



## Certificate course in Laboratory Andrology

1. **Department:** Department of Obstetrics & Gynaecology, Faculty of Medicine, Colombo
2. **Course Organizer:** Dr. (Mrs.) Umayal Baranavan  
Lecturer in the Department of Obstetrics & Gynaecology
3. **Learning Outcomes:**  
Students will gain following **programme outcomes** on completion
  - Review the physiology and pathophysiology of male reproductive function.
  - Describe the key elements of the male factor evaluation.
  - Understand WHO criteria for 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.
  - Learn advanced sperm preparation methods used in assisted reproduction such as: IUI, IVF and ICSI
  - Understand advanced sperm function tests.
  - Learn methods for male fertility preservation for use in ART.

At the end of the course students will be able to acquire following **learning outcomes:**

- Describe the anatomy of male genital system
- Identify the basic scientific knowledge related to human reproduction including male fertility



- Identify the basic scientific knowledge related to human reproduction including male fertility
- Explain the basic of subfertility management
- Identify concepts of Andrological laboratory procedures related to assisted conception, male infertility and STIs
- Develop skills to perform seminal fluid analysis and semen processing techniques
- Write the seminal fluid analysis report according to WHO 6<sup>th</sup> edition and will be able interpret the report
- Plan and implement the andrology laboratory in low resource setting
- Understand the concept of sperm preservation techniques
- Check quality of laboratory equipment and consumables
- Execute ethics in laboratory and clinical practice

4. <b>Learning Hours:</b>	Lectures	20 hours
	Practical demonstration	20 hours
	Hands on practical	32 hours
	<b>Total</b>	<b>72 hours</b>

5. **Duration in Months:** 03 Months

6. **Course Delivery:**
- Lectures (on-site)
  - Practical (Hands on training)
  - Log book assessment

7. **Entry Criteria:** The applicant should possess at least one year experience in the medical / research laboratory with a recognized qualification (degree/ diploma, etc.).

8. **Admission Process:** The course committee will review the application forms and selections would be carried out by the committee.

9. **Teaching/ Learning Method(s):**
- Lectures (on-site)
  - Practical (Hands on training).
  - Log book assessment.



10. **Assessment Method(s):**

Formative assessment

Practical assessment of seminal fluid analysis and sperm processing methods

- Receiving samples and checking the patient identity
- Sample handling
- Perform SFA and sperm processing
- Waste disposal according to standard method
- Documentation and reporting

Summative assessment

At the end of the course

- Single best answer questions in andrology
- Short essay questions

**Need to obtain more than 50 marks out of 100 to award the certificate**

11. **Lecture Panel:**

- Professor Athula Kaluarachchi MBBS, MRCOG, MRCPI, FRCOG, FSLCOG
- Professor Sumedha Wijeratne BSc., Mphil, PhD
- Dr. DMCS Jayasundara MBBS, MRCOG, MRCPI, FRCOG, FSLCOG
- Dr. A.K. Prabhodana Ranaweera MBBS, MD, MRCOG(UK)
- Dr. M.R.M. Rishard MBBS, MD (Obs & Gynae), MRCOG (UK),  
PG Cert MEd(Dundee) , Dip. in  
Laparoscopy(ESGE)
- Dr. Umayal Branavan BSc., MSc, PhD
- Ms. AM Warnakulasuriya DLT, Registered MLT, Registered  
Pharmacist, BMLS

12. **External/Internal Collaborator(s):**

- Vindana Hospital for IVF & Fertility Care

13. **Tuition Fees:** Rs. 35,000.00

14. **Other Fees:** Registration fees: Rs. 1000.00  
Exam fees: Rs. 5000.00

15. **For more Information:**

Dr. (Mrs.) Umayal Branavan  
Course coordinator  
Department of Obstetrics & Gynaecology  
077 658 8430



## 16. Course content

Module No	Module Name	Chapters	Duration (Hrs)		
			Theory	Practical demonstration	Hands on
1	Anatomy & Physiology	Anatomy of the male reproductive system • Sperm Transport and Maturation • Seminal Plasma and Its Role • Spermatogenesis and Spermiogenesis	3		
2	Infertility & subfertility	Causes of infertility & subfertility in male Aging Endocrine cause Environmental cause Infectious and inflammatory cause Genetic cause	2		
3	Laboratory Investigations for male factor infertility	Semen Analysis: Practical aspects • Interpretation Of Abnormal Semen Analysis • WHO criteria for semen analysis • Semen Collection • Basic Semen Analysis • Advanced Semen Analysis - DNA fragmentation, staining test, sperm morphology, computer assisted semen analysis (One day observation at Vindana hospital)	4	10	15
4	Sperm Processing Techniques	Simple Wash Swim Up Double Density Gradient	2	10	17
5	Sperm Freezing Techniques	Sperm Cryopreservation techniques 1. Slow Freezing Methods 2. Vitrification			



6	Andrology laboratory – Set up and Lab Maintenance	<ul style="list-style-type: none"><li>• Personnel and Equipment Requirements</li><li>• Guidelines to setup IUI Lab</li><li>• Quality Control and Regulatory Compliance</li></ul> Quality Analysis and Quality Check <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>	4		
7	Basics of ART	Intrauterine Insemination (IUI) Advanced ART	3		
8	Documentation and ethical practices	Safe practices to avoid documentation errors Ethics in ART Adhering to regulations	2		
Total hours			20	20	32