

Course Objectives:

The objectives of the course are:-

1. To introduce the field of Reproductive Biology, its history and significance
2. To impart knowledge about anatomy and physiology of reproduction
3. To demonstrate the socio-economic issues of reproductive biology.

Course Learning Outcomes:

Upon successful completion of the course, the student will be able to:

1. **UNDERSTAND** the fundamental anatomy of male and female reproductive systems in various mammalian species
2. **ACQUIRE** knowledge about histology and physiology of the male and female reproductive systems
3. **COMPREHEND** the basic patterns and periodicity of reproductive processes in mammals
8. **ELABORATE** the socio-economic problems related to reproductive biology

Course Contents:

Introduction: Overview of structure, at different levels, of reproductive systems and developments in gametes formation.

Sex Determination and Differentiation: Molecular aspects and chemical messengers in differentiation.

Hypothalamic-Hypophysical-Gonadal axis in Reproduction: Hormonal and neuronal factors and their interactions in ovarian, testicular and other reproductive targets functions; The interactions in developments in estrous and menstrual cycles; The interactions in transitions from childhood to reproductive and post-reproductive states.

Reproductive Behaviors: Physiological basis of male and female sexual behavior and maternal behavior; Endocrine basis of communication in reproduction and aggression; Pheromones in mammalian reproduction; Rhythms in Reproduction.

Teaching-Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work:	25 marks
Midterm Exam:	35 marks
Final term Exam:	40 marks

Books Recommended

1. Knobil, E. and Neill, J.D., *et al.*, 1994. The Physiology of Reproduction, Vol.1and2; 2nd Ed., Raven Press, New York.
2. Wilson, J.D., Foster, D.W., Kronenberg, H.M. and Larsen, P.R., 1998. William's Textbook of Endocrinology, 9th Ed.. W.B. Saunders Company, Philadelphia.
3. Evert, B.J. and Johnson, M.H., 2000. Essential Reproduction, 5th Ed.. Blackwell Science Inc., Oxford.
4. White B, Porterfield S. Endocrine and reproductive physiology: Mosby physiology monograph series (with student consult online access). Elsevier Health Sciences; 2012 Oct 30.
5. Schillo KK. Reproductive physiology of mammals: from farm to field and beyond. Delmar Publishers; 2009.

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Course Contents:

Study of male and female reproductive tract; physiological histology of segments of male and female reproductive tracts; Recognition of spermatogonial cells, ovarian follicles and corpus luteum in gonads; study of hormonal mechanisms in superovulation and implantation.

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