

# **1 YEAR CERTIFICATE COURSE IN CLINICAL EMBRYOLOGY**

## **Course Description**

This is a 12 month intensive course conducted by CRAFT Hospital & Research Centre, Kodungallur, India ([www.craftivf.com](http://www.craftivf.com)) as part of the CRAFT Academy of Reproductive Science. It would equip the candidates to work competently in human IVF services by providing them with essential theoretical and practical knowledge in *human embryology*. Stress is also given to the guidelines, regulations and protocols that exist in ethical human IVF practice and to streamline the practice to achieve maximum success.

The students are required to stay on campus throughout the program. The final month allows the candidate to attend a 1 month rotation at Yale School of Medicine ([www.medicine.yale.edu/obgyn/yfc](http://www.medicine.yale.edu/obgyn/yfc)). Travel and visa arrangements to USA will be the candidate's responsibility. This is purely optional and the candidate has to bear all the personal expenses incurred.

## **Course Structure**

The course comprises of 4 units, with duration of 3 months each. There will be scheduled academic activities consisting of lectures, tutorials, journal reviews, group discussions, practical work and clinical sessions. At the end of each unit, the candidate will be subjected to assessment of both theoretical knowledge and practical skills.

### **UNIT 1 – Basic Embryology & Andrology**

**Theory:** Gametogenesis, Hormonal control of reproduction, Early embryonic development. Molecular and genetic aspects of Essential Embryology, setting up of an IVF lab, IVF lab equipments.

**Practicals:** Pipetting skills, Aseptic techniques, Laboratory maintenance, Patient record maintenance, Counsel the couples regarding the treatment planned for them at various stages of the cycle. Endocrine assays, Human semen analysis, Sperm preparation techniques for IUI, IVF, ICSI and cryopreservation. Liquid nitrogen handling

### **UNIT 2 – Assisted Reproductive Techniques**

**Theory:** Endocrinology of IVF, grading of oocytes, IVF procedures, Embryo culture systems

**Practicals:** Media preparation for various ART requirements

Handling and processing of testicular biopsy samples

Identification of oocytes from follicular fluid.

Preparation of oocytes for IVF and ICSI

### **UNIT 3 – In vitro fertilisation and Cryopreservation.**

**Theory:** Ultra structure of fertilization, Embryo grading, Principles of cryobiology.

**Practicals:** IVF – insemination and culture

Assessment of fertilization

Grading of embryos and selection for embryo transfer

Vitrification & warming (oocytes and embryos)

**Apart from this, candidates are expected to initiate a short project which may involve assisting a staff member/researcher and present the outcome of the project in the form of a dissertation.**

### **UNIT 4 – Assisted fertilization and Ethics**

**Theory:** Micromanipulation techniques, uterine receptivity and embryo transfer, Quality control and quality assurance, ethical considerations of IVF, biostatistics, Pre-implantation genetic diagnosis (PGD)

**Practicals:** Sperm immobilization technique, ICSI

Mechanical, acid tyrode and Laser assisted hatching techniques.

Loading of embryo transfer catheters

Assessments will be made at the end of each unit. Certificate will be awarded only after the submission of dissertation.

Eligibility Criteria- MBBS, BVSC, MSc (Biotech or Microbiology)

COURSE FEE will be Rs.300, 000.payable in 2 installments. Hostel facility will be provided in the campus at a reasonable rate.

Course Director- Dr R.Sujatha.MSc, PhD

Course Coordinator-Dr Asif Khan.MBBS, MCE (Monash)

Apply to.Dr.Sankalp Singh, MD, DNB, MRCOG, Co- Ordinator, CRAFT Academy of Reproductive Science