REGULATIONS AND CURRICULUM GOVERNING

FELLOWSHIP IN ARTHROPLASTY AND ARTHROSCOPY 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
(DEEMED TO BE UNIVERSITY)

Office of the Registrar , Yenepoya (Deemed to be University)

NOTIFICATION – 51-ACM/07/2023 dtd. 16.05.2023

Sub: Starting of Fellowship Programme in Arthroscopy and Arthroplasty

Ref: Resolution of the Academic Council at its 51st meeting held on 16.05.2023 vide agenda - 9

******

The 51st Academic Council at its meeting held on 16.05.2023 and subsequently the Board of Management at its 62nd meeting held on 14.06.2023 has resolved to approve the proposal for starting of Fellowship Program in Arthroscopy and Arthroplasty under the department of Orthopaedics, Yenepoya Medical College from the academic year 2023-2024.

The curriculum of the course has also been approved

REGISTRAR

mj

To:

Principal, YMC

Copy to:

1. Professor & Head, department of Orthopaedics
2. Controller of Examinations
3. File copy

YENEPOYA
Deemed to be University

CONTENTS

Sl. No.	Particulars	Page numbers
1.	Preamble	3
2.	Goals	3
3.	Objectives/Outcomes	4-5
4.	Program specific outcomes	5-6
5.	Syllabus / Course contents	7-11
6.	Scheme of Examination	12-13
7.	Reference books and Journals	14-15
	Annexure	
8.	Blue Print	15
9.	Model Question papers	16-17

YENEPOYA
Deemed to be University

Preamble:

Over the last decade, tremendous advances have been made in Arthroplasty, Arthroscopy, and Sports medicine, including understanding biomechanical aspects and the development of newer technologies. As a result, care of arthritis patients and sports injury patient treatment has significantly improved; because of the awareness of the latest technology and improved quality of life, lots of patients have an understanding of their osteoarthritic condition, and there is a significant increase in several patients willing to get rid of the arthritic condition by getting the best treatment. We have a significant increase in sports injuries. However, in giving the best treatment for osteoarthritic and sports injury patients, there are lacunae in the surgeon's technique. So to improve patient care and surgical skill and provide the best care in the corners of India, the Department of Orthopaedics, Yenepoya Medical College, Mangalore planning to start up with comprehensive fellowship program of arthroplasty and arthroscopy, which is unique and deals with a both arthritic and sports medicine patients.

Goal: To provide high-level in-house clinical training in arthroplasty and arthroscopy for orthopedic surgeons so that the trained candidates can practice arthroplasty and sports medicine surgery and deal with all types of arthritic and sports-related ailments.

Aim of the program

To make fellows competent in arthroplasty and arthroscopic surgeries for all arthritis and sports injuries.

Objectives/Outcomes

Arthroplasty program outcome

- PO1-To develop a systematic approach to identify the patients 'problem and decision-making for diagnosis.

- PO2-To develop and sharpen skills in examining and assessing patients with arthritis and related problems requiring joint replacement surgery.
- PO3-To attain basic surgical skills and techniques in primary and Revision arthroplasty to perform cases.
- PO4-To develop surgical technical skills in Arthroplasty in Cadaveric Lab and real-life operation theatre conditions.

Arthroscopy program outcome

- PO1- To acquire skills in clinical Examination, radiographic analysis, and diagnosis the sports injury
- PO2-To train in Arthroscopic Skills in Cadaveric Lab and real-life operation theatre conditions.
- PO3-To develop surgical skills to perform independent surgery and management of Sports injuries.
- PO4-To introduce the science of exercise prescription for various age groups and medical conditions.
- PO5-To present Sports performance analysis and performance enhancement in sports.

Program specific Outcomes PSO - Arthroplasty

PSO1	To make a diagnosis	Examine the patient for possible arthritic changes in the knee, hip, and shoulder joints. Arrange appropriate imaging and identify the radiographic features of arthritic changes and come to the proper staging of arthritic changes.
PSO2	To formulate a treatment plan	To classify the arthritis of joints, formulate the plan and execute the treatment such as conservative, biological, osteotomy, and joint replacement.

PSO3	To counsel the patient	Describe the risks and benefits of surgical versus conservative management and consider the patient's preferences and expectations.
PSO4	To Perform appropriate Procedures	To able to assist /perform various procedures
PSO5	To Manage or prevent Complications	To assess the probable complications of the procedure and to notify it

Program specific Outcomes PSO -Arthroscopy

PSO1	To make a diagnosis	History taking, clinical examination and radiographic assessment of sports injury cases
PSO2	To formulate a treatment plan	To come for proper diagnosis and treat in accordance with evidence based medicine
PSO3	To counsel the patient	Describe the risks and benefits of surgical versus conservative management and consider the patient’s preferences and expectations
PSO4	To Perform appropriate Procedures	To able to assist /perform various surgical procedures
PSO5	To Manage or prevent Complications	To assess the probable complications of the procedure and to notify it

Eligibility for admission

1 year post-MS (Ortho) / DNB (Ortho)

YENEPOYA
Deemed to be University

Duration including hours of theory/practical/clinical/ hands-on/

Duration of the course	13 months
Theory	4 hours per week
Practical and Clinics	6 hours per week
Contact hours	42 hours per week
E-learning hours	4 hours per week

Simulation-based, etc. ***(as applicable)***

Syllabus / Course contents

Arthroplasty:

Includes relevant chapters covering the topics listed below for significant joints undergoing replacement arthroplasty routinely.

1. Basic Sciences and Applied Sciences
2. Anatomy
3. Physical Examination of specific joints
4. Radiologic Imaging
5. Diagnostic Evaluations
6. Templating
7. General Considerations for Arthroplasty Surgery Including Consent and Preparation. General Surgical Principles, Guidelines for Informed Consent, Patient Positioning for Surgery, Equipment Needed, Postoperative Considerations, Surgical Approaches
8. Hip, Knee, Shoulder, Elbow, and Ankle Instrumentation
9. Bone Graft and Bone Substitute Biology
10. Hip Arthroplasty

    Surgical approaches -Posterior, Antero-lateral, Anterior

Hemiarthroplasty -Cemented, Uncemented

Total hip replacement-Cemented, Uncemented

Revision of total hip replacement

- Acetabular revisions-cups, cages,3D printing, Bone grafting techniques, trabecular metal
- Stem revisions-Extended trochanteric osteotomy, long stems, cement in the cement

Computer-assisted Hip replacement

Robotic Hip replacement

11. Knee Arthroplasty

a. Unicompartmental knee arthroplasty

Fixed bearing

Mobile bearing

b. Total Knee Arthroplasty

Cruciate retaining

Cruciate substituting

Mobile bearing

Uncemented Knee replacement

c. Revision Total knee

Use of stems—cemented, uncemented

Constrained knees

Hinged knees— rotating vs. fixed

Use of sleeves and cones

Computer-assisted Knee replacement

Robotic Knee replacement – Unicompartmental and Total knee

12. Shoulder

Hemiarthroplasty

Total shoulder arthroplasty

Reverse Shoulder arthroplasty with transfers

13. Elbow

Total elbow replacement

14. Ankle

Total ankle replacement

15. Miscellaneous

Gait Considerations in Patients with joint arthroplasty

Spine-pelvic relations

Periprosthetic fractures

Prosthetic joint infections

Post arthroplasty arthroscopy

Arthroscopy

1. Instrumentation
2. Arthroscopic Setup & Portal Placements in Knee, Shoulder, Elbow, Wrist and Hip.
3. Menisci
4. Cartilage
5. Synovium
6. Patellofemoral joint
7. Anterior cruciate ligament
8. Posterior cruciate ligament
9. Medial collateral ligament
10. Lateral collateral ligament
11. Postero lateral complex
12. Multiligament injury
13. Osteoarthritis
14. Shoulder Periarthritis
15. Shoulder Instability-anterior, posterior, inferior, multi
16. SLAP & Biceps tendon lesions
17. Rotator cuff and Impingement /tear
18. Scapular dyskinesia
19. Ligaments around the ankle
20. AnkleImpingement
21. Ligaments around the wrist, TFCC
22. Ligaments around the elbow

23. Lateral Epicondylitis
24. Osteochondral defect
25. Intra-articular and Peri-articular Fractures

Weekly timetable

Sl. No	Week Schedule	Sub-Topic	Contact Hours
1	Monday	Sports Injury Clinic and learning Minor Procedures	7
2	Tuesday	Operation Theatre	7
3	Wednesday	Arthroplasty Clinic learning Minor Procedures	7
4	Thursday	Conduct Sports Clinics at different Sports clubs or Organizations or On Field or Wards and Classroom Lectures, Case-based teaching and learning, Online assignments, and Logbook completion or Research work.	7
5	Friday	Operation Theatre	7
6	Saturday	Physiotherapy and Rehabilitation	7
		Total hours per week **Note:** On-field training may be on weekends (as extra teaching and learning hours and may involve local traveling).	**42**

Surgical skills

Assist	Perform independently
Arthroplasty	

Complex primary total knee and hip replacement	Primary total knee replacement
Revision of total knee replacement	Primary total hip replacement
Revision of total hip replacement	Hemiarthroplasty hip
Reverse total shoulder replacement	Hemiarthroplasty shoulder
Total shoulder replacement	
Total elbow replacement	
Arthroscopy	
Arthroscopic Shoulder rotator cuff repair	Arthroscopic ACL Reconstruction
Arthroscopic Bankart repair	Arthroscopic meniscectomy/repair
Arthroscopic PCL repair	Diagnostic shoulder arthroscopy
Arthroscopic diagnostic small joints	

Attendance requirements

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

Academic Requirements

Research work

1. At the minimum, candidates should submit one paper to an indexed journal.
2. At least one presentation/poster in international/national/state conferences
3. To complete one clinical audit
4. Regular presentations in Local body orthopedic/Arthroplasty/arthroscopy meets.
5. Maintaining a Log of all Clinical and Surgical work and Practice.

YENEPOYA
Deemed to be University

Scheme of Examination

- **University Examination**

The final Examination (Fellowship in Arthroplasty and Arthroscopy of 200 marks) will include the Theory and Practical Examination of 200 marks each.

- **THEORY PAPER: - Paper 1 and 2 (200 Marks)**

Paper – I - <u>Arthroscopy and sports injuries</u> Principles of Sports Medicine Upper Limb Sport Injuries Lower Limb Sport Injuries Trunk Sport Injuries Head & Spine Sport Injuries Special Groups in Sports Medicine Clinical Exercise Science for Sports Medicine Miscellaneous Topics	100 Marks
Paper-II- <u>Arthroplasty</u> Basic and Applied Science related to Arthroplasty, Arthroscopy and General Orthopaedics Biomechanics of Individual Joints Hip Arthroplasty Knee Arthroplasty Shoulder, Elbow, and Ankle Arthroplasty Recent Advances in Arthroplasty	100 Marks
Total	**200 Marks**

Nature and Number of Questions:

Each theory paper will consist of 10 long essays

Duration of Theory Papers: 3 hours for each question paper

b) PRACTICAL: -

OSCE (Objective Structured Clinical Examination)	100 Marks
Practical Skills Demonstration. / WPBA/MINI CEX	50 Marks
Viva Voce: Discuss case scenarios, complex concepts, clarity of subject, case-based discussions, etc.	50 Marks
Total	**200**

•Criteria for Eligibility to Appear University Exam

80 % attendance

Maintaining log book duly signed by the course director and coordinator

Research publications submission /accept in PubMed /Scopus/

Paper /poster presentation either in national or state conferences

•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

Logbook/Portfolio

The log book should be maintained, which must be countersigned by the course director

YENEPOYA
Deemed to be University

REFERENCE BOOKS AND JOURNALS

Reference books for arthroplasty:

1. Charnley J. Low friction arthroplasty of the hip: Theory and practice [Internet]. 1979th ed. Berlin, Germany: Springer; 1978. Available from: http://dx.doi.org/10.1007/978-3-642-67013-8
2. Scott WN. Insall& Scott surgery of the knee, 2-volume set. 6th ed. Philadelphia, PA: Elsevier - Health Sciences Division; 2017
3. Bono J, Mccarthy J, Thornhill T, Bierbaum B, Turner RH. Revision Total Hip Arthroplasty. Bono JV, McCarthy JC, Thornhill TS, Bierbaum BE, Turner RH, editors. New York, NY: Springer New York; 1999
4. Azar FM, Canale ST, Beaty JH. Campbell's operative orthopaedics, 4-volume set. 14th ed. Philadelphia, PA: Elsevier - Health Sciences Division; 2020.
5. Scuderi GR, Tria AJ Jr, editors. Surgical Techniques in Total Knee Arthroplasty. New York, NY: Springer New York; 2002.
6. Morrey BF. Master techniques in orthopaedic surgery®: The elbow, 3e. 2015
7. Gartsman GM. Shoulder Arthroplasty: Elsevier, 2008
8. Petty W. Total Joint Replacement. London, England: W B Saunders; 1991

Reference periodicals for arthroplasty:

9. Arthroplastyjournal.org. Available from: https://www.arthroplastyjournal.org/
10. JBJS. J Bone Joint Surg Am [Internet]. 2020
11. Clinical Orthopaedics and related research® [Internet]. Lww.com. [cited 2023 May 3]. Available from: https://journals.lww.com/clinorthop/pages/default.aspx

Reference books for arthroscopy:

1. Mark D. Drez and Millers 'Orthopaedic Sports Medicine Principles and Practice. Fifth Edition. Amsterdam: Elsevier; 2019.
2. Michael J Strobel. Manual of Arthroscopic Surgery. Germany, Springer, 2008
3. Fredrick Matsen, Frank A Cordaso, John Sperling, Steven Lippitt. Rockwood and Matsens' The Shoulder. Sixth Edition. USA. Elsevier, 2021

4. W Norman Scott. Insall and Scott Surgery of the Knee. Sixth Edition. USA, Elsevier. 2017
5. Azar FM, Canale ST, Beaty JH. Campbell's operative orthopaedics, 4-volume set. 14th ed. Philadelphia, PA: Elsevier - Health Sciences Division; 2020.

Reference periodicals for arthroscopy:

6. Arthroscopyjournal.org. Available from: https://www.arthroscopyjournal.org/
7. Journal of Arthroscopy and Joint Surgery [Internet]. Sciencedirect.com. Available from: https://www.sciencedirect.com/journal/journal-of-arthroscopy-and-joint-surgery
8. Journal of Arthroscopic Surgery and Sports Medicine. Indian Arthroscopy Society; 2019. Available from: https://jassm.org/
9. Knee surgery, sports traumatology, arthroscopy [Internet]. Springer. Available from: https://www.springer.com/journal/167

11. Any other information

a. Should have appropriate Professional Indemnity Insurance to practice Orthopaedic Surgery.

YENEPOYA
Deemed to be University

Blue Print

Blueprint for the theory papers (Content weightage paper-wise) for summative (university) exam for Fellowship in Arthroplasty and Arthroscopy

Paper I – Arthroscopy & Sports Medicine (100%)

TOPIC	PERCENTAGE
Lower Limb Sports Injuries (Knee, Ankle)	25%
Upper Limb Injuries (Shoulder, Elbow, Wrist)	20%
Ligament Injuries (ACL, PCL, MCL, PLC)	15%
Meniscus, Cartilage, Synovium	10%
Shoulder Pathology (RCT, Instability, SLAP)	10%
Principles of Sports Medicine	10%
Exercise Science & Rehab	5%
Miscellaneous	5%

Paper II – Arthroplasty (100%)

TOPIC	PERCENTAGE
Hip Arthroplasty (Primary + Revision)	25%
Knee Arthroplasty (Primary + Revision)	25%
Basic Sciences & Biomechanics	15%
Complications (Infection, PPF)	10%
Shoulder Arthroplasty	10%
Elbow & Ankle Arthroplasty	10%
Recent Advances (Robotics, Navigation)	5%

YENEPOYA
Deemed to be University

Model Question papers

Fellowship in Arthroplasty and Arthroscopy University Examination

Paper 1- ARTHROSCOPY AND SPORTS MEDICINE

Long essays (10x10=100 Marks)

1. What are the Operative treatment options of chondral defects: Principles of remplissage procedure.
2. Describe SLAP lesions. How, these tears appear in MR Arthrogram.
3. Physical examination maneuvers to identify ACL injury, discuss unhappy triad of knee.
4. Describe the technique of Single bundle PCL Graft Procedure.
5. Describe Extensor compartments of wrist. Discuss the portals around wrist, how will you avoid complications.
6. A cricket player with bucket handle tear of lateral meniscus, how will you manage?
7. Portals around subtalar joint and how will you do arthroscopy assisted subtalar fusion.
8. Describe Anatomical land marks of portals around elbow and what is the best position for loose body removal of elbow?
9. Autologous chondrocyte implantation.
10. Describe Portals around hip - mention how will you avoid complications.

YENEPOYA
Deemed to be University

Model Question papers

Fellowship in Arthroplasty and Arthroscopy University Examination

Paper II- ARTHROPLASTY

Long essays (10x10=100 Marks)

1. Discuss the evolution of bearing surfaces of acetabular cup and femoral head in total hip arthroplasty.
2. Describe diagnostic criteria for prosthetic joint infection and preventive measures of it.
3. What are primary goals of total knee arthroplasty and discuss different approaches including trivector approach to attain the goals.
4. Discuss the soft tissue balancing principles in valgus knee.
5. Management of bone defect in varus OA knee.
6. What are the indications and contraindications of total wrist arthroplasty?
7. Describe biomechanics, indications and steps in Reverse shoulder arthrolasty?
8. List of indications and major complications of total elboiw arthroplasty and measures to overcome the complications.
9. Ogden construct in THR.
10. When is the extramedullary femoral alignment is useful and not useful in TKA. Procedure and mention the advantages and disadvantages of computer navigation in TKA.