

## Washtenaw Community College Comprehensive Report

### BIO 110 Introduction to Exercise Science Effective Term: Winter 2020

#### Course Cover

**Division:** Math, Science and Engineering Tech

**Department:** Life Sciences

**Discipline:** Biology

**Course Number:** 110

**Org Number:** 12100

**Full Course Title:** Introduction to Exercise Science

**Transcript Title:** Intro. to Exercise Science

**Is Consultation with other department(s) required:** No

**Publish in the Following:** College Catalog , Time Schedule , Web Page

**Reason for Submission:** Three Year Review / Assessment Report

**Change Information:**

**Consultation with all departments affected by this course is required.**

**Outcomes/Assessment**

**Objectives/Evaluation**

**Other:**

**Rationale:** 3-year review: changes suggested by assessment report and from feedback from students.

**Proposed Start Semester:** Fall 2019

**Course Description:** In this course, students will be introduced to the field of exercise science. The areas of exercise physiology, motor control, biomechanics, athletic training, and exercise psychology will be presented. Careers open to exercise science students will be explored.

#### Course Credit Hours

**Variable hours:** No

**Credits:** 3

**Lecture Hours: Instructor:** 45 **Student:** 45

**Lab: Instructor:** 0 **Student:** 0

**Clinical: Instructor:** 0 **Student:** 0

**Total Contact Hours: Instructor:** 45 **Student:** 45

**Repeatable for Credit:** NO

**Grading Methods:** Letter Grades

Audit

**Are lectures, labs, or clinicals offered as separate sections?:** NO (same sections)

#### College-Level Reading and Writing

College-level Reading & Writing

#### College-Level Math

#### Requisites

#### General Education

MACRAO

MACRAO Science & Math

**General Education Area 4 - Natural Science**

Assoc in Applied Sci - Area 4

Assoc in Science - Area 4

Assoc in Arts - Area 4

**Michigan Transfer Agreement - MTA**

MTA Science (no lab)

**Request Course Transfer****Proposed For:**

Central Michigan University  
College for Creative Studies  
Eastern Michigan University  
Ferris State University  
Grand Valley State University  
Jackson Community College  
Kendall School of Design (Ferris)  
Lawrence Tech  
Michigan State University  
Oakland University  
University of Detroit - Mercy  
University of Michigan  
Wayne State University  
Western Michigan University

**Student Learning Outcomes**

1. Identify basic principles of exercise physiology.

**Assessment 1**

Assessment Tool: Departmentally-designed questions

Assessment Date: Winter 2022

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections (Only one section is offered in each semester.)

Number students to be assessed: All

How the assessment will be scored: Assessment will be embedded in unit 1 exam(s). Questions will be randomly chosen from a pool of questions that address outcome 1.

Standard of success to be used for this assessment: At least 70% of the students who take exam 1 will score at least 70% on the questions from this content area.

Who will score and analyze the data: Life Sciences Faculty

2. Recognize the basic principles of motor learning.

**Assessment 1**

Assessment Tool: Departmentally-designed questions

Assessment Date: Winter 2022

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections (Only one section is offered in each semester.)

Number students to be assessed: All

How the assessment will be scored: Assessment will be embedded in unit exam #3. Questions will be randomly chosen from a pool of questions that address the motor learning outcome.

Standard of success to be used for this assessment: At least 70% of the students who take exam 1 will score at least 70% on the questions from this content area.

Who will score and analyze the data: Life Science Faculty

3. Identify the basic principles of biomechanics.

**Assessment 1**

Assessment Tool: Departmentally-designed questions

Assessment Date: Winter 2022

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections (Only one section is offered in each semester.)

Number students to be assessed: All

How the assessment will be scored: Assessment will be embedded in unit 3 exam(s). Questions will be randomly selected from a pool of questions that address the biomechanics outcome.

Standard of success to be used for this assessment: At least 70% of the students who take exam 2 will score at least 70% on the questions from this content area.

Who will score and analyze the data: Life Science Faculty

4. Create a career plan with multiple endpoints by identifying career options.

**Assessment 1**

Assessment Tool: Career Plan

Assessment Date: Winter 2022

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections (Only one section is offered in each semester.)

Number students to be assessed: All submitted career plans

How the assessment will be scored: Career Plans are graded based on a rubric (attached).

Standard of success to be used for this assessment: At least 70% of students will score above 70% on the career plan assignment.

Who will score and analyze the data: Life Science Faculty

5. Recognize the basic principles of athletic training

**Assessment 1**

Assessment Tool: Unit exam on Athletic Training

Assessment Date: Winter 2022

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All

How the assessment will be scored: Assessment will be embedded in Unit 2 Exam covering athletic training.

Standard of success to be used for this assessment: At least 70% of students who take the exam will score 70% or better on the exam as well as on selected questions.

Who will score and analyze the data: Life Sciences Faculty

**Course Objectives**

1. Use correct terminology when referring to movements, body parts, and metabolic reactions relevant to exercise physiology.
2. Identify regulatory enzymes and their agonists in metabolic reactions.
3. Identify and/or explain changes that occur during a single bout of exercise and in response to chronic exercise training.
4. Identify the critical parts of a motor unit.
5. Distinguish between aerobic and anaerobic processes.
6. Explain the contributions of each metabolic pathway to exercise energy supply and how these contributions change over time.
7. Identify the different skeletal muscle fiber types and their respective contributions to movement.
8. Identify cardiovascular and respiratory contributions and adaptations to acute and chronic exercise.
9. Use correct terminology when referring to movements, anatomical landmarks, and theoretical constructs relevant to motor learning.
10. Identify and/or explain the function of a motor unit.
11. Identify and/or explain neural changes that occur during a single skilled movement and in response to chronic skill training.
12. Use correct terminology when referring to movements, anatomical landmarks, and physics principles that govern the mechanics of movement.

13. Identify and use the correct mathematical equation to solve various movement problems.
14. Identify and/or explain mechanical changes that occur during a single skilled movement and in response to chronic skill training.
15. Create a detailed career plan with alternate plans for various scenarios.
16. Interview or shadow individuals in relevant careers.
17. Create and present a PowerPoint presentation explaining the requirements, qualifications, compensation, lifestyle, and academic training pathways related to a particular career.

## New Resources for Course

### Course Textbooks/Resources

#### Textbooks

Potteiger, JA. *ACSM's Introduction to Exercise Science*, 3rd ed. Baltimore: Wolters Kluwer/Lippincott Williams & Wilkins, 2017, ISBN: 1496339614.

#### Manuals

Bowden and Bowden. An Illustrated Atlas of the Skeletal Muscles, Morton ISBN 10: 1617311723, 01-01-2015

#### Periodicals

#### Software

### Equipment/Facilities

Level I classroom

Other: Exercise Science Laboratory (LA235)

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
<b>Faculty Preparer:</b> <i>Marvin Boluyt</i>	<i>Faculty Preparer</i>	<i>Jun 26, 2019</i>
<b>Department Chair/Area Director:</b> <i>Anne Heise</i>	<i>Recommend Approval</i>	<i>Jul 16, 2019</i>
<b>Dean:</b> <i>Kimberly Jones</i>	<i>Recommend Approval</i>	<i>Jul 25, 2019</i>
<b>Curriculum Committee Chair:</b> <i>Lisa Veasey</i>	<i>Recommend Approval</i>	<i>Aug 06, 2019</i>
<b>Assessment Committee Chair:</b> <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Aug 19, 2019</i>
<b>Vice President for Instruction:</b> <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Aug 19, 2019</i>