REGULATIONS AND CURRICULUM GOVERNING

FELLOWSHIP IN REPRODUCTIVE MEDICINE PROGRAM

(2023-24)

Name of the Constituent Unit/Centre: Yenepoya Medical College

YENEPOYA
Deemed to be University

Deralakatte, Mangalore, Karnataka.

YENEPOYA
Deemed to be University

NOTIFICATION

YENEPOYA

NAAC A+

YENEPOYA (DEEMED TO BE UNIVERSITY)

OFFICE OF THE REGISTRAR

No.: 52-ACM/05/2023

Date: 22.9.2023

NOTIFICATION

Sub: Starting of Fellowship Program in Reproductive Medicine reg.:-

Ref: 1. Resolution of the Academic Council at its 52nd meeting held on 17.08.2023 vide agenda-05.

2. Resolution of the Board of Management at its 63rd meeting held on 21.09.2023 vide agenda-03.

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Pursuant to the resolutions cited in the above references, the Yenepoya (Deemed to be University) hereby notifies the commencement of the Fellowship program in Reproductive Medicine in the Department of OBG under the Faculty of Medicine from the academic year 2023-2024.

The curriculum and regulations governing the program have also been approved by the above bodies.

REGISTRAR

To:

PA to Vice Chancellor
Dean of Academics, Yenepoya (Deemed to be University)
Controller of Examinations
Dean, Faculty of Medicine
Principal, YMC
Head, Department of OBG
File Copy

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Preamble

The purpose of fellowship program is to create specialists who would provide high quality health care and advance the cause of science through research & training.

Reproductive medicine is a branch of medicine that deals with prevention, diagnosis and management of reproductive problems. It is founded on the knowledge of reproductive anatomy, physiology, and endocrinology and incorporates relevant aspects of pathology, imaging techniques and laboratory methods. Treatment methods include Counseling, Medical, Surgical and Assisted Reproductive Techniques.

Currently structured fellowship training program in reproductive medicine is not available in most of the parts of south India. To get trained in Reproductive Medicine and Surgery, a gynecologist following the post-graduation have to search for facilities providing hands-on training to get knowledge and acquire training in Fertility enhancing surgeries, Andrology and ART. Hence, there is need for an structured program in Reproductive Medicine.

Yenepoya medical college is providing comprehensive care through 1268 bedded tertiary care facility through broad and super specialty departments. Department of obstetrics and gynecology department is running postgraduate program from 2005. In view of increased demand for infertility and reproductive services we have started fertility center to cater to the needs of the population.

We have all the expertise, clinical material, infrastructure to offer fellowship program in reproductive medicine.

PROGRAM CODE -RM04

Eligibility for admission

MD/MS/DNB in Obstetrics and Gynecology from an NMC/NBE recognized institution.

Aim of the Program/Course: The aim of the course is to train specialists in Reproductive Medicine with special knowledge in all aspects of reproductive medicine and surgery and training in clinical, technical, diagnostic, medical, surgical and technological management of infertility.

Objectives/Outcomes of the program

(Knowledge/Skill/Attitude/Communication)

Program Outcomes

At the end of the course, the student should be able to acquire the following competencies.

Knowledge domain

- PO01. Acquire comprehensive knowledge in Reproductive Physiology, Endocrinology, Andrology, Reproductive genetics and Clinical embryology.
- PO02. Acquire competence in evaluating and managing all aspects of female and male infertility.
- PO03. Acquire in depth knowledge on all ART procedure like IUI, IVF/ICSI, Basic embryology and Basic Reproductive surgery.
- PO04. Develop competence in counselling patients and managing ART pregnancies.
- PO05. Gain knowledge on legal and ethical issues in Reproductive medicine.
- PO06. Be conversant with regulation and ethics in embryology: HFEA (Human Fertilization & Embryology Authority) code of practice
- PO07. Acquire administrative skills like setting up of an ART center and working with interdisciplinary team.
- PO08. Appreciate the contemporary advances and developments in medical sciences as related to reproductive medicine.

Skill domain

- PO09. Demonstrate competence in performing all forms of Gynaecological imaging including 3D Ultrasound.
- PO10. Demonstrate competence in performing tubal patency tests like HSG, SSG.
- PO11. Perform independently procedures like IUI, Semen Analysis and Preparation, Ovum pick up, Embryo transfer.
- PO12. Perform independently andrological procedures like TESA, PESA. Exposure and knowledge to advance surgical techniques like Micro varicocele surgery and Micro TESE.
- PO13. Demonstrate ability to perform independently Basic Laparoscopy and Hysteroscopic procedures, Internal OS tightening.
- PO14. Observe and assist in Clinical embryology procedures like Follicular fluid screening, Denudation, IVF/ICSI, Cryopreservation, Embryo transfer.
- P015. Attain basic skills in biomedical research including critical analysis of medical literature and generating research questions, hypothesis and undertake research projects.

Attitude/Communication Domain

- P016. Acquire skills to communicate effectively with patient and spouse by providing empathic, compassionate, confident and evidence-based counselling of treatment options available.
- PO17. Demonstrate ability to practice according to ethical principles of providing or withholding of clinical care, confidentiality of patient information, obtaining informed consent and general practice of medicine.
- P018. Explain the risks and benefits of infertility procedure and treatment and listen compassionately patient's preferences and expectations.
- PO19. Provide counseling and delivery of fertility regulation methods including reversible and irreversible contraception, emergency contraception etc

- P020. Demonstrate ability to comply and participate in regulatory policies and practices prescribed by the hospital in line with PCPNDT act.

Program Specific Outcomes

PSO1	Acquire skills to take a history from infertile couple and undertake clinical and laboratory evaluation.
PS02	Demonstrate knowledge of importance of proper recording of facts about history, examination findings, investigation reports and treatment administered in all patients.
PSO3	Conduct a comprehensive evaluation of infertile couple and have a broad-based knowledge of assisted reproductive techniques including – ovulation induction, in vitro fertilization and intra-cytoplasmic sperm injection, gamete donation, surrogacy and the legal and ethical implications of these procedures
PSO4	Develop the ability to take pertinent history from the patient, perform relevant clinical examination, decide appropriate investigations and plan the treatment schedule.
PSO5	Be conversant with counselling techniques for the patient/ couple/ family members/ Primary care takers regarding infertility treatment options.
PS06	Communicate effectively and demonstrate caring and respectful behavior when interacting with patients and their families.
PS07	Adopt ethical principles in all aspects of reproductive medicine practice/ research. (Professional honesty and integrity, humility, informed consent, counselling and recognize patients' rights and privileges).
PSO8	Acquire competency in Assisted Reproductive Techniques procedures like case based Controlled Ovarian Stimulation, Oocyte retrieval, Embryo transfer techniques, endometrial preparation for FET (Frozen Embryo Transfer) and third-party reproduction.
PS09	Demonstrate ability to plan protocol for ovulation induction and plan the protocol for patients scheduled for Intrauterine insemination and ART.
PS10	Develop the expertise to perform a scientific study including formulating hypothesis, research questions, designing appropriate study, analyze and interpret the results.

	Demonstrate competence in presentation of case reports, short study findings at institute level, regional, or national professional and scientific society meetings.

Program structure

Duration of the course	13 months
Theory	4 hours per week
Practical and Clinics	12 hours per week
Contact hours	42 hours per week
E-learning hours	4 hours per week
Research Work	2 hours per week
Self-Directed Learning	6 hours per week
Clinical services/ Diagnostic services	18 hours per week

Attendance

After completing 13 months of course with 80% minimum attendance is required to appear for the University exam.

Syllabus / Course contents

A) Basic & Applied Sciences:

- Basic Anatomy and Physiology of male and female reproductive system
- Applied Pharmacology, Biochemistry and Pathology of the male and female reproductive system
- Endocrinology relevant to human reproduction – Hypothalamic, Pituitary, Ovarian hormones.: Structure, Biosynthesis, Function, Mechanism of Action, and Knowledge of autocrine and paracrine hormones.

- Endocrine disturbances affecting reproduction such as thyroid and adrenal function.
- Physiologic and Pathophysiologic Alterations of the Neuroendocrine system, Normal and abnormal puberty.

B) Female Infertility

- Diagnosis and evaluation of female infertility.
- Anovulatory infertility: Polycystic ovary syndrome and other hyperandrogenic states.
- Hypogonadotropic Hypogonadism
- Endometriosis
- Poor ovarian reserve
- Unexplained infertility
- Tubal factor infertility
- Premature ovarian failure
- Genital infections
- Disorders of Sex Development
- Recurrent pregnancy loss
- Reproductive Immunology and Its Disorders
- Ultra-sonography in reproductive medicine
- Endoscopic surgery, both Hysteroscopy and Laparoscopy

C) ART Techniques

- Ovulation Induction and monitoring-Drugs and protocols
- Intrauterine insemination
- Controlled Ovarian Stimulation for ART
- Protocols for Frozen embryo transfers
- Recurrent implantation Failure
- Recurrent Pregnancy loss
- Oocyte retrieval and Embryo transfer
- Safety issue in ART including OHSS and multiple pregnancies.

- Legal Aspects of ART, Third party Reproduction
- Adjuvants in ART
- Onco fertility
- Newer aspects of ART

D) Male infertility

- Approach to infertile male, Semen analysis, Endocrine evaluation.
- Scrotal doppler, Sperm DFI
- Empirical treatment for Oligo asthenozoospermia, Varicocele and surgical causes of male subfertility
- Azoospermia and management, Surgical retrieval of sperms
- Methods of sperm selection for ICSI

E) Clinical Embryology and Genetics

- Embryology: Gametogenesis and fertilization
- Genetics: Nomenclature / Basic principle / Pre-implantation genetic diagnosis
- Laboratory equipment – handling and maintenance, record keeping, quality control and quality assurance
- Andrology: Spermatogenesis.
- Andrology laboratory: Semen analysis and sperm function tests
- Assisted reproductive technology: Evolution and different technologies
- Processing sperm for various procedures –for intrauterine insemination, IVF, ICSI
- Processing samples of testicular / Epididymal sperms
- Various embryological procedures like Follicular fluid screening, Egg identification, Insemination, Normal/abnormal Fertilization and cleavage check, Blastocyst culture, Embryo hatching.

F) Techniques of intra-cytoplasmic sperm injection, Cryopreservation

- Embryology lab quality control and maintenance

- Pre-implantation genetic diagnosis, Endometrial Receptivity assay

G) Other

- Recent Advances Apart from the topics listed above, the advances in the field of nephrology would include relevant publications of importance to the field of reproduction medicine including in review articles, original publications and communications at premier scientific meetings in obstetrics and gynecology societies.
- Fundamentals of research methodology and principles of clinical ethics and professionalism

Teaching - Learning methods and Academic Activities

Teaching - Learning method	Academic Activities
Experiential learning	Case presentation
Integrated/Inter-disciplinary learning	Scientific society meetings/ Clinical Meet, Grand round
Participatory learning	Journal club, Seminar and interactive lectures
Problem-solving methodologies	Clinical Audit
Self-directed learning	Research work, Logbook
Patient-centric and Evidence-based learning	Case presentation
Project-based learning	Research work
Any other : Visits to institutes	Visits to other institution of excellence Visit to laboratories, diagnostic facilities, affiliated clinical units and other areas.

Scheme of Examination

Internal Assessment (Frequency, Pattern-Theory and Practical)

Formative assessment: - Assessment of academic activities like journal club, seminar, case presentation, clinical meets and clinical audits, etc.

Internal Assessment: Theory and Practical Examination of 50 marks each.

Theory paper will consist of 05 long essays

Practical examination:

OSCE (Objective Structured Clinical Examination) 2 Stations with one observation station	20 Marks
Practical Skills Demonstration. / WPBA/MINI CEX	30 Marks
Total	50 Marks

University Examination (Pattern-Theory and Practical)

The final Examination: Theory and Practical Examination of 100 marks each.

Theory paper will consist of 10 long essays

Duration of Theory Papers: 3 hours

Practical Examination: -

OSCE (Objective Structured Clinical Examination) 3 Stations with one observation station	30 Marks

Practical Skills Demonstration. / WPBA/MINI CEX	30 Marks
Viva Voce: Discuss case scenarios, complex concepts, clarity of subject, case-based discussions, etc.	30 Marks
Portfolio	10 Marks
Total	100 Marks

Eligibility to appear for University Examination

Minimum 80% attendance

At least one presentation/poster in international/national/state conferences.

Minimum 40% marks in Internal Assessment examination

Logbook submission

Criteria for pass

Minimum 50 % marks in Theory

Minimum 50 % marks in Practical.

Declaration of Results

Declared by the Yenepoya (Deemed to be University)/ Yenepoya Medical College

Recommended books

Text book of Gynaecology and Reproductive Endocrinology – Speroff – 9th edition

- Text book of Assisted reproductive techniques by David K Gardner.

- Laboratory and Clinical Perspectives by David K. Gardner.
- The BOURN Hall Guide to Clinical and Laboratory practice.
- INFERTILITY IN PRATICE by Adam H Balen.
- Diagnosis and management of ovarian disorders by Albert Attchek, Liane
- William Textbook of Obstetrics.
- High risk Obstetrics – James.
- High risk pregnancy - Ian Donal
- Text book of Operative Obstetrics - Munro Kerr.
- Medical disorder in pregnancy - De Sweit
- Text book of Operative Gynaecology - Te-lindes
- Ultrasonography in Obstertics and Gynaecology --- Callen
- Campbell's Urology
- Indian Council of Medical Research. National Ethical Guidelines for Biomedical and Health Research involving Human Participants. New Delhi; 2017. Available from: https://icmr.nic.in/guidelines/ICMR_Ethical_Guidelines_2017.pdf

Journals

- Human Reproduction
- Fertility and sterility
- Urologic Clinics of North America
- The Journal of Urology – American Urology Association
- Reproductive Bio Medicine Online (RBM)
- Molecular Human Reproduction
- Journal of Assisted Reproduction and Genetics
- European journal of Obstetrics and Gynaecology and Reproductive Biology
- Andrology

ANNEXURE

Blueprint for Theory and Practical Examination

University Examination (Pattern-Theory and Practical)

The final Examination: Theory and Practical Examination of 100 marks each

Theory paper will consist of 10 long essays

Duration of Theory Papers: 3 hours

Practical Examination: -

OSCE (Objective Structured Clinical Examination) 3 Stations with one observation station	30 Marks
Practical Skills Demonstration. / WPBAA{INI CEX	30 Marks
Viva Voce: Discuss case scenarios, complex concepts, clarity of Subject, case-based discussions, etc.	30 Marks
Log book	l0 Marks
Total	100 Marks

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Question paper layout for theory examinations

YENEPOYA (DEEMED TO BE UNIVERSITY)
FELLOWSHIP IN REPODUCTIVE MEDICINE EXAMINATION
OCTOBER -2025 SESSION
QP CODE: 7065

Exam Date:13-10-20025 Max Marks:100
Time: 10:00 am (3 Hrs)

Yours answer should be specific to the question asked.
Draw neat labeled diagrams wherever necessary.

LONG ESSAYS (10x10=100Marks)

1. Discuss Preimplantation genetic testing- definition , types, biopsy techniques and timing of biopsy. Write a note on its limits and current literature.

2. Describe the different phenotypes of PCOS. Recent recommendations for assessment and management of Polycystic ovarian syndrome.

3. PRP & Stem cells – its role in Reproductive Medicine .

4. Discuss new Surrogacy Act 2021, in India – Highlight the management of single parent, widows, same sex couples, NRI,s, Foreign nationals in the light of this new act.

5. Recent advances in sperm selection for ICSI. Outline the workup and treatment of an infertile couple with azoospermia.

6. Write an essay on Oncofertility Preservation of fertility in patients undergoing cancer therapy.

7. Define poor responders. What is POISEDEION criteria for managing poor responders? Discuss the stimulation protocols for IVF in a poor responder.

8. Discuss the imaging techniques used for evaluation of fallopian tubes. Discuss microbiota in Reproductive Medicine.

9. Describe briefly window of implantation. Definition, case and management of Recurrent implantation failure (RIF).

10. Use of Hysteroscopy in Subfertile patents. Complications of diagnostic and operative Hysteroscopy .Discuss emerging role of A1 in fertility enhancing Hysteroscopic surgeries.