



Six Months Masters Course in

# Embryology Laboratory



# About Us

MHPro is a Continuing Medical Education (CME) platform to upskill healthcare professionals with evidence-based knowledge delivered online with immersive learning experience. The MHPro curriculum aims to prepare clinicians to master Basic Sciences, which then empowers them to deal with patients and their problems in a hospital or outpatient milieu. During the program, new clinical skills and considerable medical knowledge, and domain-specific core competencies will be stressed as clinicians acquire both diagnostic and therapeutic skills

MHPro is committed to a competency based curriculum. Learners will be graded and receive pertinent feedback

**Welcome to MHPro**





# Course Introduction

This first of its kind elaborate program for embryologist and clinicians involved in Assisted Reproductive Technology (ART) practice where you will learn the basics, advances and research development of procedures and protocols practiced in an IVF laboratory. The module delivered by experts includes lessons on setting up a new lab, acquiring equipment, quality control management, troubleshooting and performance analysis etc. The specialty of this carefully constructed master's course is giving an embryological outlook from a clinician's perspective for a better understanding between embryologist and clinicians for successful ART outcomes. The module involves an ample number of video sessions for the audience to familiarize with laboratory routines. The program is designed by internationally acclaimed experts in the field of ART and state-of-the-art lectures and webinars delivered by world-renowned faculties across the globe.





## Learning Objectives :

- To learn about the cell biology and development of gametes and embryos
- Understand the fundamentals and principles of procedures involved in IVF
- Learn how to set up an IVF laboratory
- To impart theoretical and practical knowledge of the skills and techniques used in the micromanipulation of gametes
- Learn about various clinical aspects of assisted reproduction techniques
- Understanding the workup for male infertility, including the importance of the physical examination
- Semen analysis and its role in clinical diagnosis and decision making
- Restate the limitations of the primary semen analysis and importance of advanced semen analysis and its importance in embryology lab

## Learning outcomes :

- Theoretical and technical knowledge of the clinical embryology
- Clinical methodologies in IVF (In vitro Fertilization) and advanced developments
- Operational and Quality Management skills in an IVF laboratory
- Troubleshooting and crisis management





# Program Director



## Dr. S S Vasan

Uro-Andrologist & Medical  
Director, Ankur Healthcare,  
Bengaluru, India  
President SASSM



# Course Directors



## Ms. Jayalakshmi Shoraff

Senior Embryologist,  
Ankur Healthcare,  
Bengaluru, India



# Who should take up this course?



Lab technicians in the field of Andrology and Embryology, PG Students in the field of Urology, General Surgery, Gynecology and Reproductive medicine







# Curriculum

Module Name	Chapter Name
<b>Cell Biology of Embryology</b>	<ul style="list-style-type: none"><li>• <b>Anatomy of the male reproductive system</b></li><li>• <b>Anatomy of the female reproductive system</b></li><li>• <b>Oogenesis, Spermatogenesis &amp; Embryogenesis</b></li></ul>
<b>Setting Up an ART Lab</b>	<ul style="list-style-type: none"><li>• <b>Setting up of ART Lab</b><ol style="list-style-type: none"><li>1. Clean Air System</li><li>2. Incubators</li><li>3. Laminar Air Flow System</li><li>4. Microscopes</li><li>5. Micromanipulators</li><li>6. Other essential Equipments</li></ol></li></ul>
<b>Introduction to IVF and ICSI Procedures</b>	<ul style="list-style-type: none"><li>• <b>Media &amp; Disposables</b><ol style="list-style-type: none"><li>1. Contents of Media</li><li>2. Handling of Media</li><li>3. Types of Disposables</li><li>4. Usage</li></ol></li></ul>
<b>Preparing Lab for the ART Procedures</b>	<ul style="list-style-type: none"><li>• <b>Preparing Lab for the ART Procedures</b><ol style="list-style-type: none"><li>1. Particulate Check</li><li>2. VOC level Check</li><li>3. pH Check</li><li>4. Temperature Check</li><li>5. CO2 Check</li></ol></li></ul>





# Curriculum

Module Name	Chapter Name
 <p><b>Preparing Lab for the ART Procedures</b></p>	<p>6. Daily Check List 7. Monthly Check List 8. Annual check List</p> 
<p><b>Sperm Preparation Techniques for IVF and ICSI Procedures</b></p>	<ul style="list-style-type: none"> <li>• <b>Sperm Preparation Techniques and Practical Implications</b></li> </ul> <ol style="list-style-type: none"> <li>1. Simple Wash</li> <li>2. Density Gradient</li> <li>3. Swim Up Technique</li> <li>4. Retrograde Ejaculate Sample Processing</li> <li>5. Testicular &amp; Epididymal Sperm Processing Techniques</li> </ol> 
 <p><b>ART Procedures and Preparation</b></p>	<ul style="list-style-type: none"> <li>• <b>Ovum Pick Up</b></li> <li>• <b>Conventional IVF</b></li> <li>• <b>Denudation</b></li> <li>• <b>Dish &amp; Media Preparation</b></li> <li>• <b>ICSI &amp; Oocyte Morphology</b></li> <li>• <b>Fertilization Check and Embryo Grading</b></li> <li>• <b>Embryo Transfer</b></li> </ul>
<p><b>Cryopreservation Procedures</b></p>	<ul style="list-style-type: none"> <li>• <b>Oocyte &amp; Embryo vitrification &amp; Embryo Warming</b></li> </ul>





# Curriculum

Module Name	Chapter Name
Trouble Shooting in IVF Lab	<ul style="list-style-type: none"><li>• <b>Trouble Shooting in IVF Lab</b></li></ul>
Documentation according guidelines	<ul style="list-style-type: none"><li>• <b>Documentation according guidelines</b></li></ul>
Upgrading of Skills	<ul style="list-style-type: none"><li>• <b>Upgrading of skills</b><ol style="list-style-type: none"><li>1. Timelapse technology</li><li>2. IMSI</li><li>3. PICSI</li><li>4. Embryo Biopsy</li><li>5. Testicular Sperm Selection</li><li>6. Laser Assisted Hatching</li><li>7. Artificial activation of Oocyte</li></ol></li></ul>
Lab Maintenance	<ul style="list-style-type: none"><li>• <b>Quality Analysis and Quality Check</b><ol style="list-style-type: none"><li>1. Media and Disposables Handling</li><li>2. Handling of Liquid Nitrogen</li><li>3. LN2 Tank Maintenance</li><li>4. Handling of Sero Positive Samples</li></ol></li></ul>







# Curriculum

Module Name	Chapter Name
<b>Upskilling</b>	<ul style="list-style-type: none"><li>• CASA</li><li>• DFI by Flow Cytrometry</li><li>• MACS &amp; U Select Method</li></ul>
<b>Semen Analysis and practical utility</b>	<ul style="list-style-type: none"><li>• Semen Analysis: Practical aspects</li><li>• Interpretation Of Abnormal Semen Analysis</li><li>• WHO 5th &amp; 6th Manual - Differences and Clinical Implications</li></ul>
<b>Advanced Sperm Function Tests and Techniques</b>	<ul style="list-style-type: none"><li>• Male factor in recurrent pregnancy loss</li></ul>
<b>Infertility management In Special Situations</b>	<ul style="list-style-type: none"><li>• Treatment of HIV positive males and conception</li><li>• Management of Anejaculation &amp; Erection and Ejaculatory Dysfunction Relevant to Fertility</li></ul>
<b>Optimising Male Infertility Practice</b>	<ul style="list-style-type: none"><li>• Overview of IUI vs IVF vs ICSI and guidelines for clinical practice</li></ul>
<b>Azoospermia Evaluation and Management</b>	<ul style="list-style-type: none"><li>• Sperm retrieval techniques: Critical answers for decision making</li></ul>





# Certificate Sample



## CERTIFICATE OF MASTERS

This is to certify that **YOUR NAME** has successfully completed the course in **COURSE NAME** on DD/MM/YYYY (Completion Date)

Certified by MasterHealthPro Inc., USA

Dr. SS Vasan  
Program Director

Suresh Elangovan  
President & CEO

In Association with



ACADEMY FOR MEN'S HEALTH  
SINGAPORE



ISFRH

INTERNATIONAL SOCIETY OF FERTILITY &  
REPRODUCTIVE HEALTH



SOUTH ASIAN SOCIETY FOR  
SEXUAL MEDICINE

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