UCLouvain

wanat1110

2020

Human embryology

Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

3 credits	30.0 h	Q2

Teacher(s)	Clotman Frédéric ;De Smet Charles (coordinator) ;Pierreux Christophe ;
Language :	French
Place of the course	Bruxelles Woluwe
Prerequisites	*The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Main themes	The following sequence is followed in order to meet the aims above. A first chapter is mostly a reminder of basic concepts of genetics, gametogenesis, reproductive biology and fertilization, as they pertain to embryology. This is followed by a time series of human embryonic, fetal and placental development. Techniques of in vitro fertilization and transgenesis are briefly considered at that stage. Focus is laid on morphological aspects and molecular mechanisms are considered only in a few selected illustrative cases. In a second part, the development of all main anatomical systems is considered, with specific emphasis on the main organs and those with a particularly complex developmental pattern such as the craniofacial and nervous systems. Exemples of teratogenesis and developmental pathologies are used as illustrations.
Aims	1 The aim is to provide the student with a solid basic knowledge of human embryology, including early development and organogenesis, as well as an introduction to diseases of development and to modern technologies that are partly based on the embryonic development of man and some animals, particularly rodents. - - - - *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** The assessment is conducted in the form of a written examination.
Content	(I) The first part of the course, called "General Embryology", begins with a thorough description of gametogenesis. The rest of the course explores early embryonic development, from fertilization to gastrulation. The focus will be on the underlying cellular and molecular mechanisms, and on illustrating some examples of experimental embryology. In vitro fertilization and transgenesis technologies will be discussed in this section. (II) The second part of the course, called "Special Embryology" will address the development of specific anatomical systems: a) development of the musculoskeletal system; b) development of the cardiovascular system; (c) development of the digestive system; d) development of the genitourinary system; e) Cervico-cephalic development; f) development of the nervous system and sense organs. Some selected examples of molecular biology of development, physiopathology, teratology and clinical applications will be introduced in the various chapters.
Inline resources	A course website is available via the moodle platform.
Faculty or entity in charge	MED

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Biomedicine	SBIM1BA	3	WMD1120 AND WFARM1009 AND WMD1006	