COLLEGE OF FISHERIES, KISHANGANJ

BIHAR ANIMAL SCIENCES UNIVERSITY, PATNA

Lecture plan for M.F. Sc 1st semester (Batch- 2025)

Course – Reproductive Physiology and Endocrinology Course code - FPB-502

Credit hrs. - 3(2+1)

Theory

Sl. No.	Topic	No. of lectures
01.	Modes of reproduction: Sex determination and differentiation; Sexual dimorphism	1
02.	Primary and secondary sex characters; Bisexual reproduction; Hermaphroditism	1
03.	Sex reversal; Parental care reproductive behavior and adaptations	1
04.	Neuroendocrine regulation: Pituitary gland and hypophthalmus	1
05.	Structure and functions of GnRH other neuropeptides, Gonadotropins; Gonadotropin receptors structure, Function and regulation of their secretion.	1
06.	Gonad development and maturation: Oocyte and spermatocyte growth	2
07.	Vitellogenesis; Nutrient transport and incorporation into oocytes; Oocyte maturation and ovulation; Spermiation	2
08.	Metabolic changes during gametogenesis; Nutrient regulation of gonad development and endocrine function; Seminal vesicle and function	2
09.	Reproductive Rhythm: Daily and seasonal rhythms; Environmental cues, Phototransduction	1
10.	Role of melatonin and neuropeptides, Lunar clock, Biological Clock, Time of day, reproduction; Pheromones; Migration in fish.	2
11.	Reproductive technology: Hormonal manipulation of reproduction	1
12.	Cryopreservation of gametes/ germ cells; Artificial insemination, Synthetic hormones and analogues for induced spawning; Stripping and fertilization.	2

13.	Peripheral endocrine glands and hormones: Structure and functions; Thyroid, ultimobranchial body, Corpuscles of Stannius, Adrenal homologues, and Urophysis, PTH-related peptides, Calcitriol, Pancreatic hormones	2
14.	Gut hormones; Neuroendocrine hormones.	1
	Total No. of Lectures	**21**

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Credit hrs. - 3(2+1)

Practical

Sl. No.	Topic	No. of lectures
01.	Dissection and display of reproductive organs	1
02.	Dissection and display of endocrine organs	1
03.	Assay of hormones testosterone, estradiol, cortisol, thyroxine	4
04.	Histological examination of gonad, maturity stages	4
05.	Short term preservation of milt	1
06.	Cellular morphology of pituitary gland.	1
	Total No. of Practical Classes	**12**

Course Instructor
Ms. Susmita Rani