychology	3
PSY 112	Human Sexuality	3
PSY 113	Theories of Personality	3
PSY 117	Child Psychology	3
PSY 118	Human Development Across the Lifespan	3
PSY 119	Abnormal Psychology	3
PSY 120	Cultural Psychology	3
PSY 121	Social Psychology	3

MODIFICATIONS: Programs (effective 2014-2015)

<u>Program Award</u>	<u>Program Title</u>	<u>Program Units</u>
Architectural Drafting		
AS/Cert	Architecture: Architectural Drafting ARCH 350 is being added to the program's selected units.	40
Auto Body Tech	Program modifications in the Auto Body Technology department are being made to include a new course. Program units, prefixes, and/or titles are	

	being updated per course modification proposals.	
AS/Cert	Auto Body: Auto Body Technology AB 350 is being added to the program's selected units.	23
Certificate	Auto Body Metal Course listings are being updated per course modification proposal; program units will increase from 18 to 19 units.	18
Auto Technology	Program modifications in the Auto Technology department are being made to include a new course. Program units, prefixes, and/or titles are being updated per course modification proposals.	
AS	Automotive Technology: Automotive Chassis Adding AT 100 to core units; core units decreasing from 27 to 22 units; addition of selected units to program - 8 units minimum; program units increasing from 27 to 30 units.	30
AS	Automotive Technology: Auto Service Management Adding AT 100 to core units; addition of selected units to program - 12 unit minimum; program units are increasing from 24 to 30 units; core units decreasing from 24 to 18 units	30
AS	Automotive Technology: Auto Tune-Up Diagnostic Procedures Adding AT 100 to core units; addition of selected units to program - 11 unit minimum; program units are increasing from 23 to 30 units; core units decreasing from 23 to 19 units	30
AS	Automotive Technology: Auto Engine Rebuilding Removing AT 341 from core and adding AT 336 to core; addition of selected units - 12 units minimum; total program units increasing from 19 to 31 units	31
Certificate	Automotive Technology General Technician - Tune-Up Emission Control Specialist Adding AT 100 to core units; core units decreasing from 33 to 24 units; removing AT 313, 341, and 343 form core; addition of selected units to program - 6 units minimum; program total decreasing from 33 to 30 units; the program title is being modified from Automotive Technology High Tech General Mechanic – Tune-Up Emission Control Specialist	30
Certificate	Automotive Technology General Technician Engine, Power Trains Specialist The program title is being changed from Automotive Technology: High-Tech General Mechanic – Engine, Power Trains Specialist; AT 100 is being added to core units; core units decrease from 35 to 24 units; addition of selected units section - 6 units minimum	30
Electronics Tech		
AS /Cert	Electronics Technology: Electronics Technology w/emphasis in Network Maintenance and Digital Technologies	29
Engineering Tech		
Certificate	Engineering Technology: Engineering Drafting A new course is being introduced to the program's selected units: ET 350 ET 330 is now ET 117	15
Environmental Health and Safety	The public safety department is proposing a program title change from Environmental Technology to more accurately reflect program content. The following programs will be renamed as follows:	
AS/Cert	Environmental Technology will be <u>Environmental Health & Safety</u>	30
Certificate	Environmental Technology: HAZWOPER Refresher 8-Hour will be	16

Certificate	<u>Environmental Health and Safety: HAZWOPER Refresher 8-Hour</u> Environmental Technology: Health & Safety Technician will be <u>Environmental Health and Safety: Health & Safety Technician</u>	1
Certificate	Environmental Technology: Hazardous Materials – General Site Worker will be <u>Environmental Health and Safety: Hazardous Materials – General Site Worker</u>	0.5

Welding Technology

AS /Cert	Welding Technology New recommended electives: WLDT 305, WLDT 350; program units are unchanged; update course titles and prefixes per course modification proposals	31
Certificate	Welding Technology: Metal Fabrication Updated course prefixes and titles per course modification proposals	20
Certificate	Welding Technology: Pipe Welding Updated course prefixes and titles per course modification proposals	19

REQUEST FOR DISTANCE LEARNING (effective summer 2014)

<u>Course Prefix</u>	<u>Course Title</u>	<u>Units</u>
MT 116	Mastercam Online	3
MT 301	Introduction to Safety	3
MT 302	Quality & Process Improvement	3
MT 303	Manufacturing Processes and Production	3
MT 304	Maintenance Awareness	2

CONSENT AGENDA ITEMS (effective fall 2014)

<u>Change</u>	<u>Course Prefix</u>	<u>Course Title</u>
Textbook	SPAN 101	Elementary Spanish I (5 units)
Textbook	SPAN 102	Elementary Spanish II (5 units)
Textbook	ASTR 100	Elementary Astronomy (3 units)

GENERAL EDUCATION (effective catalog year 2014 and pending approval)

AHC GE – Area 1	AG 102
AHC GE – Area 2A	PSY 101, 112, 113, 117, 118, 119, 120, 121, and SOC102
AHC GE – Area 5	PSY 118 and 120
CSU GE – D9	PSY 101, 112, 113, 117, 118, 119, 120, 121
CSU GE – DO	SOC 102
IGETC – 4I	PSY 101, 113, 117, 118, 119, 120, 121
IGETC – 4J	PSY 112, SOC 102
MCGS	PSY 120, SOC 120
Health & Wellness	PEIA 185

NEW NONCREDIT COURSES (effective 2014/15 catalog)

BASK 7006A	GED Test Preparation: Math Reasoning	90-102 hrs.
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BASK 7007A GED Test Preparation: Language Arts

90-102
hrs.

NONCREDIT COURSE MODIFICATIONS

BASK 7005A GED Test Preparation

The course is being modified in anticipation of the 2014 GED materials.

90-102
hrs.

When the college moved to the Banner system, Community Education changed all of the noncredit prefixes to align with the 10 noncredit categories. These corrections will be submitted to the Chancellor's Office so that the prefixes listed in the Banner catalog match the Chancellor's Office inventory.

CURRENT		PROPOSED	
Current CB01: Department #	Current CB02: Course Title	Proposed CBO1: Department #	PROPOSED CBO2: Course Title
9733F2SPAN	SPAN 720	NESL 7020A	Spanish Literacy
9732F2ENGLI	ENG 702	BASK 7002A	Community Based Eng. Tutoring
9726J2INDISC	INDISC 700	BASK 7003A	Reading, Writing, and Math
9735B2INDISC	INDISC 750	BASK 7005A	Preparing for the GED Tests
9693J2PERSO	PD 711	BASK 7008A	Success in College Lab
9469B2MATH	MATH 711	BASK 7011A	Basic Math
Math 714	Mathematics Lab	BASK 7014	Mathematics Lab
9239J4PERSO	PD 741	CITZ 7000A	Preparation for Citizenship
9021J5PERSO	PD 761	DISA 7001A	Independent Living Skills
9100D9PHYSE	PE 742	HEAL 7002A	Body Conditioning
9102D9PHYSE	PE 771	HEAL 7004B	Beginning Senior Exercise
9103D9PHYSE	PE 772	HEAL 7005B	Intermediate Senior Exercise
PE 792	Balance and Mobility for Older Adults	HEAL 7021	Balance and Mobility
9468D9HEALE	H ED 781	HEAL 7101	Mature Driver Improvement
9734D9PSYCH	PSYCH 770	HEAL 7104	Stress Management
9790	Living with Food Allergies	HEAL 7106	Living with Food Allergies
9755	Meals for Home Entertainment	HOEC 7004	Meals for Home Entertainment
9694F8HOME	HO EC 724	HOEC 7005	Healthy Meals in 30 Minutes
9183I8HOME	HO EC 723	HOEC 7023	Vegetarian Cooking
9088I8HOME	HO EC 724	HOEC 7024	Microwave Cooking
9783	Dealing with Anger (Family)	HOEC 7301	Dealing With Anger
9658F3ENGLI	ENGLI 721	NESL 7001T	Intro to English A1
9659F3ENGLI	ENGLI 722	NESL 7002T	Intro to English A2
9660F3ENGLI	ENGLI 731	NESL 7003T	Intro to English B1
9661F3ENGLI	ENGLI 732	NESL 7004T	Intro to English B2
9662F3ENGLI	ENGLI 741	NESL 7005T	Intro to English C1
9663F3ENGLI	ENGLI 742	NESL 7006T	Intro to English C2
9664F3ENGLI	ENGLI 751	NESL 7007T	Intro to English D1

CURRENT		PROPOSED	
9665F3ENGLI	ENGLI 752	NESL 7008T	Intro to English D2
9654F3ENGLI	ENGLI 760	NESL 7060T	ESL Instructional Lab
9787	Topics for Older Adults: Natural History of the Central Coast	OLDR 7000	Natural History: Central Coast
9786	Topics for Older Adults	OLDR 7001A	Topics for Older Adults
Film 700	Film Appreciation for Older Adults	OLDR 7005	Film Appreciation
9206C7ART	ART 759	OLDR 7101A	Crafts for Seniors
9109C7ART	ART 755	OLDR 7206A	Tole Painting
OLDR 7209A	Art: Botanical Illustration	OLDR 7209A	Botanical Illustration
9225C7ART	ART 731	OLDR 7211A	The Joy of Drawing
9718C7ART	ART 732	OLDR 7212A	Watercolor Painting
9110C7ART	ART 733	OLDR 7213A	Painting in Oils and Acrylics
9785	Digital Photography for Older Adults	OLDR 7300B	Digital Photography, Level 1
OLDR 7301B	Digital Camera Basics Level 2	OLDR 7301B	Digital Photography, Level 2
9670I1EARLY	ECS 704	PARN 7002A	Topics of Parenting
9743E6IT	AJ 720	VOCE 7004	Driving and Force Simulation
9742G6DENTA	DA 701	VOCE 7019	RDA State Board Exam Prep
9736J6PD	PD 708	VOCE 7031A	Career Lab
9006E6WELDI	WLD T 701	VOCE 7034A	Welding Lab
COM SCI 703	Computers & You Level 2	VOCE 7101A	Computers and You: Level 2
COM SCI 704	Computers & You Level 3	VOCE 7102A	Computers and You: Level 3
VOCE 7105A	Computer Applications (Word Processing)	VOCE 7105A	Introduction to Microsoft Word
VOCE 7107A	Computer Apps: Spreadsheet	VOCE 7107A	Introduction to Excel
9002A6OFFIC	OA 702	VOCE 7108A	Business Skills Lab
VOCE 7401	Floral Design - Beyond the Basics	VOCE 7401B	Floral Design: Beyond Basics
VOCE 7402	Floral Design-Beyond the Basics II	VOCE 7402B	Floral Design: Beyond Basics II
VOCE 7404	Floral Design for Special Events	VOCE 7404B	Floral Design: Special Events
9796	Introduction to Income Tax Preparation	VOCE 7502	Intro to Tax Preparation
9769G6LIFEP	AGBUS 731	VOCE 7600B	Roses: Insects and Diseases
9770G6LIFEP	AGBUS 731	VOCE 7602B	Pruning Techniques
VOCE 7608	Plant Selection for Residential Landscaping	VOCE 7608B	Residential Plant Selection
VOCE 7612B	Gardening: Specialty Plants	VOCE 7612B	Gardening w/ Specialty Plants
VOCE 7618	Easy Plant and Lawn Care	VOCE 7618B	Easy Plant and Lawn Care
VOCE 7620	Landscape Design	VOCE 7620B	Landscape Design
9075A0PERSO	PD 768	WKPR 7000	Planning Your Next Job/Career
9076A0PERSO	PD 769	WKPR 7001	Planning a Job Search
9082A0PERSO	PD 770	WKPR 7002	Impression Management
9682F9HOME	HO EC 720	HOEC 7303	Heart Disease Prevention
VOCE 7405	Floral: Seasonal Celebrations	VOCE 7405B	Floral Seasonal Celebrations

ARCHITECTURAL DRAFTING (A.S. & Certificate of Accomplishment)

An associate in science degree in architectural drafting prepares students to articulate into a professional program at a four-year institution, which offers a baccalaureate degree or equips students for an entry-level position in the building industry such as drafter, inspector or materials technician. The graduate of the AS or certificate program in architectural drafting will:

- Develop manual and computer-aided graphic communication skills.
- Produce a complete set of architectural plans that may be submitted for plan check approval.
- Develop familiarity with components, materials, types, and methods of building construction; terminology as applied to codes, foundations, concrete, light frame wood, heavy timber, soils, and the structural elements.
- Develop the ability to use appropriate technologies to locate, access, select and manage the information.
- Become familiar with the latest building code requirements and be able to make job site judgments based on the code.
- Participate in a positive co-operative group learning environment.

A major of 40 units is required for the associate in science degree. Courses marked with an asterisk (*) are required for the certificate.

Required core courses (33 units):

COURSE NUMBER	TITLE	UNITS
ARCH 111*	Architectural Graphics	3
ARCH 112*	Architectural Delineation	3
ARCH 121*	Architectural Drawing 1	4
ARCH 122*	Architectural Drawing 2	4
ARCH 131*	Materials of Construction 1	3
ARCH 151	Architectural Design Studio 1	5
ARCH 152	Architectural Design Studio 2	5
ARCH/ET 160	Digital Tools in Architecture	3
ART 110	Design 1	3

Plus a minimum of 7 units selected from the following:

ARCH 320	Uniform Building Code	3
ARCH 350	Skills USA Competition Prep	3
ART 103	Art History Survey - Ancient to Medieval	3
ART 104	Art History Survey - Renaissance to Modern	3
ART 105	Art History Survey -	

	Art of Mexico	3
ART 113	Three Dimensional Design	3
ART 127	Painting in Watercolor 1	3
ART 128	Painting in Watercolor 2	3
ENGR 152	Statics	3
ENGR 161	Materials Science	3
ENGR 162	Materials Science Lab	1
GEOL 100	Physical Geology	4

AUTO BODY TECHNOLOGY (A.S.)

The auto body curriculum is designed to prepare students for entry level career opportunities in the auto collision industry involving auto body metal repair, frame measurement and alignment, welding, automotive electrical and refinishing techniques found in the collision industry. Emphasis is also given to safety, ethics and work habits needed to succeed in the auto collision trade. The graduate of the AS program in auto body technology will:

- Develop, practice and apply good work and safety habits while in the auto body workplace.
- Develop work skills involving plastic filler application, metal finishing, frame alignment, MIG welding and structural repair.
- Apply vehicle service information skills to evaluate major damage and implement repair procedures.
- Develop the ability to refinish vehicles using modern urethane paints and primers.
- Develop occupational skills including team work, work habits, ethics and communication skills.
- Identify estimating processes used in the collision industry.

A major of 23 units is required for the associate in science degree.

Required core courses (17 units):

COURSE NUMBER	TITLE	UNITS
AB 351	Auto Body - Metal	3
AB 353	Auto Body - Repair	3
AB 356	Automotive Painting Techniques	3
AB 358	Automotive Refinishing	3
AB 360	Collision and Painting Repairs	5

Plus a minimum of 6 units from the following

AB 300	Shop Math and Measurement	3
AT 303	Automotive Electricity	5
AB 350	Skills USA Competition Prep	3

WLDT 106 Beginning Welding 3

AUTO BODY METAL (Certificate of Achievement)

The graduate of the certificate program in auto body metal will:

- Develop, practice and apply good work and safety habits while in the auto body workplace.
- Identify commonly used auto collision repair tools and equipment.
- Analyze types of sheet metal damage and the direction of impact to perform needed repair procedures involving frame and structural damage.
- Recognize and properly use paint equipment and materials in the automotive painting industry.
- Develop occupational skills including team work, work habits, ethics and communication skills.

A total of 19 units is required for the certificate.

Required core courses (19 units):

COURSE NUMBER	TITLE	UNITS
AB 351	Auto Body – Metal	3
AB 353	Auto Body – Repair	3
AB 356	Automotive Painting Techniques	3
AB 360	Collision and Painting Repair	5
AT 303	Automotive Electricity	5

Automotive Technology: Automotive Chassis (A.S.)

Designed to prepare the student to enter the automotive service profession as a specialist in brake and front end work. The graduate of the AS program in automotive chassis will:

- Demonstrate an understanding of the science of the automotive drive train systems.
- Demonstrate the ability to use the latest techniques and tools used in servicing the automotive drive train.
- Demonstrate the ability to effectively communicate verbally and in writing with customers, co-workers and the employer.
- Demonstrate the ability to diagnose problems with the various systems of the automobile using systematic procedures and logical methods.

- Demonstrate the ability to identify what technical specifications are needed, where to find them and how to use them in the course of performing their duties.
- Demonstrate an understanding of the legal and ethical issues encountered in the automotive repair workplace and make responsible decisions.
- Demonstrate the required mechanical skills and the ability to use the trade tools at a level of proficiency that is expected in the profession.
- Demonstrate the use of the proper procedure for dealing with hazards encountered in the automotive repair work place.
- Demonstrate the ability to perform all of the NATEF tasks in each of the core courses in the option or certificate.

A total of 30 units in the major is required for the A.S. degree.

Required core courses (22 units):

COURSE NUMBER	TITLE	UNITS
AT 100	Automotive Fundamentals	4
AT 303	Automotive Electricity	5
AT 313	Automotive Brakes	4
AT 314	Suspension and Alignment	4
AT 323	Power Trains	5

Plus a Minimum of 8 units selected from the following:

AT 117	Print Reading and Interpretation	3
AT 133	Automotive Engine Rebuilding	5
AT 300	Shop Math and Measurement	3
AT 306	Automotive Air Conditioning System	4
AT 324	Automatic Transmissions	5
AT 334	Automotive Machining	5
AT 341	Fuel Injection/Turbocharging	5
AT 343	Automotive Tune-Up and Engine Analysis	5
AT 350	Skills USA Competition Prep	3
AT 389	Independent Projects in Automotive Technology	1-3
AT 399	Special Topics in Automotive Technology	.5-3

Automotive Technology: Auto Service Management (A.S.)

Designed to prepare the student to enter the automotive service profession in a position such as a service manager, service writer or parts manager. The graduate of the AS program in auto service management will:

- Demonstrate an understanding of the importance of customer satisfaction and the role it plays in the success of a business in the automotive service industry.
- Demonstrate an understanding of the various business models in the automotive service industry.
- Demonstrate the ability to effectively communicate verbally and in writing with customers, co-workers and the employer.
- Demonstrate the ability to diagnose problems with the various systems of the automobile using systematic procedures and logical methods.
- Demonstrate the ability to identify what technical specifications are needed, where to find them and how to use them in the course of performing their duties.
- Demonstrate an understanding of the legal and ethical issues encountered in the automotive repair workplace and make responsible decisions.
- Demonstrate the required mechanical skills and the ability to use the trade tools at a level of proficiency that is expected in the profession.
- Demonstrate the use of the proper procedure for dealing with hazards encountered in the automotive repair work place.
- Demonstrate the ability to perform all of the NATEF tasks in each of the core courses in the option or certificate.

A total of 30 units in the major is required for the A.S. degree.

Required core courses (18 units):

COURSE NUMBER	TITLE	UNITS
AT 100	Automotive Fundamentals	4
AT 133	Automotive Engine Rebuilding	5
AT 303	Automotive Electricity	5
AT 314	Suspension and Alignment	4

Plus a Minimum of 12 units selected from the following:

AT 117	Print Reading and Interpretation	3
AT 300	Shop Math and Measurement	3
AT 306	Automotive Air Conditioning System	4
AT 313	Automotive Brake	4
AT 323	Power Trains	5
AT 324	Automatic Transmissions	5
AT 334	Automotive Machining	5
AT 341	Fuel Injection/Turbocharging	5
AT 343	Automotive Tune-Up and Engine Analysis	5
AT 344	Automotive Emission Control	4
AT 350	Skills USA Competition Prep	3

AT 389	Independent Projects in Automotive Technology	1-3
AT 399	Special Topics in Automotive Technology	.5-3
BUS 104	Business Organization & Management	3
BUS 107	Human Relations in Business	3

Automotive Technology: Auto Tune-Up and Diagnostic Procedures (A.S.)

Designed to prepare the student to enter the automotive service profession as a tune-up and diagnostics specialist. The graduate of the AS program in auto tune-up and diagnostic procedures will:

- Demonstrate an understanding of the evolving technology in the automotive control systems and the impact the automobile has on our environment.
- Demonstrate the ability to quickly master new techniques and skills as required in the automotive tune-up and diagnostic specialty.
- Demonstrate the ability to effectively communicate verbally and in writing with customers, co-workers and the employer.
- Demonstrate the ability to diagnose problems with the various systems of the automobile using systematic procedures and logical methods.
- Demonstrate the ability to identify what technical specifications are needed, where to find them and how to use them in the course of performing their duties.
- Demonstrate an understanding of the legal and ethical issues encountered in the automotive repair workplace and make responsible decisions.
- Demonstrate the required mechanical skills and the ability to use the trade tools at a level of proficiency that is expected in the profession.
- Demonstrate the use of the proper procedure for dealing with hazards encountered in the automotive repair work place.
- Demonstrate the ability to perform all of the NATEF tasks in each of the core courses in the option or certificate.

A total of 30 units in the major is required for the A.S. degree.

Required core courses (19 units):

COURSE NUMBER	TITLE	UNITS
AT 100	Automotive Fundamentals	4

AT 303	Automotive Electricity	5
AT 341	Fuel Injection/Turbocharging	5
AT 343	Engine Performance Diagnosis	5

Plus a Minimum of 11 units selected from the following:

AT 117	Print Reading and Interpretation	3
AT 133	Automotive Engine Rebuilding	5
AT 300	Shop Math and Measurement	3
AT 306	Automotive Air Conditioning System	4
AT 323	Power Trains	5
AT 324	Automatic Transmissions	5
AT 334	Automotive Machining	5
AT 344	Emission Control/BAR CAC	4
AT 350	Skills USA Competition Prep	3
AT 389	Independent Projects in Automotive Technology	1-3
AT 399	Special Topics in Automotive Technology	.5-3

AUTOMOTIVE TECHNOLOGY: AUTO ENGINE REBUILDING (A.S.)

Designed to prepare the student to enter the automotive service profession as a specialist in engine rebuilding and machining. The graduate of the AS program in auto engine rebuilding will:

- Demonstrate an understanding of the science of the automotive engine.
- Demonstrate the ability to work with a high degree of precision and accuracy using all of the machine tools involved in rebuilding of the automotive engine.
- Demonstrate the ability to effectively communicate verbally and in writing with customers, co-workers and the employer.
- Demonstrate the ability to diagnose problems with the various systems of the automobile using systematic procedures and logical methods.
- Demonstrate the ability to identify what technical specifications are needed, where to find them and how to use them in the course of performing their duties.
- Demonstrate an understanding of the legal and ethical issues encountered in the automotive repair workplace and make responsible decisions.
- Demonstrate the required mechanical skills and the ability to use the trade tools at a level of proficiency that is expected in the profession.
- Demonstrate the use of the proper procedure for dealing with hazards encountered in the automotive repair work place.

- Demonstrate the ability to perform all of the NATEF tasks in each of the core courses in the option or certificate.

A total of 31 units in the major is required for the A.S. degree.

Required core courses (19 units):

COURSE NUMBER	TITLE	UNITS
AT 133	Automotive Engine Rebuilding	5
AT 334	Automotive Machining	5
AT 336	Advanced Automotive Machining	5
MT 109	Survey of Machining and Manufacturing	4

Plus a Minimum of 12 units selected from the following:

AT 100	Automotive Fundamentals	4
AT 117	Print Reading and Interpretation	3
AT 300	Shop Math and Measurement	3
AT 306	Automotive Air Conditioning System	4
AT 323	Power Trains	5
AT 324	Automatic Transmissions	5
AT 341	Fuel Injection/Turbocharging	5
AT 344	Automotive Emission Control	4
AT 350	Skills USA Competition Prep	3
AT 389	Independent Projects in Automotive Technology	1-3
AT 399	Special Topics in Automotive Technology	.5-3

Automotive Technology: General Technician - Tune-Up Emission Control Specialist (Certificate of Achievement)

Designed to prepare the student to enter the automotive service profession as a general repair technician with an emphasis on tune-up and emissions repair. The graduate of the certificate program in high-tech general mechanic: tune-up emission control specialist will:

- Demonstrate an understanding of the evolving technology in the automotive control systems.
- Demonstrate the ability to communicate effectively with customers, co-workers and the employer.
- Demonstrate the ability to diagnose problems with the various systems of the automobile using systematic procedures and logical methods.
- Demonstrate the ability to identify what technical specifications are needed, where to find them and how to use them in the course of performing their duties.

- Demonstrate the required mechanical skills and the ability to use the trade tools at a level of proficiency that is expected in the profession.
- Demonstrate the use of the proper procedure for dealing with hazards encountered in the automotive repair work place.
- Demonstrate the ability to perform all of the NATEF tasks in each of the core courses in the option or certificate.

A total of 30 units is required for the Certificate of Achievement.

Required core courses (24 units):

COURSE NUMBER	TITLE	UNITS
AT 100	Automotive Fundamentals	4
AT 133	Automotive Engine Rebuilding	5
AT 303	Automotive Electricity	5
AT 341	Fuel Injection/Turbocharging	5
AT 343	Engine Performance Diagnosis	5

Plus a Minimum of 6 units selected from the following:

AT 117	Print Reading and Interpretation	3
AT 300	Shop Math and Measurement	3
AT 306	Automotive Air Conditioning System	4
AT 323	Power Trains	5
AT 324	Automatic Transmissions	5
AT 334	Automotive Machining	5

Automotive Technology: General Technician - Engine, Power Trains Specialist (Certificate of Achievement)

Designed to prepare the student to enter the automotive service profession as a general repair technician with an emphasis on engine and drive train repair. The graduate of the certificate program in high-tech general mechanic: engine, power trains specialist will:

- Demonstrate an understanding of the automotive drive train systems.
- Demonstrate the ability to communicate effectively with customers, co-workers and the employer.
- Demonstrate the ability to diagnose problems with the various systems of the automobile using systematic procedures and logical methods.
- Demonstrate the ability to identify what technical specifications are needed, where to find them and how to use them in the course of performing their duties.

- Demonstrate the required mechanical skills and the ability to use the trade tools at a level of proficiency that is expected in the profession.
- Demonstrate the use of the proper procedure for dealing with hazards encountered in the automotive repair work place.
- Demonstrate the ability to perform all of the NATEF tasks in each of the core courses in the option or certificate.

A total of 30 units is required for the Certificate of Achievement.

Required core courses (24 units):

COURSE NUMBER	TITLE	UNITS
AT 100	Automotive Fundamentals	4
AT 133	Automotive Engine Rebuilding	5
AT 303	Automotive Electricity	5
AT 323	Power Trains	5
AT 324	Automatic Transmissions	5

Plus a Minimum of 6 units selected from the following:

AT 117	Print Reading and Interpretation	3
AT 300	Shop Math and Measurement	3
AT 306	Automotive Air Conditioning System	4
AT 313	Automotive Brakes	4
AT 314	Suspension and Alignment	4
AT 334	Automotive Machining	5
AT 341	Fuel Injection/Turbocharging	5
AT 343	Engine Performance Diagnosis	5
AT 344	Automotive Emission Control	4
AT 350	Skills USA Competition Prep	3
AT 389	Independent Projects in Automotive Technology	1-3
AT 399	Special Topics in Automotive Technology	.5-3

ELECTRONICS TECHNOLOGY w/EMPHASIS IN NETWORK MAINTENANCE AND DIGITAL TECHNOLOGIES (A.S. & Certificate of Achievement)

The associate in science degree or certificate option offer students a comprehensive program in networking essentials, basic electronics and computer applications. The graduate of the AS or certificate program in network maintenance/digital technologies will:

- Demonstrate a fundamental mastery of knowledge and the use of electronic equipment in electrical, digital and analog circuits.

- Use computer simulation and design software to conduct, analyze and interpret electrical, digital and analog circuits.
- Make calculations involving various electrical laws, formulas and principles for predicting circuit parameters using algebra and trigonometry required for electronics.
- Use research strategies to acquire information pertinent to the solution of electronic circuits and systems.
- Write technical laboratory reports with conclusions.
- Demonstrate understanding of how computers communicate with each other and the methods employed to ensure that the communications is reliable.
- Modify operating parameters of infrastructure network devices to meet network requirements.

A major of 29 units is required for the associate in science degree and certificate.

Required core courses (18 units):

COURSE NUMBER	TITLE	UNITS
EL 105	PC Preventive Maintenance and Upgrading	3
EL 106	Networking Essentials 1	3
EL 107	Networking Essentials 2	3
EL 108	Networking Essentials 3	2
EL 109	Networking Essentials 4	2
EL 118	Fundamentals of DC & AC Circuit Analysis	3
<i>or</i>		
EL 111	Fundamentals of DC Circuit Analysis 1	1.5
<i>and</i>		
EL 113	Fundamentals of AC Circuit Analysis 1	1.5
EL 119	Fundamentals of DC & AC Circuit Analysis Lab	2
<i>or</i>		
EL 112	Fundamentals of DC Circuit Analysis Lab	1
<i>and</i>		
EL 114	Fundamentals of AC Circuit Analysis Lab	1

Plus a minimum of 3 units selected from the following:

BUS 101	Introduction to Business	3
CBIS 101	Computer Concepts and Applications	3
CS102	Introduction to Computing with HTML	3
EL 125	Digital Devices and Circuits	3

and

EL 126	Digital Devices and Circuits Lab	2
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Plus a minimum of 3 units selected from the following:

CS111	Fundamentals of Programming 1	4
CS161	Discrete Structures	3
CS175	Object-Oriented Programming	3
EL 350	Skills USA Competition Prep	3

ENGINEERING TECHNOLOGY: ENGINEERING DRAFTING (Certificate of Accomplishment)

The certificate in engineering drafting is intended to prepare students for employment (or to transfer to a university) with a strong background in the mechanical areas of drawing, while also becoming a skilled operator of a CADD system.

The graduate of the certificate program in engineering drafting will:

- Develop graphic communication skills including orthographic projection; detail and assembly drawings; auxiliaries; sections; dimensioning; and surface development.
- Be able to use computer-aided drafting and design CADD software to create, modify, delete, transfer, and plot graphic files used to produce complete engineering drawings.
- Develop familiarity with principles and application of engineering drawing, including, freehand sketching, pictorial drawings, engineering lettering, dimensioning, sections, auxiliary, surface finish, standard and geometric tolerancing, threads, and fasteners.
- Develop the ability to use engineering handbooks, ordinances, codes and incorporate such regulations with engineering design and production decisions.
- Develop the ability to read engineering drawings and specifications.
- Develop the ability to understand the intent of the engineer by interpreting the relationship of the two-dimensional drawings with respect to the actual objects or projects.

A total of 15 units is required for the certificate.

COURSE NUMBER	TITLE	UNITS
Required core courses (12 units):		
ET 100	Computer Aided Drafting and Design	3
ET 140	Engineering Drawing	3

ET 145	Advanced Engineering Drawing	3
ET 117	Print Reading and Interpretation	3

Plus a minimum of 3 units selected from the following:

ARCH 111	Architectural Graphics	3
ARCH 121	Architectural Drawing 1	4
ARCH 122	Architectural Drawing 2	4
ET 189	Independent Projects in Engineering Technology	1-3

ET 350

WELDING TECHNOLOGY (A.S. & Certificate of Achievement)

The associate degree and certificate curriculum in welding technology is designed to provide comprehensive occupational training in all common types of welding methods as related to today's welding fabrication industries. This program will provide students with manipulative skills and technical knowledge required to perform in the areas of oxyacetylene, shielded metal arc and gas metal arc (G.M.A.W. and T.I.G.) welding processes. Also included in this program are hand cutting and semi-automatic cutting techniques. Certification tests may be taken. Employment opportunities available are welder, welder mechanic, maintenance welder, construction welder, pipe welder and welding inspectors. The graduate of the AS or certificate program in welding technology will:

- Pass at least one welder qualification test (3G-verticle or 4G-overhead) using at least one basic process.
- Pass the GMAW and SMAW processes to the American Welding Societies D1.1 Structural Welding Code.
- Have competency in blueprint reading.
- Have a working knowledge of metallurgy.
- Be able to do a basic layout, fitting and cutting operation.
- Have the ability to operate basic welding equipment in a safe manner.

A major of 31 units is required for the associate in science degree and certificate.

Required core courses (16 units):

COURSE NUMBER	TITLE	UNITS
MT 109	Survey of Machining and Manufacturing	4
WLDT 106	Beginning Welding	3
WLDT 107	Advanced Welding	3
WLDT 300	Shop Math and Measurement	3
WLDT 306	Layout and Fabrication Interpretation	3

Plus a minimum of 15 units selected from the following:

MT 110	CNC Principles and Practices 1	4
WLDT 307	G.M.A.W. Welding	3
WLDT 308	T.I.G. Welding	3
WLDT 312	Pipe Fitting and Welding	3
WLDT 315	Metal Fabrication	4
WLDT 330	Welding Certification	3
WLDT 331	Welding Certification Lab	2

Recommended electives

WLDT 199	Special Topics in Welding Technology	.5-3
WLDT 305	Welded Sculptural Projects	.5

WELDING TECHNOLOGY: METAL FABRICATION (Certificate of Achievement)

The graduate of the certificate program in metal fabrication will:

- Pass at least one welder qualification test (3G-verticle or 4G-overhead) using at least one basic process.
- Have competency in blueprint reading.
- Have a working knowledge of metallurgy.
- Do a basic layout, fitting and cutting operation.
- Operate basic welding equipment in a safe manner.
- Weld, cut and fit ferrous and non-ferrous materials to industry standard.

A total of 20 units is required for the certificate.

COURSE NUMBER	TITLE	UNITS
MT 109	Survey of Machining and Manufacturing	4
WLDT106	Beginning Welding	3
WLDT 107	Advanced Welding	3
WLDT 300	Shop Math and Measurement	3
WLDT 306	Layout and Fabrication Interpretation	3
WLDT 315	Metal Fabrication	4

WELDING TECHNOLOGY: PIPE WELDING TECHNOLOGY (Certificate of Achievement)

The graduate of the certificate program in pipe welding technology will:

- Pass at least one welder qualification test (3G-verticle or 4 Goverhead) using at least one basic process.
- Have competency in blueprint reading.
- Have a working knowledge of metallurgy.
- Do a basic layout, fitting and cutting operation.
- Operate basic welding equipment in a safe manner.
- Weld, cut and fit ferrous and non-ferrous materials to industry standard.

A total of 19 units is required for the certificate.

COURSE NUMBER	TITLE	UNITS
MT 109	Survey of Machining and Manufacturing	4
WLDT 106	Beginning Welding	3
WLDT 107	Advanced Welding	3
WLDT 300	Shop Math and Measurement	3
WLDT 306	Layout and Fabrication Interpretation	3
WLDT 312	Pipe Fitting and Welding	3