

**Course description (syllabus) form for higher education, doctoral,  
postgraduate and skills development programmes**

**A. General course description**

<b>Field name</b>	<b>Comments</b>
Course title	<b>Embryology</b>
Unit organising the course	Faculty of Medicine Department of Histology and Embryology Ludwik Rydygier Collegium Medicum in Bydgoszcz Nicolaus Copernicus University in Toruń
Unit for which the course is organised	Faculty of Medicine, Collegium Medicum UMK Medicine
Course ID	1655-LekM21EMBR-J
ISCED code	0912
ECTS credit allocation	1,5
Form of course completion assessment	ungraded credit examination from the module
Language of instruction	English
Indication whether attempts at obtaining course credit can be repeated	No
Affiliation of the course to a course group	University-wide courses Module: From Conception to Death
Total student workload	1. Study hours involving teacher participation: - lectures: <b>20 h</b> - consulting hours: <b>1 h</b> Study hours involving teacher participation amounts <b>21 h (0.84 ECTS points)</b> 2. Study hours involving individual student work: - participation in lectures: <b>20 h</b> - preparation for examination: <b>12 h</b> - reading literature: <b>4.5 h</b> - consulting hours: <b>1 h</b> <b>Total: 37.5 hours (1.5 ECTS points)</b> 3. Study hours involving scientific research - reading literature related to the latest developments in the field of embryology: <b>5 h</b> - lectures (including the latest literature): <b>4 h</b> Study hours involving scientific research amounts <b>9 h (0.36 ECTS points)</b> 4. Time required for preparation and participation in the assessment process: - preparation for examination: <b>12 h (0.48 ECTS points)</b> 5. Study hours involving practical work: <b>N/A</b> 6. Time required for compulsory placement: <b>N/A</b>
Learning outcomes – knowledge	Student: W1: advanced knowledge of terminology related to embryology in English: A K_W01

	W2: knows the stages of human embryogenesis, the structure and function of foetal membranes and placenta, and knows the stages of development of individual organs: A K_W06
Learning outcomes – skills	Student: U1: is able to uses terminology related to embryology in speech and writing: A K_U05
Learning outcomes - social competence	Student: K1: is aware of own limitations and is able to pursue continuing education: K_K01
Teaching methods	Information lecture (conventional, PowerPoint presentation)
Prerequisites	The student should have a basic knowledge of gametogenesis, oogenesis and early stages of embryonic development.
Brief course description	Embryology is the branch of biology that studies the prenatal development of gametes, fertilization, and development of embryos and fetuses. It provides a foundation for an understanding of the form and relationships of cells, tissues and organs in defined regions of the body. Knowledge of Embryology is a fundamental requirement for the acquisition of clinical skills and interpretation of diagnostic imaging. The course is intended to aid students in understanding knowledge on the critical stages of normal development of humans but also the effects of teratogens, genetic mutations and environmental factors on it. In achieving this objective, students will be prepared for better understanding of some primary and clinical courses, e.g. Genetics, Pediatrics.
Full course description	<p>The aim of lectures is to present the development of the human embryo from the fertilization of the ovum to the fetus stage. This course helps student to understand the development, final form and relationships of tissues and organs.</p> <p>Topics of lectures:</p> <ol style="list-style-type: none"> <li>1) Acquaintance with Health and Safety at Work Regulations. Introduction to embryology. Historical perspectives.</li> <li>2) Gametogenesis – oogenesis and spermatogenesis. Abnormal gametes.</li> <li>3) Transport of gametes and fertilization.</li> <li>4) Cleavage and implantation.</li> <li>5) Gastrulation.</li> <li>6) Basic embryonic body plan. Development of ectodermal, mesodermal and endodermal germ layers.</li> <li>7) Fetal membranes – structure and significance.</li> <li>8) Umbilical cord – structure and function. Development of placenta.</li> <li>9) Development of the cardiovascular</li> <li>10) Development of digestive system.</li> <li>11) Development of the respiratory and urogenital system.</li> <li>12) Development of nervous systems (central and peripheral nervous system, development of the ears and eyes).</li> <li>13) Development of the integumentary system.</li> <li>14) Development of musculoskeletal system and limbs</li> <li>15) Multiple pregnancies. The effect of smoking, alcohol and drugs on fetal development.</li> </ol>
Literature	<ol style="list-style-type: none"> <li>1) Leading textbooks</li> </ol> <p>Moore K.L., Persaud T.V.N., Trochia M.G. The developing human. Clinically oriented embryology. ELSEVIER, 2011; 9th edition</p>

2) Supplementary handbooks  
Schoenwolf G., Bleyl S., Brauer P., Francis-West P. Larsen's Human Embryology. ELSEVIER, 2014; 5th edition

Assessment methods and criteria

Lecture: ungraded credit  
Examination from the module "From Conception to Death"  
**Assessments methods:**  
Lecture:  
Examination from the module "From Conception to Death" (0-50 points;  $\geq 56\%$ ) W1, W2, U1  
Extended observation: K1  
**Assessments criteria:**

- 1) The material presented during the lectures will be enforced on the exam from the module: "From conception to death", which includes the subject.
- 2) Condition for admission to the examination is obtaining credit for all subject within "From Conception to Death" module
- 3) Theoretical part of the exam takes place in the form of test covering program content of all subject within module. The test consists of 50 multiple-choice questions with 5 answers, from which only one is correct. For theoretical part of the exam it is possible to obtain maximum of 50 pts, and conditions for obtaining credit is receiving minimum of 56% correct answers.
- 4) Percentage of questions in theoretical part of the exam is directly proportional to a number of hours for the implementation of particular subjects within "From Conception to Death" module, and respectively amounts:
  - a) Embryology – 20 h – 66%, i.e. 32 questions
  - b) Physiology of Puberty – 5 h – 17%, i.e. 9 questions
  - c) Pathomorphology – 5 h – 17%, i.e. 9 questions

Exam	Subject	Maximum number of points	Minimum number of points	Total number of points
Theoretical	Embriology	32	18	50
	Physiology of Puberty	9	5	
	Pathomorphology	9	5	

The criterion of receiving a positive grade from the theoretical exam is to obtain a minimum number of points (from each part - the score indicated in the table above). If the minimum number of written exams is not obtained, an additional term is allowed covering only that part of the exam, where the correct number of points was not obtained.

	<p>5) Final result of the exam is sum of points obtained from theoretical exam.</p> <p>6) Percentage calculations transferring the correct answers in theoretical part onto the scale of grades are as follows:</p> <p>Grades are awarded pursuant to the number of scores, according to the table below:</p> <table border="1"> <thead> <tr> <th>% of scores</th> <th>Number of points</th> <th>Grade</th> </tr> </thead> <tbody> <tr> <td>92-100</td> <td>46 – 50</td> <td>very good (5)</td> </tr> <tr> <td>84-91</td> <td>42 – 45</td> <td>Good plus (4+)</td> </tr> <tr> <td>76-83</td> <td>38 – 41</td> <td>good (4)</td> </tr> <tr> <td>68-75</td> <td>34 – 37</td> <td>satisfactory plus (3+)</td> </tr> <tr> <td>56-67</td> <td>28 – 33</td> <td>satisfactory (3)</td> </tr> <tr> <td>0-55</td> <td>0 – 27</td> <td>fail (2)</td> </tr> </tbody> </table>	% of scores	Number of points	Grade	92-100	46 – 50	very good (5)	84-91	42 – 45	Good plus (4+)	76-83	38 – 41	good (4)	68-75	34 – 37	satisfactory plus (3+)	56-67	28 – 33	satisfactory (3)	0-55	0 – 27	fail (2)
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56-67	28 – 33	satisfactory (3)																				
0-55	0 – 27	fail (2)																				
Work placement	N/A																					

### B. Description of the course within the period of instruction

*[Filled out by teacher/course coordinator except for the following fields marked in blue:*

- 1) period of instruction,*
- 2) form of assessment of course completion in the period of instruction,*
- 3) form(s) of classes, number of hours and completion assessment methods,*
- 4) name of course coordinator in the period of instruction,*
- 5) names of persons managing student groups for the course,*
- 6) course attributes,*
- 7) course groups including description and limit to the number of students within the groups,*
- 8) time and place of classes].*

Field name	Comments
Period of instruction	2018/2019 W (winter)
Form of assessment of course completion in the period of instruction	The same as in part A
Form(s) of classes, number of hours and completion assessment methods	The same as in part A
Name of course coordinator in the period of instruction	Magdalena Izdebska, PhD
Names of persons	Magdalena Izdebska, PhD

managing student groups for the course	
Course attributes	University-wide courses
Course groups including description and limit to the number of students within the groups	All groups
Time and place of classes	Dates and places of classes are given by CM Department of Didactics
Number of study hours involving distance learning methods	N/A
Course website	N/A
Learning outcomes defined for a given form of classes within the course	If the same as in part A, write “The same as in part A”
Assessment methods and criteria for a given form of classes within the course	If the same as in part A, write “The same as in part A”
Course content	<p>Topics of lectures:</p> <ol style="list-style-type: none"> <li>1) Acquaintance with Health and Safety at Work Regulations. Introduction to embryology. Historical perspectives.</li> <li>2) Gametogenesis – oogenesis and spermatogenesis. Abnormal gametes.</li> <li>3) Transport of gametes and fertilization.</li> <li>4) Cleavage and implantation.</li> <li>5) Gastrulation.</li> <li>6) Basic embryonic body plan. Development of ectodermal, mesodermal and endodermal germ layers.</li> <li>7) Fetal membranes – structure and significance.</li> <li>8) Umbilical cord – structure and function. Development of placenta.</li> <li>9) Development of the cardiovascular</li> <li>10) Development of digestive system.</li> <li>11) Development of the respiratory and urogenital system.</li> <li>12) Development of nervous systems (central and peripheral nervous system, development of the ears and eyes).</li> <li>13) Development of the integumentary system.</li> <li>14) Development of musculoskeletal system and limbs</li> <li>15) Multiple pregnancies. The effect of smoking, alcohol and drugs on fetal development.</li> </ol>
Teaching methods	If the same as in part A, write “The same as in part A”
Literature	If the same as in part A, write “The same as in part A”