ON-LINE EMBRYOLOGY (MSBS 5075S)

COURSE DESCRIPTION
This 3-credit, on-line graduate course is designed to provide a basic foundation in human embryology where students explore human prenatal development from fertilization to birth with focus on morphological changes. Molecular mechanisms and congenital anomalies may be briefly considered. Knowledge of anatomy is useful for this course, but not a pre-requisite.

COURSE OBJECTIVES
By the end of this course, students should be able to:
- Explain major events of embryogenesis including fertilization, implantation, gastrulation, neurulation, folding.
- Describe major events related to organogenesis and embryonic derivatives that form adult structures.
- Relate defects in prenatal development to congenital anomalies.

COURSE DIRECTOR
Grace Pinhal-Enfield, Ph.D.
Department of Neuroscience and Cell Biology
pinhalgr@rwjms.rutgers.edu

MATERIALS
- Sadler TW, Langman’s Medical Embryology
- course website

COURSE FORMAT
There are three units in this course. The first unit focuses on embryogenesis, the embryonic development that takes place within the first month after fertilization. The second and third units mainly focus on organogenesis, the development of organ systems. Each unit consists of four topic modules, each made up of on-line podcasts with associated readings and formative quizzes. The twelve modules are self-paced and students are strongly encouraged to regularly keep up with content, take notes (from podcasts, readings, text), and contact the instructor with questions in preparation for the unit exams.

UNIT 1
Fertilization
1st Week of Development
2nd Week of Development
3rd Week of Development

UNIT 2
Folding & Body Cavities
4th Week of Development
Nervous System
Musculoskeletal System & Skin

UNIT 3
Cardiovascular-Respiratory Development
Digestive System Development
Urogenital System Development
Head and Neck Development

GRADING POLICY

<table>
<thead>
<tr>
<th>Grade Scale</th>
<th>A</th>
<th>90 - 100</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B+</td>
<td>87 - 89</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>80 - 86</td>
</tr>
<tr>
<td></td>
<td>C+</td>
<td>77 - 79</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>70 - 76</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>&lt;69</td>
</tr>
</tbody>
</table>

Student input and suggestions are important. There is an anonymous on-line evaluation at the end of the course and it is to be completed in a timely and professional manner.

Module Quizzes (10%)
- 12 on-line quizzes (administered on-line prior to exam)
- 5 questions per quiz with unlimited time and unlimited attempts
- The purpose of the quizzes is to guide students in exam preparation and grade calculation will be based on highest score of each quiz.

Individual Unit Exams (60%)
- 3 individual exams (administered on-line on specified dates)
- 25 questions/60 minutes per exam
- There are no make-up examinations. Absences must be indicated in advance.
- Please see statement on academic integrity in handbook link in course website.

Team Unit Exams (30%)
Immediately after the individual exam, students take the same exam as a team/group with answers recorded and graded on a scratch-off answer key. The group exam provides students with an opportunity for immediate exam feedback and allows students to discuss questions/answers in detail in order to resolve any conflicts. The group exam serves as the exam review and there will be no additional opportunity to review the exam at a later time.

Contact Johanna Sierra at sierrajo@rutgers.edu to register by Jan 15, 2019