

3.00 credits

30.0 h

Q2

Teacher(s)	De Smet Charles (coordinator) ;Pierreux Christophe ;
Language :	French
Place of the course	Bruxelles Woluwe
Prerequisites	<i>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.</i>
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. Examples of teratogenesis and developmental pathologies are used as illustrations.
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <p>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.</p>
Evaluation methods	The assessment is conducted in the form of a written examination.
Content	<p>(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.</p> <p>(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. Some selected examples of molecular biology of development, physiopathology, teratology and clinical applications will be introduced in the various chapters.</p>
Inline resources	A course website is available via the moodle platform.
Faculty or entity in charge	SBIM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Biomedicine	SBIM1BA	3	WSBIM1226 AND WSBIM1227 AND WMDS1230	