

## Technology of Mathematics and Science

### TECH 109

#### Technical Mathematics I

*Prerequisite: High school algebra with a C or better*

4 lectures per week: 4 hrs credit

This course is a study of beginning to intermediate algebra with right angle trigonometry. Topics for study are based upon application to technical subjects. Some of the topics are algebraic operations, factoring, functions, systems of equations, quadratics, and vectors.

## Theatre

### THTRE 101 (IAI: FI 907)

#### Understanding Theatre

*Prerequisite: Placement into ENG 099 or higher*

3 lectures per week: 3 hrs credit

This course is a survey of theatre arts including a study of aesthetic and dramatic principles in selected plays, analysis of representative theatrical forms for cultural and social significance, critiques of theatre performances, and an overview of stage formats and technology.

### THTRE 111 (IAI:TA 914)

#### Fundamentals of Acting

*Prerequisite: Placement into ENG 099 or higher*

3 lectures per week: 3 hrs credit

This is a beginning course in acting. A proper balance of theory and actual practice is maintained to develop both inner and outer acting techniques. An attempt is made to relate acting to good plays and to play production.

## Tool and Die Making

### TOOL 101

#### Tool and Die Processes

*Prerequisite: None*

2 lectures per week: 2 hrs credit

This course introduces students to tool, die and stamping fundamentals. Topics specifically covered include bending, forming, stretching, drawing, and coining operations of sheet metal. Additionally, sheet metal stamping processes and their components are discussed.

### TOOL 102

#### Tool and Die Maintenance

*Prerequisite: None*

2 lectures per week: 2 hrs credit

This course introduces students to tool, die, and stamping maintenance fundamentals. Topics specifically covered include troubleshooting techniques, analytical methods, and process optimization for stamping machinery and the associated dies.

## Welding

### WELD 101

#### Principles of Flat Welding

*Prerequisite: None*

2 lectures per week: 2 hrs credit

This course covers basic welding fundamentals related to arc and oxy-acetylene welding theory and practice, AC and DC welding equipment, and applications that position welding techniques, arc welding electrodes, and ferrous metal identification.

### WELD 102

#### Horizontal Welding and Brazing

*Prerequisite: WELD 101*

2 lectures per week: 2 hrs credit

This course expands arc and oxyacetylene skills. Topics include oxyacetylene cutting equipment and applications, arc and carbon arc cutting, soldering, brazing, inspection and testing of welding, metal identification and welding in flat and horizontal positions.

### WELD 103

#### Metal Inert and Vertical Welding

*Prerequisite: WELD 102*

2 lectures per week: 2 hrs credit

Students develop an understanding of and manipulative skills needed with gas metal arc welding (GMAW) equipment. Topics include GMAW welding equipment, MIG, special welding processes, mechanical testing of welds and welding in flat, horizontal and vertical positions (SMAW Shielded Metal Arc Welding).

## **WELD 104**

### **Tungsten Inert and Overhead Welding**

*Prerequisite:* WELD 103

2 lectures per week: 2 hrs credit

This course increases students' welding background by acquainting them with gas tungsten arc welding, automatic welding and cutting equipment, special cutting processes.

## **WELD 105**

### **AWS Structural Certification**

*Prerequisite:* WELD 104

2 lectures per week: 2 hrs credit

This course is designed for persons experienced in all-position welding who wish to become certified to weld stress structures. All welding test procedures conform to American Welding Society standards. Though test specimens are prepared in class, passing of the course is not contingent upon whether or not the specimens are sent to a materials testing laboratory for analysis or the results of the analysis. However, if the student requests certification and pays the required fee, test specimens can be sent to a local materials testing laboratory where the mechanical tests will be performed and from where the welder certification papers may be issued.

## **WELD 106**

### **Pipe and Pressure Vessel Certification**

*Prerequisite:* WELD 105

2 lectures per week: 2 hrs credit

This course prepares students for certification in the most advanced stage of welding. Emphasis is placed on welding a vessel or pipe which will be used for a high pressure application.

## **WELD 201**

### **Advanced Gas Metal Arc Welding**

*Prerequisite:* WELD 103

2 lectures per week: 2 hrs credit

Advanced gas metal arc welding techniques are taught. Topics include metal transfer, types of equipment and supplies, equipment set-up, and troubleshooting.

## **WELD 202**

### **Advanced Gas Tungsten Arc Welding**

*Prerequisite:* WELD 104

2 lectures per week: 2 hrs credit (may be repeated 3 times)

Advanced gas tungsten arc welding techniques are taught. Topics include types of equipment and supplies, equipment set-up, and open-root welding on plate and pipe.