Northwest Arkansas Community College
(Workforce Division)

Discipline Code
BIKE

Course Number
1013

Course Title
Basic Bicycle Mechanics

Catalog Description
This course covers basic, yet key aspects of bicycle repair. Students will learn the important aspects of tire and tube repair, including modern tubeless systems. Students will also learn the selection and installation of rider touch points and common accessories of a bicycle.

Prerequisites
None. Enrolled in all BIKE 1000 level courses. BIKE 1003, 1013, 1023, 1033, 1043 advised as co-requisites.

Credit Hours
3 credit hours

Contact hours
45 lecture / lab contact hours

Load hours
3 load hours

Semesters Offered
Fall, Spring & Summer

ACTS Equivalent
N/A

Grade Mode
A-F

Learning Outcomes
Students completing this course will:

- Competently demonstrate safe, observant, and efficient tire/tube replacement.
- Predict and discover most common causes for flat tires, how they can be mitigated, and the most effective repair.
- Confidently set up successful tubeless tire installations.
- Assess bicycle sizing and perform basic fit of bicycle to a rider.
- Competently demonstrate selecting, setting, and applying torque to fasteners using a torque wrench.
- Adapt to challenges in installing common accessories and components.

BIEA (Bicycle Industry Employers' Association) Program Outcomes Supported

- Student will demonstrate ability to assemble and repair all types of bicycles currently in use.
- Apply foundational skills and knowledge to continuing professional development in response to changes in bicycle technology.
- Apply knowledge of systems and measures to find solutions to novel repair situations.
- Student is able to provide solutions that balance business, customer, and professional goals.
- Demonstrate ethical conduct in all job and personal cycling activities that maintains an image appropriate for the profession.

General Education Outcomes Supported

- Students develop higher order thinking skills.
- Students can write clear, coherent, well-organized documents, substantially free of errors.
- Students develop effective oral communication skills.
- Students can achieve mathematical literacy.
- Students develop information literacy.

Standard Practices

Topics

- Pneumatics
- Rider Interfaces: Handlebar/Stem/Post/Saddle
- Rider Fit and Biomechanics
- Add-on Accessories

Learning activities

- Courses must, at a minimum, cover the core learning outcomes for each topic. Faculty may add to these outcomes, but may not omit any of them.
- Laboratory exercises should average between 2-3 hours each week and include all applicable elements of the Barnett's Bicycle Industry Manual modules for the lesson and outcome for assessment.
- Lab safety and equipment orientation and enforcement of safety protocols is the responsibility of each faculty. A standard lab safety PowerPoint will be provided to faculty for training. Scoring 100% on a mandatory department-provided lab safety quiz is required before students may participate in lab.
- Since all general education outcomes are supported by specific course and program outcomes, all instructors should include learning activities that develop these outcomes in their courses and identify them in course syllabi. Instructors should describe how these activities will be evaluated in their course syllabi and/or reflected in their gradebooks.

Assessments

Written exams, quizzes, and class assignments; class participation; lab-based performance profiles and competency-based demonstration of mastery, and digital work including, but not limited to, group work, discussion, and projects done in virtual environment and/or college's LMS.

Grading guidelines

- Students will score 80% 'Satisfactory' or higher on rubric concerning physical demonstration of tire and tube replacement.
- Students will score 80% 'Satisfactory' or higher on rubric concerning physical demonstration of tubeless tire installation.

- Students will score 80% ‘Satisfactory’ or higher on rubric evaluating an essay on tire/tube common causes of failure and best practices.
- Students will score 80% ‘Satisfactory’ or higher on rubric concerning physical demonstration of bicycle sizing best practices.
- Students will score 80% ‘Satisfactory’ or higher on rubric concerning physical demonstration of installation of selected accessories and aftermarket components.