



**MERCER**  
COUNTY COMMUNITY COLLEGE

## COURSE OUTLINE

<b>Course Number</b>	<b>Course Title</b>	<b>Credits</b>
HPE 242	Exercise Measurement & Prescription	3

<b>Hours:</b> Lecture/Lab/Other 2/3/0	<b>Co- or Pre-requisite</b> BIO 104 and HPE 241	<b>Implementation</b> Semester & Year Spring 2022
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**Catalog description:**

This course will emphasize the development of the protocol knowledge and skills necessary for appropriate physical fitness assessments and exercise prescriptions. These assessments and prescriptions will address the physical fitness needs of generally healthy populations; those with medical protocol considerations; and athletic populations.

<b><u>General Education Category:</u></b> Not GenEd	<b><u>Course coordinator:</u></b> Mike DeAngelis, MS CSCS, 609-570-3758, deangelm@mccc.edu
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**Required texts & Other materials:**

**Required Text:**

*Advanced Fitness Assessment and Exercise Prescription*, V. Heyward; Human Kinetics

**Other Helpful Text:**

*Essentials of Strength Training and Conditioning*, D. Baechle and R. Earle; Human Kinetics

**Course Student Learning Outcomes (SLO):**

**Upon Successful Completion of the course, the student will be able to...**

1. describe, discuss, design, and demonstrate the knowledge and skills to perform appropriate initial consultations, and pre-training assessments (including Functional Movement Screen) for generally healthy populations, as well as special populations; (ILG 1,3,11, PLO 3,4,5,6,7)
2. analyze and interpret the results of initial consultation and pre-training assessments and make appropriate recommendations; (ILG 11, PLO 3,6,7)
3. describe and discuss the importance of goal setting and the ability to demonstrate the principles of goal setting; (ILG 1, PLO 3)
4. discuss and demonstrate the skills associated with the principles of flexibility;
5. identify, discuss, and demonstrate the principles of cardiovascular and resistance assessment and training; (ILG 3, PLO 3,5,6,7)
6. discuss and demonstrate the knowledge and skills associated with the principles of program design; (ILG 3,11, PLO 3,6,7)
7. demonstrate the skills necessary to conduct all components of a training session for generally healthy individuals, as well as those that have special considerations. (ILG 1,3, PLO 3,4,5,6,7)

## **Course-specific Institutional Learning Goals (ILG):**

**Institutional Learning Goal 1. Written and Oral Communication in English.** Students will communicate effectively in both speech and writing.

**Institutional Learning Goal 3. Science.** Students will use the scientific method of inquiry, through the acquisition of scientific knowledge.

**Institutional Learning Goal 11. Critical Thinking:** Students will use critical thinking skills understand, analyze, or apply information or solve problems.

## **Program Learning Outcomes for Exercise Science A.S. (PLO)**

1. Succeed academically upon transfer to a baccalaureate program related to exercise science;
2. Secure employment in the field of exercise science;
3. Demonstrate the knowledge, skills, and ethical integrity necessary to succeed and grow as a health, wellness, fitness, and/or athletic performance professional;
4. Apply scientific and physiological principles to the promotion and enhancement of health, wellness, fitness, and athletic performance;
5. Assess and evaluate an individual's health and performance;
6. Prescribe workouts for generally healthy individuals as well as for athletic populations and those with special considerations;
7. Conduct safe and effective training sessions with generally healthy individuals.

## **Units of study in detail – Unit Student Learning Outcomes:**

Unit #1 – Orientation to the principles of the Initial Consultation (SLO: 1 & 2)

1. identify, discuss, and distinguish the illnesses and diseases prevalent in our society today;
2. identify, describe, and discuss the purpose of conducting the initial consultation;
3. identify, and discuss each of the forms and steps necessary for conducting the initial consultation;
4. develop a client folder;
5. demonstrate the ability to conduct all steps of an initial consultation;
6. describe and illustrate the knowledge of safety and emergency procedures as they apply to physical fitness assessments;
7. perform, analyze, and interpret an initial client consultation and health risk appraisal;
8. make the appropriate recommendations based on the data gathered from the initial consultation and health risk appraisal.

Unit #2 – Orientation to the Principles of Pre-training Assessment (SLOs: 1 – 3)

1. discuss and distinguish the purpose for appropriate physical fitness assessments and exercise prescriptions for generally healthy populations, those with cardiac concerns, diabetes, hypertension, low back ailments, patella femoral syndrome, shoulder bursitis, and shoulder impingements;
2. describe, perform, analyze, and interpret appropriate biometric assessments (Resting Heart Rate, Resting Blood Pressure, Body Weight, Girth Measurements, and Body Composition) on generally healthy populations, individuals with medical protocol considerations, as well as athletic populations;
3. design appropriate assessment protocols for generally healthy populations, individuals with medical protocol considerations, as well as athletic populations;
4. describe, perform, analyze, interpret, and demonstrate the skills necessary to perform a Functional Movement Screen (FMS);
5. from the make the appropriate recommendations based on the data gathered FMS;

6. describe, perform, analyze, interpret and demonstrate the skill necessary for appropriate cardiovascular fitness assessments (Step Test, Rockport Walk Test/1 Mile Walk Test, 12 Minutes Run, 1 Mile Run, 1.5 mile Run, and Est. VO<sub>2</sub>max), on generally healthy populations, individuals with medical protocol considerations, as well as athletic populations;
7. describe perform, analyze, and interpret appropriate muscular strength and endurance assessments on generally healthy populations, individuals with medical protocol considerations, as well as athletic populations;
8. perform, analyze, and interpret speed, agility, reaction time, and power assessments on athletic populations;
9. discuss the importance of and principles of goal setting.

Unit #3 – Orientation to the Principles of Program Design (SLOs: 2, 4, 5, 6)

1. identify and discuss the importance and principles of warm-up and cool down;
2. identify, distinguish, and discuss modes of cardiovascular training and the application of the FITT formula;
3. identify, distinguish, demonstrate, and discuss cardiovascular training philosophies (including, but not limited to, Pace training, Interval training, Fartlek training, etc.);
4. identify, distinguish, and discuss the modes of resistance training (including but not limited to bars, bells, body weight, chains, kegs, kettlebells, manual resistance, medicine balls, ropes, sandbags, suspension training, etc.)
5. distinguish and discuss the application of the FITT formula to resistance training;
6. identify, list, discuss, and distinguish the principles of various resistance training philosophies (including, but not limited to, linear periodization, non-linear periodization, German Volume Training, 5-3-1 Training, 50 Caliper Program, Muscle Confusion, etc.);
7. demonstrate the ability to design resistance training programs utilizing various training philosophies based on the physical fitness assessments, health history, personal goals, and experience level.;

Unit #4 – Principles of Conducting a Training Session (SLOs: 3, 5, 6, 7)

1. identify, distinguish, and discuss the safety precautions necessary for conducting cardiovascular and resistance training sessions;
2. discuss and demonstrate appropriate spotting techniques for various resistance exercises;
3. apply the principles of warm-up and demonstrate/conduct appropriate warm-up (including determining appropriate exercise heart rate zone, rapport/information investigation to determine any necessary workout modifications due to client current physical and mental status);
4. apply the principles of workout design and demonstrate the ability to design, conduct, and modify a workout based on various goals, needs, and/or equipment/modality availability;
5. apply the principles of cooldown and demonstrate/conduct appropriate cooldown;
6. identify, distinguish, discuss and demonstrate the principles of dynamic flexibility, static flexibility, and PNF flexibility through manual, passive, and guided activities.

**Evaluation of student learning:**

- Written Assignments (2) -- 20% (50 pts ea. = 100 pts) o The students will be given particular protocols/scenarios pertinent to specific course topics with which they will be required to combine their research with the knowledge provided through the course; evaluate the situation and any applicable data; and support their recommendation for action. (SLO 1-7)

- Laboratory Work (10) – 40% (20 pts ea. = 200 pts) o Labs will be a practical application of specific topics addressed in class. They will require the student to perform an appropriate assessment; tabulate and analyze the data; interpret it; and make suggestions for improvement. Students will be required to assess, design, and implement appropriate programs (based on their discoveries) for a client. (SLO 1-7)
- Mid-term Examination – 20% (100 pts) o The Mid-term will be a subjective and objective tool that will require the student to analyze, define, describe, design, discover, explain, identify, list, and make recommendations appropriate to the subject matter up to the mid-term. (SLO 1-7)
- Final Examination – 20% (100 pts) o The Final will assess the students learning for the entire semester in the same format as the Mid-term. (SLO 1-7)