Course Specifications
Valid in the academic year 2018-2019

Embryology and Organogenesis (D000314)

Course size (nominal values; actual values may depend on programme)

<table>
<thead>
<tr>
<th>Credits</th>
<th>Study time</th>
<th>Contact hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0</td>
<td>180 h</td>
<td>40.0 h</td>
</tr>
</tbody>
</table>

Course offerings and teaching methods in academic year 2018-2019

A (semester 1) Dutch
demonstration 2.5 h
practicum 7.5 h
lecture 30.0 h

Lecturers in academic year 2018-2019

D’Herde, Katharina GE05 lecturer-in-charge
HEINDRYCKX, BJORN GE04 co-lecturer
Krysko, Dmitri GE05 co-lecturer

Offered in the following programmes in 2018-2019

| Bachelor of Science in Biomedical Sciences | 6 credits | A |
| Preparatory Course Master of Science in Biomedical Sciences | 6 credits | A |

Teaching languages

Dutch

Keywords

Gametogenesis, Fertilization, oocyte activation, Early development, Germ layers, Organogenesis, Placenta, Fetal membranes, organogenesis, teratogenesis

Position of the course

This course belongs to the basic medical disciplines. The objectives of the course are multiple: gain insight into the different phases and events during early development, the formation of the primitive body plan, and the development of the placenta and fetal membranes. Gain insight into the development of the organ systems of the human body, and to understand the origin and consequences of congenital malformations. Highlighting some elements of developmental biology: induction, differentiation, apoptosis, stem cells.

Contents

* Gametogenesis, fertilisation, oocyte activation, pre-implantation developmental phase, early development, and formation of the fetal membranes. * Evolution of the germ layers and organogenesis of the locomotory and nervous system in order to understand the gross anatomy of the adult body. * Biomedical investigations (fundamental and clinically applied) in relation to human reproduction and embryonic development (assisted reproduction, pre-implantation genetic diagnosis, prenatal diagnosis, biological properties of the trophoblast). * Structure and development of the nervous system and locomotory apparatus, with emphasis on functional anatomy. * Reference to pathology and dysfunction of these systems on an anatomical basis.

Initial competences

Cytology, General Histology, Introduction to Biology and Genetics

Final competences

1. Have insight in the normal structure and function of the human body
2. To understand dysfunctions of organs or organ systems, in order to situate biomedical research and be able to contribute to it
3. Have insight in human development, incl fertilisation and pre-implantation development in order to understand basic and clinically applied research on human development, assisted reproduction

(Approved)
4 Have insight into development of organs and tissues, in order to understand the origin and consequences of congenital disorders and to be able to contribute to biomedical research related to developmental disorders
5 Be aware of the international dimension of biomedical research
6 To develop skills of analytical thinking with a problem solving perspective
7 To understand the relevance and the societal context and implications of biomedical research

Conditions for credit contract
Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract
This course unit cannot be taken via an exam contract

Teaching methods
Demonstration, lecture, practicum

Learning materials and price

References
* Schoenwolf, G. Larsen’s Human Embryology. 2015, 5th Ed. (Churchill Livingstone); * Sadler T.W. Langman’s Medical Embryology. 2010, 11th Ed. (Lippincott Williams & Wilkins)

Course content-related study coaching
Questions about the course are answered during a final response lecture.

Evaluation methods
end-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period
Written examination with open questions, written examination with multiple choice questions

Examination methods in case of periodic evaluation during the second examination period
Written examination with open questions, written examination with multiple choice questions

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation
not applicable

Calculation of the examination mark
The examination consists of
1) written exam with open questions in 2 parts. Part 1 concerns gametogenesis and early development, part 2 concerns the other content of the course. In order to pass for the examination, a minimum of 45% per part separately and a minimum of 50% for the combination of both parts are required. Part 1 and 2 make up 75% of the final result.
2) part 3: written test concerning the practical sessions making up the remaining 25% of the final result. In order to pass a minimum of 40% for part 3 is required. Unjustified absence in practical exercises or not taking part in the curiostesting will give rise to a total maximum score of 9/20 (highest failing mark).