

POLICIES AND PROCEDURES

Students have full responsibility for acquainting themselves with all policies, requirements and procedures pertaining to their academic programs. Ranken reserves the right to change course offerings, course registrations, policies or procedures as it deems necessary. Current policies and procedures can be found in the student handbook.

NONDISCRIMINATION POLICY

Ranken Technical College complies with Title VII of the Civil Rights Act of 1964. The College does not discriminate on the basis of race, color, religion, age, gender, sexual preference, national or ethnic origin, or disability in the administration of its educational policies, admission policies, scholarship or loan programs and other college programs.

STUDENTS WITH DISABILITIES POLICY

In compliance with the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Ranken Technical College provides access for students with disabilities. The Student Achievement Center makes every effort to give each student with a disability an equal opportunity to participate in the mainstream of college life at Ranken. Further information on this policy may be found in the student handbook.

SEXUAL HARASSMENT

In keeping with the College's efforts to treat all members of the Ranken community with dignity and respect, it is the policy of Ranken Technical College that any form of sexual harassment of students or employees at the College is unacceptable and will not be tolerated. Further information on this policy may be found in the student handbook.

SUBSTANCE ABUSE

It is the goal of Ranken Technical College to protect the public health and environment of the College community by promoting an environment free of substance abuse.

DRESS AND APPEARANCE POLICIES

As part of Ranken's commitment to prepare and train students fully for their future careers, the College has policies on appearance, including apparel, jewelry and casual days. Students should refer to the student handbook "Dress and Appearance Policies" section.

ANNUAL NOTIFICATION UNDER THE FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)

Ranken Technical College will compile a number of important records in the course of a student's application, enrollment and attendance. These include:

- Admissions record
- Academic record
- Financial Aid/Business Office Account record
- Attendance record
- Disciplinary record

Students have the right to inspect and review their educational records upon request to the Registrar. Those interested should submit to the Registrar a written request that identifies as precisely as possible the record or records to be inspected. If, after reviewing records, a student finds that they contain errors and are inaccurate or misleading, he or she may request that the records be amended. If the College does not agree with the student's position, the student may request that a hearing be held. If the student believes that the College has not followed the federal rules under FERPA, the student may write to the U.S. Department of Education. A copy of the complete FERPA policy is available in the Registrar's office.

Note: The academic transcript of a student is created and maintained by the submission of various other records from faculty and support staff. The academic transcript of a student will be retained by Ranken Technical College perpetually. The records that support the academic transcript have retention limits, as defined in the College's FERPA policy.

RELEASE OF STUDENT INFORMATION

Generally, the College will not release any information about a student to outside individuals without having first received written permission from the student. All students should complete a Release of Information Authorization for inclusion in the academic record on file in the Registrar's office. On occasion, the College may provide such information under state or federal laws, to auditors, accreditors or other official reviewers.

The release of certain information is not considered a violation of a student's rights to privacy; the College is permitted to release this information routinely, unless a student specifically asks it not to be released. At Ranken, this general information is considered to be name, program of study, participation in recognized activities, dates of enrollment and academic honors, certificates or degrees earned.

BOOKSTORE REFUNDS

Items returned must be accompanied by a receipt.

All textbooks are returnable for a full refund within 30 days of purchase if the books are deemed resalable by bookstore management.

Textbooks are returnable for a full refund when a class is cancelled or when a student tests out of the class (if books are in resalable condition).

Tools are returnable for a full refund within 30 days of purchase if they are deemed resalable by bookstore management. Resalable tools are tools that have not been used, engraved, marked on, damaged or abused in any way.

Defective tools may be returned for an even exchange with bookstore management approval. Used tools are not returnable except in special circumstances as determined by bookstore management.

Students withdrawing from the College have 30 days from the Last Date of Attendance (LDA) in which to retrieve tools. If tools are not retrieved after 30 days, they become the property of Ranken Technical College.

FOR ALL OTHER STUDENT POLICIES AND PROCEDURES, PLEASE REFER TO THE STUDENT HANDBOOK.



AUTOMOTIVE DIVISION



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The Automotive Collision Repair Technology program operates in 20,000 square feet of shop space devoted exclusively to student training utilizing the Inter-Industry Conference on Automotive Collision Repair (I-CAR) Enhanced Delivery Curriculum.

In this real-world setting, students repair late model collision-damaged vehicles with modern equipment such as frame machines, computerized electronic measuring systems, mig welders, a resistance welder, downdraft spray booths, prep stations, spot welding equipment and a Hunter four-wheel computerized alignment machine.

After returning vehicles to pre-accident condition, they are either sold or driven by Ranken administration and faculty.

The program is certified in all four areas by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF) in all four areas of auto body repair: Non-Structural, Structural, Refinishing and Mechanical/Electrical.

ASSOCIATE OF TECHNOLOGY, ASSOCIATE OF SCIENCE OR CERTIFICATE OF TECHNOLOGY

Based on the tasks established by ASE/NATEF and I-CAR, this two-year program provides students with skills to restore collision damaged vehicles to industry standards. The importance of certification and training continues to increase in the industry among collision repair facilities and insurance companies. In response to this demand, a graduate of the program has the potential to receive 70 I-CAR Gold Points and four ASE certifications. Graduates may also qualify for a Sikkens certification.

Program graduates are trained in:

- Unibody and full frame damage analysis
- Writing estimates manually and electronically
- Making non-structural repairs in metal and plastics
- Performing welding and cutting operations in steel and aluminum
- Straightening structural steel and aluminum
- Replacement of structural components
- Steering and suspension repair and alignments
- Air conditioning systems relating to collision damage
- Diagnosing electrical and electronic problems
- Refinishing systems and the processes to restore the original finish to industry standards

Upon completing the program, graduates are qualified for positions as collision repair technicians and automotive refinish technicians, with the option to pursue careers in management, estimating and sales.

Students interested in earning the certificate of technology will take all Automotive Collision Repair Technology courses and three general education courses.

Upon completion of the associate degree program, students are eligible for the Bachelor of Science in Applied Management (BSAM) program – and could graduate with a bachelor's degree in as little as two short years.

PROGRAM COURSES			Hours	Prerequisites
First Semester	ACR1111	Non-Structural Analysis and Damage Repair Theory	6	
	ACR1112	Non-Structural Analysis and Damage Repair Shop	8	
Second Semester	ACR1211	Structural Analysis and Collision Repair Theory	6	
	ACR1212	Structural Analysis and Collision Repair Shop	8	
Third Semester	ACR2111	Collision Mechanical Components Theory	6	
	ACR2112	Collision Mechanical Components Shop	8	
Fourth Semester	ACR2211	Painting and Refinishing Theory	6	
	ACR2212	Painting and Refinishing Shop	8	
Total Technical Credit Hours Required			56	

GENERAL EDUCATION COURSES			Hours	Prerequisites
English/Social Sciences	ENG1101	College Composition I	3	Placement Exam or ENG1099
	ENG2102	College Composition II	3	ENG1101
	COM1105	Oral Communications	3	
	SOC1206	Principles of Sociology or	3	ENG1099 (Co. Req.)
	PSY1206	Introduction to Psychology	3	ENG1099 (Co. Req.)
Mathematics/Science	MTH1110	Elementary Algebra and MTH1111 Intermediate Algebra or	6	Placement Exam or MTH1099
	MTH1100	Elementary/Intermediate Algebra	3	Placement Exam
	PHY2100	Conceptual Physics	3	MTH1110
Business/Information Technology	CIT1100	Computer Literacy	2	
	MNG1224	Automotive Service Management	3	ENG1099 (Co. Req.)
	WFD1224	Automotive Job Search Success	1	MNG1224 (Co. Req.)
Associate of Science	MTH2112	College Algebra	3	MTH1100 or MTH1111
Additional Required Courses	MTH2220	Trigonometry	3	MTH2112
	PHY2230	College Physics (Substitute for PHY2100)	3	MTH2220
	MTH2240	Survey of Calculus	3	MTH2112
GENERAL EDUCATION COURSES (certificate of technology)			Hours	Prerequisites
	COM1080	Technical Communications	3	
	CIT 1110	Computer Literacy	2	
	WFD1224	Automotive Job Search Success	1	

Important Note: Only courses in which a grade of "C" or higher is earned may be applied toward this Ranken degree.

COURSE DESCRIPTIONS

ACR1111 NON-STRUCTURAL ANALYSIS AND DAMAGE REPAIR THEORY

Covers worker protection and personnel safety relative to the collision repair industry. The course emphasizes vehicle identification, estimating systems and terminology used in the collision repair process. Students will learn how to properly analyze frontal, side and rear impacts along with performing a mechanical systems analysis. This section also covers basic cosmetic straightening of steel and body filler applications.

Offers instruction in the replacement of mechanically fastened, welded and adhesively bonded panels. Provides an in-depth study of plastic repair methods using welding and adhesives. An overview of trim and hardware used in today's vehicles is discussed, along with movable and stationary glass. Six credit hours.

ACR1112 NON-STRUCTURAL ANALYSIS AND DAMAGE REPAIR SHOP

Emphasizes application of principles studied in ACR1111 to hands-on shop work. Eight credit hours.

ACR1211 STRUCTURAL ANALYSIS AND COLLISION REPAIR THEORY

Introduces the Steel GMA (MIG) welding process, preparing the students for the I-CAR Automotive Steel MIG Welding qualification test. An overview of the oxyacetylene/plasma cutting process is covered

along with a section on aluminum welding used in repairing today's modern vehicles. This section prepares the student for the Automotive Aluminum GMA Welding Qualification Test. Includes a study of restraint systems and advanced application of movable and stationary glass.

Introduces measuring procedures and how they relate to structural repairs. Provides detailed instructions on structural straightening of steel and aluminum materials along with the replacement of aluminum panels. Six credit hours.

ACR1212 STRUCTURAL ANALYSIS AND COLLISION REPAIR SHOP

Emphasizes application of principles studied in ACR1211 to hands-on shop work. Eight credit hours.

ACR2111 COLLISION MECHANICAL COMPONENTS THEORY

Covers tires, wheels, suspensions and steering systems. An in-depth study is done on wheel alignment and diagnostic angles. This information is critical for performing alignments in a shop environment. This course also introduces basic electrical theory. Incorporates information on diagnosis and testing of electrical systems. Advanced electrical systems are covered including lighting, starting and charging systems and power accessories. Brake systems are covered, with discussions on anti-lock brakes and traction control systems. Drive trains are also discussed along with fuel, exhaust and emissions systems. Six credit hours.

ACR2112 COLLISION MECHANICAL COMPONENTS SHOP

Emphasizes application of principles studied in ACR2111 to hands-on shop work. Eight credit hours.

ACR2211 PAINTING AND REFINISHING THEORY

Covers in detail the equipment needed to refinish vehicles with today's paint technology. An overview of V.O.C. regulations and personal/refinishing safety is presented. Proper surface preparation along with proper masking techniques are discussed. Emphasis is placed on the importance of proper undercoat systems. Presentations on color theory and how it relates to the refinishing world. Discussions on the application and blending of waterborne basecoat/clearcoat and tri-coat paint systems. Refinishing of plastics is discussed along with programs on paint tinting and detailing. Six credit hours.

ACR2212 PAINTING AND REFINISHING SHOP

Emphasizes application of principles studied in ACR2211 to hands-on shop work. Eight credit hours.

MNG1224 AUTOMOTIVE SERVICE MANAGEMENT

This online course provides students with an understanding of the characteristics, organization, structure, operations and management of the automotive service business. Students will gain a sound foundation of the automotive service business world as they prepare for business or other careers. The objectives of this course are accomplished through the use of case studies and critical thinking exercises and are designed to meet the objectives of the Automobile Service Consultant (ASE). Three credit hours.

WFD1224 AUTOMOTIVE JOB SEARCH SUCCESS

Automotive job search success is an online course that focuses on the fundamental tools and techniques to obtain an automotive job. Students will create a resume, including references and an updated work history. Students explore interview techniques, gather information in cover and thank you letters and become knowledgeable of appropriate behaviors and attitudes for a successful job search. One credit hour.

EVENING PROGRAM CERTIFICATE IN AUTOMOTIVE COLLISION REPAIR

The Automotive Collision Repair Technology program operates in 20,000 square feet of shop space devoted exclusively to student training on current model vehicles with collision damage. In this real-world setting, students use modern equipment such as three types of electronic measuring systems, body and frame machines, downdraft spray booths, computerized mixing systems, prep stations, MIG welders and a resistant spot welder. The department utilizes the Inter-Industry Conference on Automotive Collision Repair (I-CAR) Enhanced Delivery Curriculum and is NATEF certified in all four areas.

The following sections are stand-alone and can be taken in any sequence. These classes meet on Mondays and Wednesdays or Tuesdays and Thursdays from 6:00 p.m. to 9:30 p.m.

For students interested in furthering their education, these courses can be credited toward the Bachelor of Science in Applied Management (BSAM) degree.

ASSOCIATE OF APPLIED SCIENCE

Ranken is offering an Associate of Applied Science degree as a part of the evening program curriculum. You can earn your associate degree with a combination of Ranken's standard evening school courses as well as our new online courses. You can also transfer credit from other accredited technical training programs, or have your technical work experience evaluated for possible transfer credit. (30 technical credit hours required for graduation.)

For all General Education course requirements, please turn to page 89. For more information about the BSAM degree, please turn to page 92.

PROGRAM COURSES			Hours	Prerequisites
Section One	ACR0110	Non-Structural Repair	6	
Section Two	ACR0111	Refinishing	6	
Section Three	ACR0112	Structural	6	
Section Four	ACR0113	Mechanical	6	
Total Technical Credit Hours for Certificate Completion			24	

COURSE DESCRIPTIONS

ACR0110 NON-STRUCTURAL REPAIR

This course offers a general overview of repair procedures, surface preparation, straightening minor damage and applying plastic filler. Also included are plastic identification and repair procedures, panel replacement and alignment. In addition, theory and application of welding procedures when replacing non-structural and structural parts will also be covered. The emphasis of the class is prepping and passing the I-CAR MIG Welding Qualification Test. Six credit hours.

ACR0111 REFINISHING

This course teaches students to use refinish equipment, understand and apply the proper undercoat system, determine areas to be refinished, methods of sanding and applying waterborne BC/CC paint system. Also included are blending waterborne BC/CC along with removing minor imperfections. The theory and practice involved in the application of tri-coat paint systems, color tinting and plastic refinishing is also covered. Six credit hours.

ACR0112 STRUCTURAL

This course covers the theory and practical applications involved in measuring systems, diagnosing unibody damage and comprehending specification manuals. Students are also given instruction on collision theory, structural damage analysis skills and correction procedures on unibody and bodyover-frame vehicles. Six credit hours.

ACR0113 MECHANICAL COLLISION REPAIR

This course covers the theory of steering and suspension as it relates to a collision. Students will learn different types of suspensions and their components along with performing four wheel alignments. Emphasis is placed on understanding all alignment angles; this will enable a student to help diagnose damage to the vehicle's structure and suspension parts. This course examines electrical circuit types and circuit theory. Included is discussion of parallel and series circuits and how voltage, amperage and resistance affect each other. Students will understand the theory of automotive air conditioning systems using 134a refrigerants. Both the function and the design of various restraint systems, including seat belts, seat belt tensioners and air bags will be discussed. Students will perform common collision related diagnosis and repairs in these areas. Six credit hours.

As technology and electronics continue to influence the automotive industry, many of St. Louis' largest car manufacturers, dealerships and repair shops are in need of skilled technicians capable of solving new and complex problems.

To meet this need, Ranken offers an Automotive Maintenance Technology (AMT) program that provides students with the comprehensive knowledge and skills required by leading automotive manufacturers and factories today.

Known for its high standards, the Chicago Pneumatic Tool Company and Babcox Publishing recognized Ranken as one of the top 20 automotive programs in its 2009 National School of the Year Contest. Additionally, our students regularly compete and win top honors at the local, state and district levels of the SkillsUSA (formerly VICA) competition. Last year, Ranken AMT students won first place in the national SkillsUSA competition.

ASSOCIATE OF TECHNOLOGY, ASSOCIATE OF SCIENCE OR CERTIFICATE OF TECHNOLOGY

Ranken's AMT program provides students with two years of hands-on training and instruction in diagnosing and repairing automotive problems and malfunctions. Combining traditional and modern industry practices, the program develops student proficiencies in the following areas:

- Engine repair
- Automatic transmission/transaxle
- Manual drivetrain and axles
- Suspension and steering
- Brakes
- Electrical/electronic systems
- Heating and air conditioning
- Engine performance

During the last 40 days of the program, students will gain real-world experience as they participate in an on-site automotive practicum in which they will service and repair customer vehicles.

For students interested in employment with the region's leading auto manufacturers, Ranken currently offers several options; the General Motors Automotive Service Education Program (ASEP), the Toyota/Lexus Technicians Education Network (T-TEN), and the Honda/Acura Professional Automotive Career Training (PACT). All programs train on late model vehicles and incorporate a professional internship in a dealership or repair shop during the final semester.

The GM ASEP program has specific technician training initiatives to assist GM dealers in developing their next generation of technicians. The GM ASEP program offers training for technically inclined students pursuing a career in servicing and maintaining GM vehicles at area Buick, Cadillac, Chevrolet, GMC or AC Delco Total Service Satisfaction (TSS) service centers.

In Ranken's Import Maintenance Technology program all of the training will be focused on import training and curriculum. The program incorporates hands-on training and on-the-job experience at a sponsoring import dealer under the supervision of a mentor technician. Toyota T-TEN program and American Honda's PACT programs are specifically designed to help individuals build their automotive career within a Toyota, Lexus, Honda or Acura dealership.

Students who wish to pursue a high performance option may do so at the end of their third semester.

AIT (Automotive Import Technology) courses are focused on Toyota T-TEN and Honda PACT specific curriculum and include technology common to all vehicles with an emphasis on import brands.

GMT (General Motor Technology) courses are based on the General Motor Automotive Service Educational Program (ASEP), which provides GM specific technician training initiatives to assist GM dealers in educating their next generation of technicians.

These programs are designed to better prepare students for equipment that is more brand specific than general automotive classes.

Upon completion of the associate degree program, students are eligible for the Bachelor of Science in Applied Management (BSAM) program – and could graduate with a bachelor's degree in as little as two short years.

PROGRAM COURSES			Hours	Prerequisites
First Semester	AMT/AIT1001	Automotive Foundations Theory	6	
	AMT/AIT1002	Automotive Foundations Shop	8	
Second Semester	AMT/GMT/AIT203	Automotive Electronics & Engine Controls Theory	6	AMT/AIT1001
	AMT/GMT/AIT204	Automotive Electronics & Engine Controls Shop	8	AMT/AIT1002
Third Semester	AMT/GMT/AIT2103	Chassis & Climate Control Theory	6	AMT/AIT1001
	AMT/GMT/AIT2104	Chassis & Climate Control Shop	8	AMT/AIT1002
Fourth Semester	AMT/GMT2121	Automotive Drivetrain Systems Theory	3	All of the above
	AMT/GMT2122	Automotive Drivetrain Systems Shop	4	All of the above
	AMT/AIT2203	Automotive Line or	7	All of the above
	AMT/GMT/AIT2222	Automotive Professional Internship	7	All of the above
Total Technical Credit Hours Required			63	

GENERAL EDUCATION COURSES			Hours	Prerequisites
English/Social Sciences	ENG1101	College Composition I	3	Placement Exam or ENG1099
	ENG2102	College Composition II	3	ENG1101
	COM1105	Oral Communications	3	
	SOC1206	Principles of Sociology or	3	ENG1099 (Co. Req.)
	PSY1206	Introduction to Psychology	3	ENG1099 (Co. Req.)
Mathematics/Science	MTH1110	Elementary Algebra and MTH1111 Intermediate Algebra or	6	Placement Exam or MTH1099
	MTH1100	Elementary/Intermediate Algebra	3	Placement Exam
	PHY2100	Conceptual Physics	3	MTH1110
Business/Information Technology	CIT1100	Computer Literacy	2	
	MNG1224	Automotive Service Management	3	ENG1099 (Co. Req.)
	WFD1224	Automotive Job Search Success	1	MNG1224 (Co. Req.)
Associate of Science	MTH2112	College Algebra	3	MTH1100 or MTH1111
Additional Required	MTH2220	Trigonometry	3	MTH2112
Courses	PHY2230	College Physics (Substitute for PHY2100)	3	MTH2220
	MTH2240	Survey of Calculus	3	MTH2112
GENERAL EDUCATION COURSES (certificate of technology)			Hours	Prerequisites
	COM1080	Technical Communications	3	
	CIT 1110	Computer Literacy	2	
	WFD1224	Automotive Job Search Success	1	

Important Note: Only courses in which a grade of "C" or higher is earned may be applied toward this Ranken degree.

COURSE DESCRIPTIONS

AMT/AIT1001 AUTOMOTIVE FOUNDATIONS THEORY

The Foundation class includes an introduction to the automotive service industry with the emphasis on the skills needed to gain entry level employment. Students will learn how to prepare a repair orders and navigate electronic information systems such as Alldata, Mitchell and other factory OEM systems. This class will also cover the use of a digital meter to test electrical circuits and how to operate scan tools to retrieve trouble code information from vehicle computers. Students will be trained to work safely in an automotive shop environment and follow a strategic approach in the repair process. The Automotive Foundation class will also include a section of training on automotive engines. Students will learn how to diagnose and service gasoline engines by removing, disassembling and measuring components; this process will be completed with re-assembly, installation and adjustments. Students will also learn how to properly perform fluid maintenance services on modern automotive vehicles. Six credit hours.

AMT/AIT1002 AUTOMOTIVE FOUNDATIONS SHOP

Hands on application of AMT/AIT 1001 in a shop setting. Eight credit hours.

AMT/GMT/AIT1203 AUTOMOTIVE ELECTRONICS & ENGINE CONTROLS THEORY

This course is an in-depth study of the diagnosis and repair of electrical problems. Three main sections of electrical are covered in the curriculum; engine control systems, body electronics and computer networking.

The Engine control system portion covers fuel injection, ignition systems and emission system. The OBD II platform will be taught and students will learn how to use a variety of diagnostic tools such as scan tools, lab scopes, and amp probes. The body electronic section will include all of the power accessories such as windows, seats and door locks. It will also include how to safely diagnose and repair air bag systems. Students will learn how to diagnose and repair computer communication and networking problems and also learn about the proper procedures to replace and program a factory computer on a modern vehicle. Six credit hours.

AMT/GMT/AIT1204 AUTOMOTIVE ELECTRONICS & ENGINE CONTROLS SHOP

Hands-on application of AMT1110 in a shop setting. Eight credit hours.

AMT/GMT/AIT2103 CHASSIS & CLIMATE CONTROL THEORY

The Chassis portion of this course includes steering and suspension and brakes. The steering and suspension sections includes how to identify, diagnose and replace steering and suspension components such as rack and pinion steering, Macpherson struts, shocks, ball joints and tie rod ends. Students will learn essential tire work components, using the latest in road force wheel balancing equipment. Students will also learn how to properly align a vehicle using the latest laser alignment equipment. In the brakes section, students will learn how to complete a proper brake job on both drum and disc systems. Students will use the most up-to-date car brake lathes and true rotors, which are mandatory for most warranty repairs in dealerships. Students will also learn how to diagnose and repair ABS and stability control systems. Climate Control instruction is included in this course, students will learn how to service R134A systems by diagnosing and replacing A/C components. Student will also use a variety of A/C recovery and refill machines. Six Credit Hours.

AMT/GMT/AIT2104 CHASSIS & CLIMATE CONTROL SHOP

This course is a hands-on, shop application of course AMT/GMT/AIT 2103. Eight credit hours.

AMT/GMT2121 AUTOMOTIVE DRIVETRAIN SYSTEMS THEORY

This course covers the diagnosis, repair, and service of automatic transmissions, manual transmissions and both four-and all-wheel drive transfer cases; which includes the diagnosis and service procedures of U-joints and constant velocity joints. Three credit hours.

AMT/GMT2122 AUTOMOTIVE DRIVETRAIN SYSTEMS SHOP

This course is a hands-on, shop application of AMT/GMT2121 in a shop setting. Four credit hours.

AMT/AIT2203 AUTOMOTIVE LINE

The line shop is a hands-on application of all automotive areas in an actual shop atmosphere with service and repair of customer vehicles, including training in service-writing and parts techniques. Seven credit hours.

AMT/GMT/AIT2222 AUTOMOTIVE PROFESSIONAL INTERNSHIP

Incorporates on-the-job experience at a sponsoring dealer or service center under the supervision of a mentor technician. The service manager and the Ranken coordinator evaluate this internship. Seven credit hours.

MNG1224 AUTOMOTIVE SERVICE MANAGEMENT

This online course provides students with an understanding of the characteristics, organization, structure, operations and management of the automotive service business. Students will gain a sound foundation of the automotive service business world as they prepare for business or other careers. The objectives of this course are accomplished through the use of case studies and critical thinking exercises and are designed to meet the objectives of the Automobile Service Consultant (ASE). Three credit hours.

WFD1224 AUTOMOTIVE JOB SEARCH SUCCESS

Automotive job search success is an online course that focuses on the fundamental tools and techniques to obtain an automotive job. Students will create a resume, including references and an updated work history. Students explore interview techniques, gather information in cover and thank you letters and become knowledgeable of appropriate behaviors and attitudes for a successful job search. One credit hour.

EVENING PROGRAM CERTIFICATE IN AUTOMOTIVE MAINTENANCE TECHNOLOGY

This curriculum emphasizes the most modern diagnostic equipment in the automotive maintenance field. Upon completion of the instruction and hands-on experience in diagnosing and repairing automotive problems and malfunctions, students are prepared to enter the job market as entry-level technicians.

The program develops student proficiencies in the following areas:

- Engine repair
- Automatic transmission/transaxle
- Manual drivetrain and axles
- Suspension, steering and brakes
- Electrical/electronic systems
- Heating and air conditioning
- Engine performance

Successful completion of all four semesters is necessary to qualify for a certificate. These classes meet on Mondays and Wednesdays or Tuesdays and Thursdays from 6:00 p.m. to 9:30 p.m.

For students interested in furthering their education, these courses can be credited toward the Bachelor of Science in Applied Management (BSAM) degree.

ASSOCIATE OF APPLIED SCIENCE

Ranken is offering an Associate of Applied Science degree as a part of the evening program curriculum. You can earn your associate degree with a combination of Ranken's standard evening school courses as well as our new online courses. You can also transfer credit from other accredited technical training programs, or have your technical work experience evaluated for possible transfer credit. (30 technical credit hours required for graduation.)

For all General Education course requirements, please turn to page 89. For more information about the BSAM degree, please turn to page 92.

PROGRAM COURSES			Hours	Prerequisites
First Semester	AMT0110	Engines and Automotive Electricity	6	
Second Semester	AMT0120	Computer Electronics and Computer Controls	6	AMT0110
Third Semester	AMT0230	Brakes/Vehicle Systems and Suspensions	6	AMT0110 (Co. Req.)
Fourth Semester	AMT0240	Clutches/Manual Transmissions and Automatic Transmissions	6	AMT0120 (Co. Req.)
Total Technical Credit Hours for Certificate Completion			24	

COURSE DESCRIPTIONS

AMT0110 ENGINES AND AUTOMOTIVE ELECTRICITY

Instruction begins with engine foundation, that provides a detailed study of internal combustion engines, including the theory of operation and basic adjustments. Instruction includes disassembly, component study, component measurement, reassembly and how to make the appropriate mechanical adjustments on an automotive engine. The second half of the semester students will focus on electrical foundations and cover the theory of Parallel/Series circuits, Ohms law, DVOM testing and servicing of various electrical components. Electrical systems that will be covered include automotive batteries, starters, charging systems, interior/exterior lighting and accessories. Six credit hours.

AMT0120 COMPUTER ELECTRONICS AND COMPUTER CONTROLS

The semester begins with automotive body electronics including the theory and operation of automotive accessories and automotive air conditioning systems, including both R-12 and R134a refrigerants. Hands-on diagnosis and repair of refrigerant systems are practiced in the shop. The second part of the semester covers the principles of operation, diagnosis and service of computer controlled engines and OBD II technology. The hands-on emphasis includes diagnosis of computer circuitry with a digital automotive scope and various types of scan tools. Computer-related drivability troubleshooting is featured during this course. Six credit hours.

AMT0230 BRAKES/STEERING SUSPENSION SYSTEMS

Instruction begins with a comprehensive overview of vehicle brake systems, including brake foundations, disc and drum, hydraulics and electronic antilock braking systems. An in-shop emphasis focuses on the hands-on repair of braking systems, including rotor/drum reconditioning. This course also covers vehicle chassis systems. The curriculum will address steering systems, front suspension systems, tire and wheel construction and balance and wheel alignment, including two and four wheel adjustments. The theory section incorporates a comprehensive study of vehicular chassis systems in current operation. Six credit hours.

AMT0240 CLUTCHES/MANUAL TRANSMISSIONS AND AUTOMATIC TRANSMISSIONS

This course starts with the basic principles of operation for clutches, differentials, manual transmissions and transaxles. The course includes hands-on disassembly, evaluation and reassembly of rear wheel drive differentials, limited slip carriers, transfer cases, rear wheel drive transmissions, transaxles, Constant Velocity (C.V.), driveshafts and clutches. This course finishes up the semester covering automatic transmissions and automatic transaxles commonly used today. Students learn torque converters, planetary gearing, clutches, bands, electronic controls and hydraulic circuitry. The emphasis of this course is the disassembly, evaluation and reassembly of several currently used transmissions and transaxles. Six credit hours.

EVENING PROGRAM CERTIFICATE IN FLEET MANAGEMENT

Companies with large fleets of vehicles need qualified automotive experts to manage those fleets. Local companies like Ameren and Enterprise as well as St. Louis City and St. Louis County and many local

police departments all need fleet managers. Students can now take our new NAFA – www.nafa.org – approved training classes to become a Certified Automotive Fleet Manager (CAFM) or Certified Automotive Fleet Supervisor (CAFS).

PROGRAM COURSES			Hours	Prerequisites
	MNG3010	Professional Skills Development	3	
	MNG3011	Vehicle Maintenance Management	3	
	MNG3012	Risk and Asset Management	3	
	MNG3013	Business Management	3	

MNG3010 PROFESSIONAL SKILLS DEVELOPMENT

This course focuses on leadership skills and development of professional expertise to allow fleet managers and supervisors to continuously educate themselves to stay ahead of the pack. It also provides fleet managers with the tools they need to function in a data-rich, information poor work environment by giving students a general knowledge of Information Technology which will help them to solve problems and enhance IT functionality. Three credit hours.

MNG3011 VEHICLE MAINTENANCE MANAGEMENT

Vehicle maintenance directly impacts productivity, driver satisfaction, corporate image, safety, environmental compliance and the financial bottom line. The competencies in this course help students gain an understanding of essential maintenance principals to manage in-house or outsourced maintenance personnel and drivers. The VMM course also deals with both conventional and alternative fuels in centralized and decentralized operations. Three credit hours.

MNG3012 RISK AND ASSET MANAGEMENT

This course focuses on the responsibilities involved with the selection, procurement, use, care and disposal of fleet vehicle and equipment assets. It also deals with planning and decision making dealing with uncertain events as well as controlling risks before they can become a problem in addition to strategies for dealing with loss. The competencies will demonstrate the varying strategies of dealing with risk by focusing on insurance, subrogation, training and safety in addition to how to effectively handle a loss. Three credit hours.

MNG3013 BUSINESS MANAGEMENT

This course focuses on an organization's rights, boundaries and responsibilities when dealing with leasing companies, automobile dealers, supply or service contractors and insurance companies. Other competencies covered include financial analysis of various acquisition options, ability to conduct a lifecycle analysis, basic accounting principles, benchmarking, outsourcing decisions and preparing and implementing a fleet budget. Three credit hours.

The High Performance Racing Technology (HPRT) program adds the excitement of aftermarket engine performance improvement to our standard automotive technician training. Our specialized training allows students to design and build any type of high performance engine using a wide variety of aftermarket engine components and control systems and tune it for maximum output and drivability using various data acquisition tools and dynamometers.

In order to gain a foundation of mechanical repair, students in the HPRT program will share a basic first semester with the Automotive Maintenance Technology (AMT) program. Upon completion of the first semester, students will be able to focus on the HPRT curriculum, including engines and tuning.

ASSOCIATE OF TECHNOLOGY OR ASSOCIATE OF SCIENCE

Ranken's HPRT program provides students with two-and-a-half years of hands-on training and instruction in diagnosing and repairing automotive problems and malfunctions. Combining traditional and

modern industry practices, the program develops student proficiencies in the following areas:

- Engine repair
- Automatic transmission/transaxle
- Manual drivetrain and axles
- Suspension and steering
- Brakes
- Electrical/electronic systems
- Heating and air conditioning
- Engine performance
- Engine tuning/machining

In addition to the positions offered to AMT graduates, HPRT graduates accept gainful employment in automotive careers that have an emphasis in engines and tuning.

Upon completion of the associate degree program, students are eligible for the Bachelor of Science in Applied Management (BSAM) program – and could graduate with a bachelor's degree in as little as two short years.

PROGRAM COURSES			Hours	Prerequisites
First Semester	AMT/AIT1001	Automotive Foundations Theory	6	
	AMT/AIT1002	Automotive Foundations Shop	8	
Second Semester or	AHP2202	High Performance Engines	12	AMT/AIT1001
Third Semester	AHP2220	High Performance Tuning	12	AMT/AIT1002
Fourth Semester	AMT/GMT/AIT2103	Chassis & Climate Control Theory	6	AMT/AIT1001
	AMT/GMT/AIT2104	Chassis & Climate Control Shop	8	AMT/AIT1002
Fifth Semester	AMT/GMT2121	Automotive Drivetrain Systems Theory	3	All of the above
	AMT/GMT2122	Automotive Drivetrain Systems Shop	4	All of the above
	AMT/AIT2203	Automotive Line or	7	All of the above
	AMT/GMT/AIT2222	Automotive Professional Internship	7	All of the Above
Total Technical Credit Hours Required			66	
GENERAL EDUCATION COURSES			Hours	Prerequisites
English/Social Sciences	ENG1101	College Composition I	3	Placement Exam or ENG1099
	ENG2102	College Composition II	3	ENG1101
	COM1105	Oral Communications	3	
	SOC1206	Principles of Sociology or	3	ENG1099 (Co. Req.)
	PSY1206	Introduction to Psychology	3	ENG1099 (Co. Req.)
Mathematics/Science	MTH1110	Elementary Algebra and MTH1111 Intermediate Algebra or	6	Placement Exam or MTH1099
	MTH1100	Elementary/Intermediate Algebra	3	Placement Exam
	PHY2100	Conceptual Physics	3	MTH1110
Business/Information Technology	CIT1100	Computer Literacy	2	
	MNG1224	Automotive Service Management	3	ENG1099 (Co. Req.)
	WFD1224	Automotive Job Search Success	1	MNG1224 (Co. Req.)
Associate of Science	MTH2112	College Algebra	3	MTH1100 or MTH1111
Additional Required	MTH2220	Trigonometry	3	MTH2112
Courses	PHY2230	College Physics (Substitute for PHY2100)	3	MTH2220
	MTH2240	Survey of Calculus	3	MTH2112
Important Note: Only courses in which a grade of "C" or higher is earned may be applied toward this Ranken degree.				

COURSE DESCRIPTIONS

AMT/AIT1001 AUTOMOTIVE FOUNDATIONS THEORY

The Foundation class includes an introduction to the automotive service industry with the emphasis on the skills needed to gain entry level employment. Students will learn how to prepare a repair orders and navigate electronic information systems such as Alldata, Mitchell and other factory OEM systems. This class will also cover the use of a digital meter to test electrical circuits and how to operate scan tools to retrieve trouble code information from vehicle computers. Students will be trained to work safely in an automotive shop environment and follow a strategic approach in the repair process. The Automotive Foundation class will also include a section of training on automotive engines. Students will learn how to diagnose and service gasoline engines by removing, disassembling and measuring components; this process will be completed with re-assembly, installation and adjustments. Students will also learn how to properly perform fluid maintenance services on modern automotive vehicles. Six credit hours.

AMT/AIT1002 AUTOMOTIVE FOUNDATIONS SHOP

Hands-on application of AMT/AIT1001 in a shop setting. Eight credit hours.

AHP2202 HIGH PERFORMANCE ENGINES

Contains training on the entire engine machining process. Starting from engine teardown and ending with assembly and dynamometer performance verification, students learn all of the required machining processes for rebuilding a stock type engine. Throughout the course, students also learn the math and science behind the development of a proper high performance power plant while also learning to assemble a high performance engine properly and dyno test it to find out how close they are to their desired performance. Twelve credit hours.

AHP2220 HIGH PERFORMANCE TUNING

This offers a highly interactive look at many of the engine performance and control components used in the high performance tuning industry. Intake and cylinder head air flow improvements such as increased valve size, porting, bigger throttle bodies and exhaust systems are among some of the topics covered. This course also covers a wide variety of engine fuel and ignition control systems. The design and application of turbocharger and supercharger systems for gasoline and diesel engines will be covered, along with nitrous and propane injection. Students also learn carburetor modification and tuning and power train gearing and suspension systems. Twelve credit hours.

AMT/GMT/AIT2103 CHASSIS & CLIMATE CONTROL THEORY

The Chassis portion of this course includes steering and suspension and brakes. The steering and suspension sections includes how to identify, diagnose and replace steering and suspension components such as rack and pinion steering, Macpherson struts, shocks, ball joints and tie rod ends. Students will learn essential tire work components, using the latest in road force wheel balancing equipment. Students will also learn how to properly align a vehicle using the latest laser alignment equipment. In the brakes section, students will learn how to complete a proper brake job on both drum and disc systems. Students will use the most up-to-date car brake lathes and true rotors, which are mandatory for most warranty repairs in dealerships. Students will also learn how to diagnose and repair ABS and stability control systems.

Climate Control instruction is included in this course, students will learn how to service R134A systems by diagnosing and replacing A/C components. Student will also use a variety of A/C recovery and refill machines. Six credit hours.

AMT/GMT/AIT2104 CHASSIS & CLIMATE CONTROL SHOP

Hands-on application of AMT/GMT/AIT 2103. Eight credit hours.

AMT/GMT2121 AUTOMOTIVE DRIVETRAIN SYSTEMS THEORY

This course covers the diagnosis, repair, and service of automatic transmissions, manual transmissions and both four-and all-wheel drive transfer cases; which includes the diagnosis and service procedures of U-joints and constant velocity joints. Three credit hours.

AMT/GMT2122 AUTOMOTIVE DRIVETRAIN SYSTEMS SHOP

Hands-on application of AMT/GMT2121 in a shop setting. Four credit hours.

AMT/AIT 2203 AUTOMOTIVE LINE

Hands-on application of all automotive areas in an actual shop atmosphere with service and repair of customer vehicles, including training in service-writing and parts techniques. Seven credit hours.

AMT/GMT/AIT 2222 AUTOMOTIVE PROFESSIONAL INTERNSHIP

Incorporates on-the-job experience at a sponsoring dealer or service center under the supervision of a mentor technician. The service manager and the Ranken coordinator evaluate this internship. Seven credit hours.

MNG1224 AUTOMOTIVE SERVICE MANAGEMENT

This online course provides students with an understanding of the characteristics, organization, structure, operations and management of the automotive service business. Students will gain a sound foundation of the automotive service business world as they prepare for business or other careers. The objectives of this course are accomplished through the use of case studies and critical thinking exercises and are designed to meet the objectives of the Automobile Service Consultant (ASE). Three credit hours.

WFD1224 AUTOMOTIVE JOB SEARCH SUCCESS

Automotive job search success is an online course that focuses on the fundamental tools and techniques to obtain an automotive job. Students will create a resume, including references and an updated work history. Students explore interview techniques, gather information in cover and thank you letters and become knowledgeable of appropriate behaviors and attitudes for a successful job search. One credit hour.

EVENING PROGRAM CERTIFICATE IN HIGH PERFORMANCE RACING TECHNOLOGY

The High Performance Racing Technology (HPRT) evening program allows students to gain training in aftermarket engine performance improvement. Our specialized instruction allows students to design and build any type of high performance engine using a wide variety of aftermarket engine components and control systems, to tune it for maximum output and drivability using various data acquisition tools and dynamometers.

The focus is on both engines and tuning. Students entering this program must have a foundation of mechanical repair. Past Ranken Automotive Maintenance Technology (AMT) associate degree graduates are automatically qualified to enter into the program. Past Ranken AMT certificate graduates or current automotive technicians may enter the program with approval from the automotive division chair. Classes typically meet Monday -Thursday, 6:00 p.m. - 10:00 p.m. For more information about the acceptance requirements for the HPRT program, please contact the Admissions office at (314) 286-4809.

HPRT graduates accept employment in automotive machine shop/ race shops, automotive tuner/repair shops, aftermarket part

manufacturers/suppliers, professional racing teams and aftermarket tool manufacturers/suppliers.

Successful completion of both semesters is necessary to qualify for a certificate.

For students interested in furthering their education, these courses can be credited toward the Bachelor of Science in Applied Management (BSAM) degree.

ASSOCIATE OF APPLIED SCIENCE

Ranken is offering an Associate of Applied Science degree as a part of the evening program curriculum. You can earn your associate degree with a combination of Ranken's standard evening school courses as well as our new online courses. You can also transfer credit from other accredited technical training programs, or have your technical work experience evaluated for possible transfer credit. (30 technical credit hours required for graduation.)

For all General Education course requirements, please turn to page 87. For more information about the BSAM degree, please turn to page 90.

PROGRAM COURSES			Hours	Prerequisites
First or Second Semester	AHP2202	High Performance Engines	12	AMT associate degree from Ranken or
	AHP2220	High Performance Tuning	12	successful completion of the online course.
Total Technical Credit Hours for Certificate Completion			24	

COURSE DESCRIPTIONS

AHP2202 HIGH PERFORMANCE ENGINES

Contains training on the entire engine machining process. Starting from engine teardown and ending with assembly and dynamometer performance verification, students learn all of the required machining processes for rebuilding a stock type engine. Throughout the course, students also learn the math and science behind the development of a proper high performance power plant while also learning to assemble a high performance engine properly. They will be able to run a complete dyno test to find out how close they are to their desired performance. Twelve credit hours.

AHP2220 HIGH PERFORMANCE TUNING

This offers a highly interactive look at many of the engine performance and control components used in the high performance tuning industry. Intake and cylinder head air flow improvements such as increased valve size, porting, bigger throttle bodies and exhaust systems are among some of the topics covered. This course covers a wide variety of engine fuel and ignition control systems. The design and application of turbocharger and supercharger systems for gasoline and diesel engines will also be covered, along with nitrous and propane injection. Students learn carburetor modification and tuning and power train gearing and suspension systems. Twelve credit hours.

CONSTRUCTION  **DIVISION**

