

# Auto Restoration Technology Program

## Purpose Statement

The department of technology commits itself to developing whole persons through experiential problem solving and the systematic study of technology.

The department achieves this purpose when its students:

- Demonstrate awareness of how technology changes and interacts with society.
- Possess a professional orientation for employment or advanced programs, or develop vocational interests in technology.
- Have acquired technical skills and craftsmanship through systematic study, experiences with technological artifacts, and the solving of technical problems.

## Technology Major

McPherson College offers a unique degree program of authentic auto restoration technology emphasizing hands-on skills and historical research. This program results in a unique departmental blend of contemporary technology and traditional craftsmanship. The Bachelor of Science in Technology major has six different options from which to choose:

## Historic Automotive Technology Option

The goal of the Historic Automotive Technology option is to develop graduates who are prepared for professional pursuits in the area of automotive history and/or graduate study.

### Program objectives (Option I)

This program achieves its purposes when graduates:

- Demonstrate an understanding of the major technological systems of the automobile.
- Demonstrate an understanding of authentic antique automobile restoration materials, methods and techniques.
- Demonstrate proficiency in the use of the materials and tools necessary to complete authentic automobile restoration work.
- Demonstrate the attitudes, knowledge and skills necessary to pursue a successful career in antique automobile restoration.
- Possess knowledge of historical automotive research material sources, methods and techniques necessary to complete historically accurate automotive restorations.
- Demonstrate knowledge of the historical role of the automobile in modern society.
- Demonstrate knowledge of the role of the automobile in the history of transportation, technology and science.

## Requirements

### *Auto Restoration Technology Core Courses*

- TE 100** Intro to Restoration (2 hours)
- TE 141** Engine Rebuilding (4 hours)
- TE 145** Drive Train Rebuilding (4 hours)
- TE 152** Sheet Metal Restoration (4 hours)
- TE 162** Technical Woodworking (OR)
- TE 262** Machining Technology (3 hours)
- TE 202** Research & Documentation (2 hours)
- TE 271** Chassis Restoration (3 hours)
- TE 275** Automotive Paint Restoration (4 hours)
- TE 281** Automotive Trim (4 hours)
- TE 360** Electrical and Electronic Systems (4 hours)
- TE 385** Restoration Assembly Processes (4 hours)

### *History Core Courses*

- G-HI130** Introd. Mthds. For Hist. Analysis (3 hours)
- HI 205** History of the Automobile (3 hours)
- G-HI/TE 333** Technology & Society (3 hours)
- HI 410** Colloquium in Historiography (3 hours)
- \*HI 475** Senior Thesis (2 hours)

### *History Electives*

At least 6 credit hours drawn from the following list:

- AR/HI 245** The History of Automotive Design (3 hours)

- G-HI 150** American History since 1877 (3 hours)
- G-HI 220** Modern Europe (3 hours)
- G-HI 236** Topics in Social History (3 hours)
- G-HI 237** Topics in Political History (3 hours)
- HI 313** Medieval Europe (3 hours)
- HI 315** Early Modern Europe (3 hours)

## Automotive Restoration Management Option

The goal of the Automotive Restoration Management option is to develop graduates who are prepared for professional pursuits and/or graduate study.

### Program Objectives (Option II)

This program achieves its purposes when its graduates:

- Demonstrate an understanding of the major technological systems of the automobile.
- Demonstrate an understanding of authentic antique automobile restoration materials, methods and techniques.
- Demonstrate proficiency in the use of the materials and tools necessary to complete authentic automobile restoration work.
- Demonstrate the attitudes, knowledge and skills necessary to pursue a successful business career in antique automobile restoration.
- Capitalize on Automotive Restoration Technology program connections with automotive business to place students in productive internships.
- Demonstrate knowledge, understanding, and application of the principles, concepts, and tools in each key content area of their major.
- Perform research, analysis, and critical thinking necessary to integrate key content from various business disciplines and other dimensions of society.
- Perform effectively in groups.
- Persuasively communicate business-related ideas in a variety of media and settings.

### Requirements

#### *Automotive Restoration Technology Core*

- HI 205** History of the Automobile (3 hours)
  - TE 100** Intro to Restoration (2 hours)
  - TE 162** Technical Woodworking (OR)
  - TE 262** Machining Technology (3 hours)
  - TE 141** Engine Rebuilding (4 hours)
  - TE 145** Drive Train Rebuilding (4 hours)
  - TE 152** Sheet Metal Restoration (4 hours)
  - TE 202** Research & Documentation (2 hours)
  - TE 271** Chassis Restoration (3 hours)
  - TE 275** Automotive Paint Restoration (4 hours)
  - TE 281** Automotive Trim (4 hours)
  - TE 385** Restoration Assembly Processes (4 hours)
- 37 hours

#### *Business Management Courses*

- G-BA 101** Introduction to Business (3 hours)
  - EC 202** Survey of Economics (3 hours)
  - AC 205** Financial Accounting (3 hours)
  - AC 206** Managerial Accounting (3 hours)
  - BA 224** Principles of Management (3 hours)
  - BA 325** Financial Management I (3 hours)
  - BA 235** Small Business Management (3 hours)
  - BA 315** Business Law (3 hours)
  - BA 321** Marketing (3 hours)
  - \*BA 339** Human Resources Management (3 hours)
  - BA 375** Junior Seminar (1 hour)
  - \*BA 475** Business Strategy and Policy (3 hours)
- 34 hours

*71 hours in major*

## Automotive Communication Option

The goal of the Automotive Communications Major Option is to develop graduates who have the skills and technical knowledge to communicate effectively in a variety of media to an audience focused on automotive issues.

### Program Objectives (Option III)

This program achieves its purposes when its graduates:

- Demonstrate knowledge of methods and techniques necessary to complete and document historically accurate automotive restorations.
- Demonstrate knowledge of the historical role of the automobile in modern society and of historical automotive research material sources.
- Demonstrate oral and written communication skills necessary to pursue a successful career in automotive communication, publishing or other media.
- Design attractive, effective documents, graphics, and publications targeted at specific audiences.
- Understand the media of communication, including mass media and computer technologies.
- Make ethical choices in their professional lives.

### Requirements

#### *Automotive Restoration Technology Core Courses*

**HI 205** History of the Automobile (3 hours)  
**TE 100** Intro to Restoration (2 hours)  
**TE 162** Technical Woodworking (OR)  
**TE 262** Machining Technology (3 hours)  
**TE 141** Engine Rebuilding (4 hours)  
**TE 145** Drive Train Rebuilding (4 hours)  
**TE 152** Sheet Metal Restoration (4 hours)  
**TE 202** Research & Documentation (2 hours)  
**TE 271** Chassis Restoration (3 hours)  
**TE 275** Automotive Paint Restoration (4 hours)  
**TE 281** Automotive Trim (4 hours)  
**TE 385** Restoration Assembly Processes (4 hours)  
37 hours

#### *Communication Core Courses*

Students must complete the listed courses from the core communication curriculum and the listed courses from the multimedia communication emphasis.

#### *Communications Core*

**G-CM 120** Intro to Human Communication (3 hours)  
**CM 135** Journalism (3 hours)  
**G-CM 140** Public Speaking (3 hours)  
**CM 210** Multimedia Storytelling I (3 hours)  
**G-CM 221** Intercultural Communication (3 hours)  
**CM 305** Editing (OR)  
**CM 310** Public Relations (3 hours)  
**CM 315** Journalism Practica (3 hours)  
**CM 375** Junior Seminar (1 hour)  
**CM 388** Career Conn. in Communication (OR)  
**TE 388** Career Conn. In Technology (3 hours)  
**CM 475** Seminar in Communication (2 hours)  
**\*EN 313** Expository Writing (OR)  
**EN 420** Creative Writing (3 hours)  
30 hours

*67 hours in major*

## Automotive Restoration Design Technology Option

The Automotive Restoration Design Technology option is for the student who wishes to pursue a career in automotive art. This option will develop majors who possess the technical knowledge and artistic abilities necessary to execute a variety of art skills sensitively and intelligently, analyze and critique art, and relate the creative process to life in personally meaningful ways.

This degree option within the technology and art departments is oriented to meet the needs of students who (1) wish to develop and refine their aesthetic

values (2) plan for careers as automotive artists (3) plan to further their art education in graduate school.

## Program Objectives (Option IV)

This program achieves its purposes when its graduates:

- Demonstrate an understanding of the major technological systems of the automobile.
- Demonstrate an understanding of authentic antique automobile restoration materials, methods and techniques.
- Demonstrate proficiency in the use of the materials and tools necessary to complete authentic automobile restoration work.
- Possess knowledge of historical automotive research material sources, methods and techniques necessary to complete and document historically accurate automotive restorations.
- Demonstrate knowledge of the historical role of the automobile in modern society.
- Demonstrate knowledge of the role of the automobile in the history of transportation, technology and science.
- Demonstrate the attitudes, knowledge and skills necessary to pursue a successful career in automotive art using a variety of media.
- Demonstrate performance in a variety of art media.
- Demonstrate analysis and critique in verbal and written form.
- Demonstrate an understanding of design principles and elements.
- Demonstrate awareness of Western and non- Western cultural contributions to art.
- Demonstrate meaningful connections of art to life through the development of keen perceptual abilities.

## Requirements

### *Automotive Restoration Technology Core Courses*

**HI 205** History of the Automobile (3 hours)  
**TE 100** Intro to Restoration (2 hours)  
**TE 110** Technical Drawing/CAD (3 hours)  
**TE 141** Engine Rebuilding (4 hours)  
**TE 145** Drive Train Rebuilding (4 hours)  
**TE 152** Sheet Metal Restoration (4 hours)  
**TE 162** Technical Woodworking (OR)  
**TE 262** Machining Technology (3 hours)  
**TE 202** Research & Documentation (2 hours)  
**TE 271** Chassis Restoration (3 hours)  
**TE 275** Automotive Paint Restoration (4 hours)  
**TE 281** Automotive Trim (4 hours)  
**TE 385** Restoration Assembly Processes (4 hours)  
37 hour

### *Art Core Courses*

**G-AR 101** Drawing I (2 hours)  
**G-AR 102** Painting I (2 hours)  
**AR 103** Elementary Design (3 hours)  
**AR 202** Painting II (2 hours)  
**AR 203** Photography I (2 hours)  
**AR 230** Graphic Design I (3 hours)  
**AR/HI 245** The History of Automotive Design (3 hours)  
**G-AR 311** Art History II (4 hours)  
**AR 348** Intermedia (3 hours)  
**AR 475A** Senior Concentration (4 hours)  
38 hours

*69 hours in major*

### *Automotive Restoration Design Major Internship/Field experience (recommended):*

**TE 295/495** Field Experience (work experience in automotive Art/Design) (OR) (1 - 4 hours)  
**TE 388** Career Connections (Internship in automotive Art/Design) (1 - 12 hours)  
1-12 hours total

## Automotive Restoration Technology Option

The Automotive Restoration Technology option is for the student who intends to pursue the authentic restoration of vintage and classic vehicles and develop values of craftsmanship, with attention to detail and an emphasis on authenticity. Graduates will be able to reference a wide variety of processes, methods and will have research capabilities. Graduates will be able to understand the automobile as a technological system and understand its

development and role in the world.

## Program Objectives (Option V)

This program achieves its purposes when its graduates:

- Demonstrate an understanding of the major technological systems of the automobile.
- Demonstrate an understanding of authentic antique automobile restoration materials, methods and techniques.
- Possess knowledge of historical automotive research material sources, methods and techniques necessary to complete and document historically accurate automotive restorations.
- Demonstrate proficiency in the use of the materials and tools necessary to complete authentic automobile restoration work.
- Demonstrate the attitudes, knowledge and skills necessary to pursue a successful business career in antique automobile restoration.
- Demonstrate knowledge of the historical role of the automobile in modern society.
- Demonstrate knowledge of related and supporting scientific fields.

## Requirements

### *Automotive Restoration Technology Core Courses*

- HI 205** History of the Automobile (3 hours)
- TE 100** Intro to Restoration (2 hours)
- TE 141** Engine Rebuilding (4 hours)
- TE 145** Drive Train Restoration (4 hours)
- TE 152** Sheet Metal Restoration (4 hours)
- TE 162** Technical Woodworking (3 hours)
- TE 202** Research & Documentation (2 hours)
- TE 262** Machining Technology (3 hours)
- TE 271** Chassis Restoration (3 hours)
- TE 275** Automotive Paint Restoration (4 hours)
- TE 281** Automotive Trim (4 hours)
- TE 301** Materials and Processes (3 hours)
- TE 360** Electrical & Electronic Systems (4 hours)
- TE 375** Junior Seminar (1 hour)
- TE 385** Restoration Assembly Processes (4 hours)
- TE 475** Senior Project (4 hours)

*6 credit hours from the following upper-level courses:*

- TE 341** Advanced Engine Rebuilding (3 hours)
- TE 452** Advanced Sheet Metal Restoration (3 hours)
- TE 480** Advanced Automotive Paint Restoration (3 hours)
- TE 481** Applied Trim and Upholstery (3 hours)

*3 credit hours from the following courses:*

- TE 252** Vintage Panel Restoration (3 hours)
- TE 242** Re-Babbitting (spring - on demand) (3 hours)
- TE 353** Finishing Touches (3 hours)
- TE 380** Applied Diagnostics (3 hours)
- TE 388** Internship (3 hours)

*60 hours in major*

## Recommended Supporting Courses:

- AR/HI 245** The History of Automotive Design (3 hours)
- G-BA 101** Intro to Business (3 hours)
- G-CH 101** Principles of General Chemistry (4 hours)
- G-PH 215** General Physics (4 hours)
- TE 110** Engineering Drawing/CAD (3 hours)

## Motorcycle Restoration Technology Option

Motorcycle Restoration Technology is the option for the student who intends to pursue the authentic restoration of vintage and classic motorcycles and to help develop values of craftsmanship, with attention to detail and an emphasis on authenticity. Graduates will not only possess a wide range of knowledge of the processes necessary to complete the restoration but have the research skills to ensure an accurate and authentic restoration. Graduates will

understand the technical systems of the motorcycle as well as its role in society and the world of transportation.

## **Program Objectives (Option VI)**

This program achieves its purposes when its graduates:

- Demonstrate an understanding of the major technical systems of the motorcycle.
- Demonstrate an understanding of authentic antique and vintage motorcycle restoration materials, methods and techniques.
- Possess knowledge of historical motorcycle research material sources, methods and techniques necessary to complete and document historically accurate motorcycle restorations.
- Demonstrate proficiency in the use of the materials and tools necessary to complete authentic motorcycle restoration work.
- Demonstrate the attitudes, knowledge and skills necessary to pursue a successful business career in antique and vintage motorcycle restoration.
- Demonstrate knowledge of the historical role of the motorcycle in modern society.

## **Requirements**

**TE 206** Motorcycle History and American Society (3 hours)

**TE 100** Intro to Restoration (2 hours)

**TE 141** Engine Rebuilding (4 hours)

**TE 145** Drive Train Restoration (4 hours)

**TE 152** Sheet Metal Restoration (4 hours)

**TE 262** Machining Technology (3 hours)

**TE 271** Chassis Restoration (3 hours)

**TE 275** Automotive Paint Restoration (4 hours)

**TE 281** Automotive Trim (4 hours)

**TE 360** Electrical & Electronic Systems (4 hours)

**TE 385** Restoration Assembly Processes (4 hours)

**TE 341** Motorcycle Engines (3 hours)

**TE 371** Motorcycle Chassis & Drive Train (3 hours)

**TE 384** Motorcycle Assembly Processes (3 hours)

**TE 375** Junior Seminar (Restoration) (1 hours)

**TE 475** Senior Project (4 hour)

*Choice of one advanced course: 3 hours*

**TE 452** Advanced Sheet Metal Restoration - with Motorcycle Option

**TE 480** Advanced Paint - with Motorcycle Option

**TE 481** Applied Trim & Upholstery - with Motorcycle Option

*Choice of one of the following courses: 3 hours*

**TE 353** Finishing Touches (3)

**TE 301** Materials and Processes (3)

**TE 380** Applied Diagnostics (3)

**TE 388** Internship

*61 hours in major*