



Module #	Module Title	Module Outline and Learning Objectives
1	Basic Cell Biology and Basic Embryology	<p>This module explores core aspects of reproductive biology, including cell cycle regulation, apoptosis, and the intricacies of oogenesis and spermatogenesis.</p> <ol style="list-style-type: none"> 1. Cell Cycle, Mitosis and Meiosis, Checkpoints, Signals, and Control 2. Cell-Cell Interaction-Membrane Receptors: Function, Type, Regulation; Signalling; Junction; 3. Metabolism in the Mammalian Cell-Carbohydrates; Fats and Lipids; Proteins, Enzymes, Cytokines; Metabolic Pathways; Reactive Oxygen Species. 4. Fundamental Principles of Molecular Biology-DNA and RNA Structure; Cellular Replication 5. Apoptosis 6. Oogenesis 7. Spermatogenesis 8. Fertilization 9. Early Embryo Development 10. Implantation
2	Male and Female Reproduction	<p>This module provides a comprehensive overview of male and female reproductive systems, covering anatomy, physiology, and infertility. Participants will explore evaluation techniques, ART treatments, and key clinical correlations. The course also addresses pubertal processes, menstrual cycles, ovarian stimulation, early embryo development, and prenatal diagnosis, offering a concise yet thorough understanding of reproductive health and its clinical implications.</p> <ol style="list-style-type: none"> 1. Anatomy, and Physiology of Male Reproductive System and Evaluation and Diagnosis of Male Infertility 2. Anatomy and Physiology of Female Reproductive System 3. Pubertal and Menstrual Cycle 4. Basic Principles of Ovarian Stimulation 5. Early Pregnancy Related With IVF 6. Prenatal Diagnosis





3	Basic Laboratory Procedures	<p>This module provides a comprehensive overview of Basic Laboratory Procedures in Assisted Reproductive Technologies (ART). Covering workstations, equipment, chemical handling, and advanced procedures like ICSI, participants will acquire essential skills for success in reproductive medicine. The course also emphasizes quality control, troubleshooting, and the latest advancements in ART.</p> <ol style="list-style-type: none"> 1. Introduction to Laboratory Equipment Part 1 2. Introduction to Laboratory Equipment Part 2 3. Culture Medias Part 1 4. Culture Medias Part 2 5. Introduction to Laboratory Consumables 6. Oocyte Retrieval 7. IVF Insemination 8. ICSI Part 1 9. ICSI Part 2 10. Oocyte Quality Assessment 11. Embryo Culture 12. Embryo Grading and Embryo Selection 13. Contamination of Culture
4	Andrology	<p>This module will allow participants to gain a comprehensive understanding of andrology and its clinical applications, including the assessment and treatment of male infertility. They will be equipped with the knowledge and skills necessary to evaluate and manage male fertility disorders and to provide high-quality care to patients with male factor infertility.</p> <ol style="list-style-type: none"> 1. Introduction to Clinical Andrology 2. Semen Analysis 3. Sperm Processing and Preparation for Therapeutic Uses 4. Sperm Cryopreservation, Storage, and Transportation 5. Severe Male Factor Infertility and Specimen Handling – Laboratory Aspects 6. New Technologies Including Sperm Chromatin Assessment

