

# ALTERNATIVE ENERGY (ALET)

## ALET 111, INTRODUCTION TO ALTERNATIVE ENERGY 3 (4)

This course introduces the student to alternative energy sources including solar, wind power, geothermal, bio-fuels, hydrogen generation and fuel cell applications. Cost effectiveness and overall fuel efficiency will be examined, as evaluated in electrical and thermal units. Laboratory activities will demonstrate alternative energy concepts. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1

**Typically Offered:** Fall and Spring Semesters

## ALET 112, ALTERNATIVE ENERGY MECHANICAL SYSTEMS 4 (6)

This course examines the different mechanical systems used in alternative energy power generation. Included are discussions of wind turbine components, passive and active solar components, precision measurement, blueprints, hand and power tools, torque, mechanical drives, alignment, bearings, lubrication, rigging, and ladder safety. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1

**Course Entry Requirement(s):** Prerequisite: ALET 111; Concurrent: MTHM 121

**Typically Offered:** Fall and Spring Semesters

## ALET 113, OSHA 10 CONSTRUCTION SAFETY 1 (1)

The OSHA 10 Hour Construction class provides entry level general awareness in recognizing and preventing hazards on a construction site. Course is instructed by an OSHA recognized instructor. Successful participants will be awarded an OSHA 10 card for construction safety.

**General Education:** IN1

**Typically Offered:** Spring Semester

## ALET 220, WIND TURBINE TECHNOLOGY I 3 (5)

The student will study the operation, installation and maintenance of small wind turbine systems. This class is designed to give the student a theoretical and practical basis for the application of Wind Turbine systems. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1

**Course Entry Requirement(s):** Prerequisite: ALET 112

**Typically Offered:** Fall Semester

## ALET 221, WIND TURBINE TECHNOLOGY II 3 (5)

This course is a continuation and practice of the concepts and skills learned in ALET 220 - Wind Turbine Technology I. The student will study the application and installation of utility scale wind turbine systems. This class is designed to give the student practical experience in the application, installation and maintenance of Wind Turbine Systems. Project management and team based skills will be emphasized. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1

**Course Entry Requirement(s):** Prerequisite: ALET 220

**Typically Offered:** Spring Semester

## ALET 222, SOLAR THERMAL SYSTEMS 4 (6)

This course explores the operation, design, installation, maintenance, performance estimating, site selection considerations and troubleshooting of solar thermal systems for consumer and commercial applications. The course covers heat stores, solar circuits, solar collators, controllers, heating systems, dimensioning; heat exchangers, economic considerations, and safety.

**General Education:** IN1

**Course Entry Requirement(s):** Prerequisite: ALET 111

## ALET 223, PHOTOVOLTAIC SYSTEMS 4 (6)

This course explores the design, installation and use of Solar-Photovoltaic power systems for consumer and commercial applications. The course covers theory and hands-on lab experience required to assess, install, maintain, and troubleshoot solar-photovoltaic electrical generating systems. The course prepares students for the North American Board of Certified Energy Practitioners (NABCEP) Photovoltaic (PV) Entry Level Exam. (A special fee will be assessed.)

**General Education:** IN1

**Course Entry Requirement(s):** Prerequisite: ALET 111

## ALET 287, WORK BASED LEARNING I - ALET 1-3 (1)

This course provides supervised work experience with approved employer(s) in an area related to the student's program. Emphasis is placed on integrating classroom learning with work experience. Students will be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. Activities are coordinated and evaluated by college personnel. Course will be graded on the S/U basis.

**Typically Offered:** Offer as required

## ALET 288, WORK-BASED LEARNING II - ALET 1-3 (1)

This course provides supervised work experience building on experience in Work-Based Learning I with approved employer(s) in an area related to the students program. Emphasis is placed on integrating classroom learning with work experience. Students will be able to evaluate career selection, demonstrate employability skills and satisfactorily perform work related competencies. Activities are coordinated and evaluated by college personnel. Course will be graded on the S/U basis.

**Course Entry Requirement(s):** Prerequisite: ALET 287

**Typically Offered:** Offer as required

## ALET 289, WORK-BASED LEARNING III - ALET 1-3 (1)

This course provides supervised work experience building on experience in work-based learning II with approved employer(s) in an area related to the student's program. Emphasis is placed on integrating classroom learning with work experience. Students will be able to evaluate career work-related competencies. Activities are coordinated and evaluated by college personnel. Course will be graded on the S/U basis.

**Course Entry Requirement(s):** Prerequisite: ALET 288

**Typically Offered:** Offer as required

## ALET 299, INDIVIDUALIZED STUDIES IN ALTERNATIVE ENERGY 1-2 (1)

An in-depth study in areas of alternative energy presented by discussions and/or individual research and reading. Topics will vary. Repeatable up to a total of four (4) credit hours. Prerequisites: Second-year standing and divisional approval.

**Typically Offered:** Offer as required