Carroll University
EXP 512: Electrocardiography
Course Syllabus
Fall 2017

Instructor:  Kari Grossklaus, MS, ACSM-RCEP
Email:  kgrosskl@carrollu.edu
Meeting Times and Locations:  Mon: 1:00-2:50 pm CGS LL17
Prerequisites:  None
Credits Hours:  2

Course description:
A concise summary of cardiac electrophysiology. Identification of normal and abnormal resting and exercise electrocardiograms (ECG). Effects of various physiological and pathological states as well as medications on resting and exercise ECG will be discussed. Includes lecture, investigation of documented ECG case studies, and practice in interpreting 6-second ECG rhythm strips.

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 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:
* Davis, 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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Articulated course objectives</th>
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<tbody>
<tr>
<td>Class preparation and professionalism</td>
<td>15% 1-6</td>
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<tr>
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<td>Homework, quizzes, participation, etc.</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>25% 2-3</td>
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Assessment of students

**Preparation and professionalism (15%).** This grade is based on the following criteria:

- In-class activities/worksheets.
  - In-class worksheets/assignments may be randomly collected and graded.
- Prepare for quizzes. These quizzes will cover assigned reading materials.
- Actively participate in class discussions and activities.
- "ECG Homework (ECG Workout text). For the ECG homework, please complete rhythms 11-1 to 11-107 in Chapter 11 Posttest. For each rhythm, please put a check mark by the number of the rhythm if you got it correct on the first try. If you needed to edit your answer using the answer key, please circle the number of the rhythm. You will hand in your book at the end of the course to be checked.
- Students will be assigned cardiac medications throughout the course and will present their findings on each med. Further instructions will be provided.

*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 two (2) written exams (10% 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%)** – There are a total of three (3) mini case studies. Students will work in pairs to complete case studies 1 and 2 and case study 3 will be part of the final exam and completed independently. For each case study, students will be provided with a paper client and guiding questions. Your evidence should provide strong support for your clinical decision-making. Students will include appropriate in-text citation and references for each section.

**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 the proper in text citation and reference page.

2) Ability to compare and contrast/critique research findings and relevant course content, and 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.

**Oral Rhythm Identification (25%).** Students will complete three (3) oral rhythm identification checks individually, covering all rhythms discussed until that point.

_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 retest, 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 = 90.99-81.00**
- **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, checklist, 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 reserves 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 with 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.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>Mon 9/11</td>
<td>Introductions &amp; Expectations</td>
<td>Huff Ch 1-2; Dunbar Ch 1</td>
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<td></td>
<td>Cardiac Anatomy and Cardiac Cycle</td>
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<td>Mon 9/18</td>
<td>Cardiac Cycle, cont. and Axis</td>
<td>Huff Ch 3 &amp; 4; Dunbar Ch 8 &amp; 13</td>
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<tr>
<td>Mon 9/25</td>
<td>Axis, cont. and Rhythm Diagnosis</td>
<td>Dunbar Ch 8 &amp; 13; Huff Ch 5</td>
<td>Quiz 1</td>
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<td>Mon 10/2</td>
<td>Sinus Rhythms</td>
<td>Dunbar Ch 2; Huff Ch 6</td>
<td>Exam 1</td>
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<tr>
<td>Mon 10/9</td>
<td>AV Blocks</td>
<td>Huff Ch 6 &amp; 8</td>
<td>Oral Rhythm Identification</td>
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<tr>
<td>Mon 10/16</td>
<td>No class</td>
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<td>NO CLASS – FALL BREAK</td>
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<tr>
<td>Mon 10/23</td>
<td>Atrial Rhythms</td>
<td>Huff Ch 7 &amp; 8; Dunbar Ch 2 &amp; 3</td>
<td>Quiz 2</td>
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<tr>
<td>Mon 10/30</td>
<td>Ventricular Rhythms</td>
<td>Huff Ch 9 &amp; 10; Dunbar Ch 4 &amp; 5</td>
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<td>Mon 11/6</td>
<td>Pacemakers and Unusual Beats</td>
<td>Huff Ch 9 &amp; 10; Dunbar Ch 4 &amp; 5</td>
<td>Quiz 3</td>
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<td>Mon 11/13</td>
<td>Case Study 1 Presentations</td>
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<tr>
<td>Mon 11/20</td>
<td>Bundle Branch Blocks</td>
<td>Huff Ch 9; Dunbar Ch 10 &amp; 5</td>
<td>Oral Rhythm Identification</td>
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<tr>
<td>Mon 11/27</td>
<td>Stress Testing &amp; Interpretation</td>
<td>Dunbar Ch 13 &amp; 14</td>
<td>Exam 2</td>
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<td>Mon 12/4</td>
<td>Cardiac Hypertrophy</td>
<td>Dunbar 9 &amp; 11</td>
<td>Quiz 4</td>
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<tr>
<td>Mon 12/11</td>
<td>ACLS and Cardiac Meds</td>
<td>ACLS Manual</td>
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<tr>
<td>12/18</td>
<td>Written &amp; Oral Final EXAM</td>
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