

# REPRODUCTION AND DEVELOPMENT (REPD)

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## **REPD 372 Reproduction and Development Units: 3.00**

Students will obtain a general background on various aspects of human reproduction, ranging from male and female gamete development to pregnancy and birth. The course will serve as a gateway to more advanced courses in human reproduction and development.

NOTE Also offered online. Consult the Bachelor of Health Sciences program.

**Learning Hours:** 120 (60 Online Activity, 60 Private Study)

**Requirements:** Minimum 3rd year (Level 3) standing, one of (ANAT 100/3.0; ANAT 101/3.0; [ANAT 215/3.0 and ANAT 216/3.0]; [ANAT 315/3.0 and ANAT 316/3.0]) and one of (PHGY 210/6.0; PHGY 214/6.0; [KNPE 125/2.0 and KNPE 225/3.0]; [PHGY 215/3.0 and PHGY 216/3.0]).

**Offering Faculty:** Faculty of Health Sciences

### **Course Learning Outcomes:**

1. Critically assess scientific literature and media reports in human reproductive biology to support arguments in oral and written work.
2. Describe key fundamental concepts in male and female reproductive biology to create a framework that can be applied to more complex topics in human reproduction.
3. Explain the scientific basis of diseases of pregnancy to determine their implications on health in later life.
4. Integrate course content through active discussion with peers to solve case-based problems related to pregnancy, parturition, and other topics in human reproduction.

## **REPD 416 Biology of Reproduction Units: 3.00**

Comprehensive overview of cellular and molecular biology of mammalian

reproduction including gametogenesis, fertilization, early embryo development and placentation; selected topics of clinical aspects of reproduction. Participation in seminars and group discussion is required.

**Learning Hours:** 120 (36 Lecture, 36 Seminar, 48 Private Study)

**Requirements:** PREREQUISITE Level 4 and (registration in a LISC Major or Specialization plan) and (a GPA of 2.7) and either [(ANAT 215 and ANAT 216) or ANAT 309].

**Offering Faculty:** Faculty of Health Sciences

### **Course Learning Outcomes:**

1. Describe how the different specialized components of the sperm and oocyte are involved in fertilization and in relation to male and female fertility and infertility
2. Become familiarized with and describe the assisted reproductive techniques currently used in fertility clinics and reproductive centers
3. Describe current technology and experimental techniques supporting research in reproduction
4. Describe events in normal pregnancy, including cell lineage commitment, implantation, placentation, and development
5. Describe key fundamental concepts in male and female reproductive biology and apply this knowledge in human reproduction
6. Identify and describe current trends in reproductive research
7. To be aware of ethical arguments related to reproductive technologies and the hypothesis that health of adults is determined in part by experiences during fetal development



**REPD 473 Developmental Origins of Health And Disease Units: 3.00**

REPD 473, Development Origins of Health and Disease, will cover how the early-life environment contributes to later-life health. Four major topics will be covered: maternal exposures, maternal nutrition, infection, and pregnancy complications. Students will learn about how alterations in the embryonic and fetal environment due to these four parameters can and do contribute to the development of non-communicable diseases that persist throughout life. Students will have the opportunity to explore and consolidate the academic literature pertaining to DOHaD, as well as investigating the resources available to these populations of patients.

**Requirements:** Minimum 4th year (Level 4) standing and one of (PHAR 230/3.0; PHAR 370/3.0; PHAR 340/3.0; PHAR 380/3.0) and REPD 372/3.0.

**Offering Faculty:** Faculty of Health Sciences

**Course Learning Outcomes:**

1. Align principles of the developmental origins of health and disease hypothesis with primary literature in the field in order to present, connect, and extend concepts within the research article(s)
2. Consolidate information pertaining to an untoward embryonic/fetal environment in order to describe how that environment contributes to the individual's long-term health and disease
3. Define the hypothesis and mechanisms of the Developmental Origins of Health and Disease (DOHAD) to explain the connection between the in utero environment and different adult diseases.
4. Explain the consequences of developmental exposures in order to teach the public about a specified condition and advocate for support and resources for the patient population.

**REPD 499 Research Project in Reproduction and Development Units: 12.00**

An examination of the development and present state of knowledge in selected research areas of Reproduction and Development. Research project involves experimental design, data collection and analysis, written report, poster presentation and oral presentation. Students will be required to attend seminars and tutorials on topics related to research.

**NOTE** Limited enrolment; restricted to 4th year honours; permission of the Department required. Acceptance by a supervisor required prior to registration.

**NOTE** Students whose research requires the care and/or handling of animals must also complete the Introductory Animal Care Course and if required the appropriate Animal Use workshops through the Office of the University Veterinarian.

**Learning Hours:** 480 (24 Lecture, 48 Seminar, 192 Laboratory, 168 Private Study)

**Requirements:** Prerequisite Level 4 and registration in a LISC Specialization Plan and a cumulative GPA of 2.50 or higher. Exclusion Maximum 12.0 units from: ANAT 499/12.0; BCHM 421/6.0; BCHM 422/6.0; BCHM 594/3.0; BCHM 595/6.0; BCHM 596/12.0; CANC 499/12.0; DISC 591/3.0; DISC 592/3.0; DISC 593/3.0; DISC 594/3.0; DISC 598/6.0; DISC 599/6.0; EPID 499/12.0; EPID 595/6.0; HSCI 591/3.0; HSCI 592/3.0; HSCI 593/3.0; HSCI 594/3.0; HSCI 595/3.0; HSCI 598/6.0; HSCI 599/6.0; LISC 499/12.0\*; LISC 594/3.0; LISC 595/6.0; LISC 596/12.0; LISC 598/9.0; MICR 499/12.0; NSCI 499/12.0; PATH 499/12.0; PATH 595/6.0; PHAR 499/12.0; PHGY 499/12.0; REPD 499/12.0.

**Offering Faculty:** Faculty of Health Sciences