Instructor: Kari Grossklaus, M.S., ACSM-RCEP
Office Hours: M 9:30 – 10:00
Email: kgrosskl@carrollu.edu
Meeting Times and Locations: Monday 10-11:50, LL17 and Lab LL02
Prerequisites: EXP 512
Credit Hours: 2

Course Description:
This course is a continuation of EXP 512. Students will practice and refine their clinical skills in ECG interpretation. This course will provide a more in-depth approach in understanding the underlying causes as well as signs and symptoms associated with common arrhythmias. Includes lecture, investigation of documented ECG case studies, extensive ECG rhythm strip interpretation, and the incorporation of ACLS megacode simulations.

Rationale:
An understanding of cardiac physiology and electrocardiography is an important aspect of clinical exercise physiology. Emphasis in this course is focused on understanding and interpreting 12-lead ECG tracings both at rest and during exercise in addition to other physiological measures such as blood pressure and heart rate.

Required texts:

Other Useful Texts:
*David, D. How to quickly and accurately master ECG. J.B. Lippincott Co.*

Course objectives:
Upon successful completion of this course, a student should be able to:
1. Demonstrate knowledge of heart anatomy and the cardiac cycle as they relate to the electrical conduction pathway.
2. Correctly interpret and recognize the most common (sinus, atrial, ventricular, paced, unusual beats, AV blocks) cardiac rhythm abnormalities.
3. Correctly interpret cardiac rhythm abnormalities with exercise.
4. Correctly interpret the physiological results (HR, BP, functional capacity, RPP, symptomology) of a GXT.
5. Demonstrate knowledge of cardiac medications and their effects on resting and exercise ECG and their chronic and emergency use.
6. Critically analyze patient history, medications, and ECG findings and make clinical exercise/testing recommendations.

Course requirements:

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<th>Requirement</th>
<th>Articulated course objectives</th>
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<tr>
<td>Quizzes and Assignments</td>
<td>20% 1-6</td>
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<tr>
<td>Written exams</td>
<td>40% 1-6</td>
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<tr>
<td>Case studies</td>
<td>20% 1-6</td>
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<tr>
<td>Oral Rhythm Identification</td>
<td>20% 2-3</td>
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Assessment of students

Quizzes and Assignments (20%). This grade is based on the following criteria:

- In-class worksheets/assignments.
  - In-class worksheets/assignments may be randomly collected and graded.
- 5 Quizzes will cover assigned reading materials.
- Actively participate in class discussions and activities.

Note. Excessive absence as determined by the instructor and/or poor in-class performance will result in points being deducted from this component of the course. If a student misses a lecture, they are personally responsible for getting the information covered in class. If a student is dealing with extenuating circumstances, then it is the student’s responsibility to personally meet with the instructor as soon as possible (before the assigned due date) to discuss the matter and make alternative arrangements. Alternative arrangements/assignments are at the discretion of the course instructor.

Assignments. For a general description of assignments and due dates, please refer to the course outline. Keep in mind that the course outline is tentative and more detailed instructions will be provided for each separate assignment. All course work must be computer-generated and stapled together (if applicable). Hand-written pages will NOT be accepted unless explicitly
noted in the instructions. Please allow a minimum of 14 business days to grade submitted assignments.

Policy on late work.
• Late work is not accepted.

Exams (40%). In this class, students will have one written exam (20% each) and a cumulative final exam (20%). The format may include true/false questions, multiple-choice questions, matching oral, and short answer. Make-up exams for planned absences are not permitted; however, refer to section on university-approved excused absences and extenuating circumstances if applicable.

Case studies (20%). Students will complete 7 graded ECG case studies. Students will complete each case study individually in class. Case studies will be graded individually and then discussed as a group.

Standards for written work. The following criteria will be used to evaluate all submitted written work:

1. Independent research and inquiry, incorporating the appropriate level of evidence from credible resources. This includes proper in text citation and reference page.
2. Ability to compare and contrast/critique research findings and relevant course content, can make direct connections based on the assignment.
3. Synthesis and discussion of knowledge from various sources to define a conclusion, and then reflect and apply the information appropriately based on the assignment.
4. Overall ability to clearly articulate ideas and focus your writing to address the research question or inquiry.
5. Overall organization and completeness of work based on written directions as well as in-class verbal instructions.
6. Demonstration of proper English, including accurate spelling, grammar, and punctuation.

ACLS Megacode Performance (20%). Students will complete ACLS megacode roles in preparation for the ACLS certification. The final grade is based on the individual cumulative score for each team member role the student served in. All students will perform each role and receive a grade.
Dress. For skills checks and in-class practice skill checks, students should be dressed in casual pants/slacks (such as khakis, no jeans) and a polo shirt.

**To pass a skill check, students must achieve 84% of the total points available (or a B level).** The points achieved will be recorded with comments. If a student receives less than 84%, he/she may schedule one re-test, which will be scheduled at the lab instructor’s discretion. In this case both recorded scores will be averaged together in the grade book.

**Grading**

Your final grade will be based on the following set **cut-off percentages**:

- A = 100-91.00%
- B = 90.00-81.00%
- C = 80.99-73.00%
- D = 72.99-60.00%
- F = <60%

In general, assignments will be graded within 14 business days (~2 weeks) from the due date. All students will be graded using the same criteria and your final grade is determined based on points earned and the weighted percentage set in the course requirements.

To discuss or challenge a grade, the student will need to see the instructor during office hours. He or she must submit written documentation to support or justify his or her answers based on the course outline, textbook and lecture materials, instructional notes, check list, etc. If a student challenges a grade and it is reviewed, the revised score will be posted to the grade book even if it is a lower score.

**Statement of the right to modify course content**

The initial course outline is tentative. The instructor reserved the right to modify, amend or change the syllabus (course requirements, grading policy, etc.) and course outline as the curriculum and/or program require(s).

**Accommodation of special needs**

Students with documented disabilities, who may need accommodations (or any student considering obtaining documentation), should make an appointment with Martha Bledsoe, Director of Services for Students for Disabilities, no later than the first week of class. She can be reached by calling 262-524-7335, mbledsoe@carrollu.edu.
Academic honesty and due notification

The Carroll University Academic Integrity Policy is located in your student handbook (pages 21-26). I encourage you to familiarize yourself with it. If a student violates this policy in any way, I reserve the right to impose a sanction of failure on the assignment/assessment and/or failure in the course.

If you have questions about appropriate citation, when group collaboration is appropriate, or other related issues, please ask.
## EXP – 513 Advanced Electrocardiography – Course Outline

### Spring 2017

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Assignments</th>
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<tr>
<td>1/30</td>
<td>Review rate, rhythm, and conduction</td>
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<tr>
<td>2/06</td>
<td>Axis</td>
<td>Ch 8 - Dunbar</td>
<td>Quiz #1 (Rhythms and ECG axis)</td>
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<tr>
<td>2/13</td>
<td>Intraventricular Conduction Abnormalities</td>
<td>Ch 10 - Dunbar</td>
<td>Quiz #1 (Rhythms and ECG axis)</td>
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<td>Ischemia and Infarcts</td>
<td>Ch 11 - Dunbar</td>
<td>ECG Case Study #1 - IVCD</td>
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<td>2/27</td>
<td>MI Identification practice and Chamber Hypertrophy</td>
<td>Ch 9 – Dunbar</td>
<td>Quiz #2 – MI/Ischemia; ECG Case Study #2 – MI/Ischemia</td>
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<td>3/06</td>
<td>Electrolyte Disorders</td>
<td>Ch 12 – Dunbar</td>
<td>Quiz 3 – Hypertrophy</td>
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<td>ECG Case Study #3 - Hypertrophy</td>
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<tr>
<td>3/20</td>
<td>Stress Testing</td>
<td>Ch 14 – Dunbar</td>
<td>ECG Case Study #4</td>
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<td>3/27</td>
<td>Pacemakers</td>
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<td>Quiz 4 – Anything goes!</td>
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<td>ECG Case Study #5</td>
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<td>4/03</td>
<td>12-Lead Interpretation Practice</td>
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<td>ECG Case Study #6</td>
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<td>4/10</td>
<td>ACLS</td>
<td>ACLS Manual</td>
<td>ECG Case Study #7</td>
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<td>4/17</td>
<td>ACLS Megacode Practice</td>
<td>ACLS Manual</td>
<td>Quiz #5 - ACLS</td>
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<td>4/24</td>
<td>ACLS Megacode Testing</td>
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<td>5/1</td>
<td>Final Exam</td>
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<td>Final Exam</td>
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