COURSE CODE: MATH212  COURSE LEVEL: Freshman

COURSE TITLE: Biostatistics

COURSE TYPE: Area Core

LECTURER(S):
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Noushin GHAHRAMNLOU (Gr. 1 &3), Office: AS250, Tel. 2403

ECTS VALUE: 4

PREREQUISITES
COREQUISITES

DURATION OF COURSE: 1 semester

WEB LINK: http://brahms.emu.edu.tr/tut or http://brahms.emu.edu.tr/tandogdu

CATALOGUE DESCRIPTION

The concept of statistics, basic concepts and descriptive statistics, statistical comparison methods, statistical analyses, research design, data collection tools, inspection of sufficiencies and reliabilities, scaling and preparation of scientific report

AIMS & OBJECTIVES

The main objective of the course is to introduce basic statistics concepts applied on biologic data.

GENERAL LEARNING OUTCOMES (COMPETENCES)

On successful completion of this course, all students will have developed knowledge and understanding of:
- Descriptive statistics
- Comparison methods
- Research design
- Data collection
- Scientific report preparation

On successful completion of this course, all students will have developed their skills in:
- Finding and commenting descriptive statistics
- Methods of comparisons
- Research design
- Data collection methods
- Report preparation

On successful completion of this course, all students will have developed their appreciation of and respect for values and attitudes regarding the issues of:
- Willingness to work independently to solve problems
- Willingness to reach extra information about the topics (library and/or internet)
- Plagiarism and cheating

GRADING CRITERIA

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Excellent)</td>
<td>~85% and above: Excellent understanding of the concepts and the principles as demonstrated by correct and accurate knowledge and application of theory/laws in solving problems. Response to problems is clear, legible, concise and accurate. Excellent performance.</td>
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<tr>
<td>B (Good)</td>
<td>~70% and above: Better than average understanding of the concepts and the principles as demonstrated by correct and accurate knowledge and application of theory/laws in solving problems, but doesn't have the depth and outstanding quality of an &quot;A&quot;. Response to problems is fairly clear, legible, but occasionally contains some inaccuracies. Performance exceeds the minimum requirements</td>
</tr>
<tr>
<td>C (Average)</td>
<td>~60 % and above: An average understanding of the concepts and the principles as demonstrated by reasonably correct knowledge and application of theory/laws. Response to problems is acceptable but without the depth and quality of an &quot;A&quot; or &quot;B&quot;.</td>
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</table>

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<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D (Poor)</td>
<td>&lt;60%: Basic understanding of the concepts and the principles as demonstrated by correct knowledge and application of theory/laws in solving problems, but doesn't have the depth or accuracy of an &quot;A&quot;, &quot;B&quot;, or &quot;C&quot;. Response to problems is not clear, legible, or accurate.</td>
</tr>
</tbody>
</table>

NOTE: Grade point average (GPA) calculation is based on the number of credits and grades achieved.
theory/laws in solving problems, but doesn't have any depth. Response to problems is reasonably clear, legible, but contains inaccuracies. It reveals a sufficient understanding of the material, but lacks depth in understanding and approach/application. Content and form don't go beyond basic expectations and/or display some substantial errors. Acceptable but non-exceptional performance that doesn't go beyond the minimum requirements.

(Barely sufficient) ~50% and above
50-52:D, 53-55:D+, 56-59:C-
Minimal knowledge and barely sufficient understanding of the concepts and the principles as demonstrated by approximately correct application of theory/laws in solving problems. Response to problems is not very clear and is barely legible, and contains many inaccuracies. It reveals a minimum (confused) understanding of the material, and lacks depth in understanding and approach/application. Content and form do not adequately meet the basic expectations, and/or display significant errors. Performance demonstrates severe problems in one or more areas.

(Fail) Below 50%
0-34:F, 35-49:D-
Work does not meet the most minimal standards. It reveals no understanding of the material, lack of basic academic skills and knowledge, or completely incomprehensible writing. Performance is not acceptable

NG
nil grade
Conditions that might lead to NG grade.
Totally absent in classes and exams

Note: The above intervals for letter grades may change depending on overall performance.

RELATIONSHIP WITH OTHER COURSES
The methods mentioned in the course will help the students to understand the discussions and comments in other courses about statistics in biologic data.

LEARNING / TEACHING METHOD
Reading and analysing lecture notes, class discussions, extra works on assigned exercises, quizzes labs and tutorials.

ASSIGNMENTS
Extra problem sheets can be provided to the students for their practice addition to the exercises assigned in the classes.

METHOD OF ASSESSMENT
Midterm examination 35%
Quizzes 20%
Final Exam 45%

ATTENDANCE
Attendance is required. Students are responsible not only for the material presented and discussed, but also for any announcements made in class. Poor attendance may result NG grade

TEXTBOOK/S
Biostatistics: Basic Concepts and Methodology for the Health Sciences, Wayne W. Daniel, 10th Edition

INDICATIVE BASIC READING LIST
Lecture Notes

EXTENDED READING LIST

SEMESTER OFFERRED: 2014-2015 Spring Semester

CONTENT & SCHEDULE
Lectures will be held on

<table>
<thead>
<tr>
<th>Period</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30</td>
<td>MATH212(01) PHAR224 MATH212(05) PHAR226</td>
<td>MATH212(01) PHAR- 224 MATH212(02) CL203 MATH212(03) PHAR-222 MATH212(04) PHAR-227</td>
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<tr>
<td>09:30</td>
<td>MATH212(01) PHAR-224 MATH212(05) PHAR226</td>
<td>MATH212(01) PHAR-224 MATH212(02) CL203 MATH212(03) PHAR-222 MATH212(04) PHAR-227</td>
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<td>11:30</td>
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<td>12:30</td>
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<td>MATH212(03) PHAR224</td>
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</tbody>
</table>
The lecture topics within the semester are as in the following schedule:

<table>
<thead>
<tr>
<th>WEEK</th>
<th>DATE</th>
<th>TOPICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mar. 09-13</td>
<td>Introduction to statistics and biostatistics. CH1</td>
</tr>
<tr>
<td>2</td>
<td>Mar. 15-20</td>
<td>Use of statistics in health sciences.</td>
</tr>
<tr>
<td>3</td>
<td>Mar. 23-27</td>
<td>Data Collection. CH2</td>
</tr>
<tr>
<td>4</td>
<td>Mar.30-Apr03</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>5</td>
<td>Apr.06-10</td>
<td>Descriptive statistics, Tables and graphs</td>
</tr>
<tr>
<td>6</td>
<td>Apr. 13-17</td>
<td>Arrangement of objects; permutations and combinations. Basic</td>
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<td></td>
<td>Quiz#1 Probability Concepts CH3</td>
</tr>
<tr>
<td>7</td>
<td>Apr. 20-22</td>
<td>Probability Distributions. CH4</td>
</tr>
<tr>
<td>8,9</td>
<td>Apr. 24-May 06</td>
<td>Midterm Examinations Period</td>
</tr>
<tr>
<td>10</td>
<td>May. 07-08</td>
<td>Sampling. CH5, Sections 5.1-5.4</td>
</tr>
<tr>
<td>11</td>
<td>May.11-15</td>
<td>Estimation CH6, Sections 6.1, 6.2</td>
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<tr>
<td>12</td>
<td>May. 18-22</td>
<td>Estimation 6.3, 6.4</td>
</tr>
<tr>
<td>13</td>
<td>May. 25-29</td>
<td>Hypothesis testing. CH7, Sections 7.1, 7.2 Quiz#2</td>
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<tr>
<td>14</td>
<td>June 01-06</td>
<td>Hypothesis Testing 7.3</td>
</tr>
<tr>
<td>15</td>
<td>June 08-12</td>
<td>Hypothesis Testing 7.4</td>
</tr>
<tr>
<td>16</td>
<td>June 15-18</td>
<td>Preparing scientific reports.</td>
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<tr>
<td>17</td>
<td>June 22-Jul.04</td>
<td>Final Examinations</td>
</tr>
</tbody>
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**PLAGIARISM**

Individual accountability for all individual work, written or oral. Copying from others or providing answers or information, written or oral, to others is cheating. Providing proper acknowledgment of original author. Copying from another student’s paper or from another text without written acknowledgement is plagiarism. According to University's bylaws cheating and plagiarism are serious offences resulting in a failure from exam or project and disciplinary action (which includes an official warning may appear in student’s transcript or/and suspension from University for up to one semester).

**ANY OTHER USEFUL INFORMATION (SUCH AS STUDIO RULES, MAKE-UP EXAMS, STUDENTS’ RESPONSIBILITIES, EQUIPMENT OR MATERIAL NEEDED SITE TRIPS, ETC.)**

Attendance is compulsory. Students with poor attendance and not attended the exams will receive NG grade. A make-up exam will be given for the missed midterm examination. There will be no make-up for missed quizzes.

Students missing the Midterm, MUST provide an official report within 3 working days following the exam, in order to take the Make-up exam.