

Course Syllabus

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BIO 120

Course Title: Fetal Development

Credits: 1.0

Course Description: This course follows the origin and development of the fetus from zygote to birth, requiring an understanding of the month-by-month development of fetal structure and the growth of fetal capacities. This course explores the structure and function of the placenta, chorionic villi, umbilical cord, and amniotic sac and fluid.

This course uses current research in midwifery and obstetrics to broaden the student's understanding of the NARM skills and MEAC essential competencies learned under clinical supervision.

Learning Objectives

Learning objectives are identified through the linking of MEAC Essential Competencies and the NCM Degree Qualification Profile.

Learning Activities

Read, listen to, watch assigned lesson materials.

Submit a written summary of current research.

Complete oral and/or written formative didactic assessments with final summative submission.

Identify and cite high-quality sources.

Use articulated reasoning while participating in an oral presentation, facilitated discussions and skills demonstrations.

Analyze a case study.

Create an infographic, handout, and/or community resource.

Optional: Develop a study aid.

Complete a final exam.

Note: The clinical requirement of NARM /Clinical Skills is completed at any time throughout the ASM apprenticeship during actual clinical practice and is NOT a requirement to complete this academic course. Typical clinical manifestations of knowledge learned in this course are identified in the learning objective document above.

Learning Materials / Resources:

Please use textbooks less than 5 years old or the most recent edition.

1. **Moore, K., Persaud, T.V.N. and Torchia, M.G. Before we are born: Essentials of embryology and birth defects. 7th edition. Elsevier Health Sciences. 2011. http://www.worldcat.org/title/before-we-are-born-essentials-of-embryology-and-birth-defects/oclc/972002013&referer=brief_results**

2. **Coad, Jane. Anatomy and Physiology for Midwives. 3rd edition. Elsevier Churchill Livingstone Press. 2012. (<http://www.worldcat.org/title/anatomy-and-physiology-for-midwives/oclc/956654359/editions?editionsView=true&referer=br>)**

3. **MEAC Abbreviated NARM Skills Form**

(<http://www.midwiferycollege.org/AcademicProgram/Downloads/ASM/Clinical/Form-NARMSkills.pdf>)

4. **MEAC Core Competencies for Midwives** (<http://meacschools.org/wp-content/uploads/2014/12/Curriculum-Checklist-of-Essential-Competencies-rev-2014.pdf>)

(<http://meacschools.org/wp-content/uploads/2014/12/Curriculum-Checklist-of-Essential-Competencies-rev-2014.pdf>)

5. **Midwives Model of Care®** (<http://cfmidwifery.org/mmoc/define.aspx>)

6. Students must find 1 article/study less than 5 years old. Recommended internet links as needed for latest developments in midwifery care:

- **The Cochrane Collaboration** (<http://www.cochrane.org/>)
- **EBSCO** (<http://ejournals.ebsco.com/login.asp?bCookiesEnabled=TRUE>)
- **National Library of Medicine** (<https://www.nlm.nih.gov/>)
- **PubMed** (<https://www.ncbi.nlm.nih.gov/pubmed/>)
- **ScienceDirect** (<http://www.sciencedirect.com/>)
- **Medscape** (<http://www.medscape.com/womenshealth>)
- **World Health Organization** (<http://www.who.int/en/>)

Evaluation Tools / Methods:

The minimum passing grade for all courses is a cumulative 70% / C-. Grades are not recorded until both the student and preceptor submit end of trimester evaluations and in the case of general education courses supervision is completed

All assignments for this course are evaluated using the following criteria:

1. Responses to each didactic assessment are evaluated utilizing the NCM rubrics and degree level profile.
2. Answers should reflect a thorough review of the current literature regarding best current practices in midwifery care.
3. Non-plagiarized paraphrased answers from the text which demonstrate appropriate comprehension of the learning objective. (Formative Assessment) Students and preceptors are encouraged to work together until the student masters the information. (Summative Assessment)
4. Random evaluation of cited sources and page numbers for each written assignment.

Course credit: One Academic credit equals approximately 15 hours of formal time plus 30 hours of additional study or homework. Formal time is defined as the amount of time taken to answer the Learning Objectives to the level of 80% for midwifery courses and 70% for general education courses and to complete any learning activities to the preceptor's satisfaction, including any time spent face to face with the preceptor. Informal time includes any time spent actively reading relevant sources and textbook/s, researching Learning Objectives, and studying for examinations.

Course Summary:

Date	Details	
Tue Jul 25, 2017	 Office Hours (https://ncm.instructure.com/calendar?event_id=114&include_contexts=course_136)	8am to 9am
	 A Note on Community Building Activities https://ncm.instructure.com/courses/136/assignments/6378	
	 BIO120-001 - Define gametogenesis. https://ncm.instructure.com/courses/136/assignments/6314	
	 BIO120-002 - Briefly describe how the sperm and oocyte are transported to meet each other in fertilization. (https://ncm.instructure.com/courses/136/assignments/6315)	
	 BIO120-003 - Where is the usual site of fertilization? https://ncm.instructure.com/courses/136/assignments/6316	
	 BIO120-004 - Define zygote. https://ncm.instructure.com/courses/136/assignments/6317	
	 BIO120-005 - List the phases of fertilization. https://ncm.instructure.com/courses/136/assignments/6318	
	 BIO120-006 - What are the immediate results of fertilization? https://ncm.instructure.com/courses/136/assignments/6319	
	 BIO120-007 - How is the zygote genetically unique from both contributing parents? (https://ncm.instructure.com/courses/136/assignments/6320)	
	 BIO120-008 - Explain at what point is the genetic sex of the fetus determined. https://ncm.instructure.com/courses/136/assignments/6321	
	 BIO120-009 - Define trophoblast. https://ncm.instructure.com/courses/136/assignments/6322	
	 BIO120-010 - Define embryoblast. https://ncm.instructure.com/courses/136/assignments/6323	
	 BIO120-011 - At what point does implantation usually occur during early development? (https://ncm.instructure.com/courses/136/assignments/6324)	
	 BIO120-012 - Explain when the embryonic period begins. https://ncm.instructure.com/courses/136/assignments/6325	
	 BIO120-013 - Describe the embryonic disc. https://ncm.instructure.com/courses/136/assignments/6326	
	 BIO120-014 - Which embryonic structures give rise to the chorion? https://ncm.instructure.com/courses/136/assignments/6327	
	 BIO120-015 - When can hCG first be detected by blood assay? https://ncm.instructure.com/courses/136/assignments/6328	
	 BIO120-016 - Define gastrulation. https://ncm.instructure.com/courses/136/assignments/6329	
	 BIO120-017 - What tissues eventually develop from the endoderm? https://ncm.instructure.com/courses/136/assignments/6330	

Date	Details
	 BIO120-018 - What tissues eventually develop from the ectoderm? (https://ncm.instructure.com/courses/136/assignments/6331)
	 BIO120-019 - What tissues eventually develop from the mesoderm? (https://ncm.instructure.com/courses/136/assignments/6332)
	 BIO120-020 - Define the notochord. (https://ncm.instructure.com/courses/136/assignments/6333)
	 BIO120-021 - Briefly describe neurulation. (https://ncm.instructure.com/courses/136/assignments/6334)
	 BIO120-022 - Describe the development of the intraembryonic coelem. (https://ncm.instructure.com/courses/136/assignments/6335)
	 BIO120-023 - What cavities arise from the intraembryonic coelem? (https://ncm.instructure.com/courses/136/assignments/6336)
	 BIO120-024 - When does the fetal heart start beating after conception? (https://ncm.instructure.com/courses/136/assignments/6337)
	 BIO120-025 - When are limb buds first recognizable on the embryo? (https://ncm.instructure.com/courses/136/assignments/6338)
	 BIO120-026 - At what point in early development does the embryo take on a C-shaped curve? (https://ncm.instructure.com/courses/136/assignments/6339)
	 BIO120-027 - What measurements are usually used to measure a maturing embryo? (https://ncm.instructure.com/courses/136/assignments/6340)
	 BIO120-028 - Explain when the fetal period begins. (https://ncm.instructure.com/courses/136/assignments/6341)
	 BIO120-029 - Briefly describe the two dates from which gestational age can be calculated. (https://ncm.instructure.com/courses/136/assignments/6342)
	 BIO120-030 - How many days does the average fetal gestation last? (https://ncm.instructure.com/courses/136/assignments/6343)
	 BIO120-031 - Describe the various sites where blood cell production occurs in a fetus. (https://ncm.instructure.com/courses/136/assignments/6344)
	 BIO120-032 - When does the fetus begin to develop lanugo and head hair? (https://ncm.instructure.com/courses/136/assignments/6345)
	 BIO120-033 - When does urine formation begin in the fetus? (https://ncm.instructure.com/courses/136/assignments/6346)
	 BIO120-034 - When are fetal lungs first capable of breathing air? (https://ncm.instructure.com/courses/136/assignments/6347)
	 BIO120-035 - Name the age of fetal viability if a baby is born prematurely. (https://ncm.instructure.com/courses/136/assignments/6348)
	 BIO120-036 - When does the fetus begin to put on significant body fat? (https://ncm.instructure.com/courses/136/assignments/6349)
	 BIO120-037 - Describe the major fetal development that occurs from 35 weeks until birth at term. (https://ncm.instructure.com/courses/136/assignments/6350)

Date	Details
	<p> BIO120-038 - Follow a drop of blood from the left atrium of the fetus' heart to the right atrium. (https://ncm.instructure.com/courses/136/assignments/6351)</p>
	<p> BIO120-039 - Name the organ that is derived from the fetal chorion and the maternal decidua at the site of implantation. (https://ncm.instructure.com/courses/136/assignments/6352)</p>
	<p> BIO120-040 - Describe the importance of the chorionic villi. (https://ncm.instructure.com/courses/136/assignments/6353)</p>
	<p> BIO120-041 - Describe the decidua. (https://ncm.instructure.com/courses/136/assignments/6354)</p>
	<p> BIO120-042 - Define the fetal part of the placenta. (https://ncm.instructure.com/courses/136/assignments/6355)</p>
	<p> BIO120-043 - Define the maternal part of the placenta. (https://ncm.instructure.com/courses/136/assignments/6356)</p>
	<p> BIO120-044 - What is meant by the cotyledons of the placenta? (https://ncm.instructure.com/courses/136/assignments/6357)</p>
	<p> BIO120-045 - Define the relationship between the amniotic and chorionic membranes. (https://ncm.instructure.com/courses/136/assignments/6358)</p>
	<p> BIO120-046 - Describe how the amniochorionic membrane may differ with multiple gestations. (https://ncm.instructure.com/courses/136/assignments/6359)</p>
	<p> BIO120-047 - Describe how maternal blood comes in contact with the placenta. (https://ncm.instructure.com/courses/136/assignments/6360)</p>
	<p> BIO120-048 - Describe how fetal blood comes in contact with the placenta. (https://ncm.instructure.com/courses/136/assignments/6361)</p>
	<p> BIO120-049 - Explain if there is mixing of maternal and fetal blood in a normal pregnancy. (https://ncm.instructure.com/courses/136/assignments/6362)</p>
	<p> BIO120-050 - Describe the structure of the umbilical cord. (https://ncm.instructure.com/courses/136/assignments/6363)</p>
	<p> BIO120-051 - Briefly describe the function of the umbilical cord. (https://ncm.instructure.com/courses/136/assignments/6364)</p>
	<p> BIO120-052 - List five functions of the placenta. (https://ncm.instructure.com/courses/136/assignments/6365)</p>
	<p> BIO120-053 - Describe how the placenta facilitates gas exchange between maternal and fetal blood. (https://ncm.instructure.com/courses/136/assignments/6366)</p>
	<p> BIO120-054 - Describe the placenta's role in hormone production. (https://ncm.instructure.com/courses/136/assignments/6367)</p>
	<p> BIO120-055 - What is the make-up of amniotic fluid? (https://ncm.instructure.com/courses/136/assignments/6368)</p>
	<p> BIO120-056 - Describe how amniotic fluid helps to maintain fetal homeostasis. (https://ncm.instructure.com/courses/136/assignments/6369)</p>
	<p> BIO120-057 - Describe 5 other functions of amniotic fluid. (https://ncm.instructure.com/courses/136/assignments/6370)</p>

Date**Details** **BIO120-058 - How does the fetus take in amniotic fluid?**

(<https://ncm.instructure.com/courses/136/assignments/6371>)

 **Conception to Birth** (<https://ncm.instructure.com/courses/136/assignments/6804>)

 **Embryonic Development** (<https://ncm.instructure.com/courses/136/assignments/6806>)

 **Exams and Quizzes** (<https://ncm.instructure.com/courses/136/assignments/6379>)

 **Fertilization** (<https://ncm.instructure.com/courses/136/assignments/6805>)

 **Fetal Development** (<https://ncm.instructure.com/courses/136/assignments/6807>)

 **Fetal Development Handout**
(<https://ncm.instructure.com/courses/136/assignments/6810>)

 **Fetoscope** (<https://ncm.instructure.com/courses/136/assignments/6819>)

 **Gestational Age and Estimated Due Date**
(<https://ncm.instructure.com/courses/136/assignments/6809>)

 **Journal Article Summary** (<https://ncm.instructure.com/courses/136/assignments/6380>)

 **Optional NARM Like Exam**
(<https://ncm.instructure.com/courses/136/assignments/7714>)

 **Optional: Create a Set of Flashcards to Study for the NARM Exam**
(<https://ncm.instructure.com/courses/136/assignments/15128>)

 **Placental Function and Development**
(<https://ncm.instructure.com/courses/136/assignments/6808>)

 **Student Evaluation of Course and Instructor**
(<https://ncm.instructure.com/courses/136/assignments/6377>)

 **Updated Knowledge and Technology**
(<https://ncm.instructure.com/courses/136/assignments/6387>)
