

Dr.NTR University of Health Sciences

Vijayawada

SYLLABUS

**“POST DOCTORAL FELLOWSHIP COURSE
IN ARTHROPLASTY”**

for the academic year 2018-19

FELLOWSHIP COURSE IN ARTHROPLASTY

1. **Proper name of the course:** Fellowship course in Arthroplasty
2. **Duration of the course:** One year
3. **I. Eligibility criteria for admission:** M.S/D.N.B Orthopaedics, recognized by the Medical Council of India / National Board of Examinations.

II. Intake capacity: 2 per year

4. Complete curriculum of the course:

4.1. *Statement of Goals & Specification of Objectives:*

A. Goal:

This fellowship program aims at empowering surgeons with this essential armamentarium towards providing a complete and scientific surgical treatment to individuals suffering from arthritis.

B. Objectives:

- To orient the fellow towards acquisition of technical skills required in Joint Replacement and Arthroscopy.
- To expose the fellow to the basic knowledge of Arthritis, Tribology, Biomechanics and Joint Replacement.
- To involve the fellow in research activities involving Conservative, Surgical and supportive management of Arthritis.
- To support the fellow to **undertake research** in Medical management of Arthritis, pathology of Arthritis, newer surgical procedures and long term evaluation of Joint Replacement.
- To involve the fellow in Community activities like Outreach Programs, Awareness Camps and Arthritis help groups.
- To evolve the fellow into a specialist Joint Replacement Surgeon well versed with the basic skills and well oriented with the advanced skills in the holistic management of Arthritis.
- To inculcate the idea of multidisciplinary approach in the management of Arthritis.

4.2. *Course Content:*

4.2.1. Anatomy and physiology of joints: bones, ligaments, articular surfaces, blood supply and nerve supply and accessory structures of the major joints in the body.

4.2.2. Pathology of joints:

- Congenital abnormalities with deformities
- Infections: acute & chronic including tuberculosis
- Trauma: sports injuries
- Neoplasms: benign and malignant
- Degenerative disorders
- Autoimmune disorders

4.2.3. Management plan:

- Biomechanics.
- Indications.
- Pre-operative planning.
- Templating.
- Surgical techniques.

- Soft tissue balancing and their importance.
- Implant Biomechanics and merits/demerits.
- Implant choice.
- Rehabilitation.
- Outcomes.
- Complications – pre, intra and post operative.
- DVT prevention.
- Blood management during arthroplasty surgeries.
- Infection in Arthroplasty.
- Revisions, Principles and Practice.
- Current Concepts.

4.2.4. Knee arthroplasty:

- **Basic Science:**
 - Anatomy and imaging of the knee
 - Clinical examination of the knee
 - Surgical approaches to the knee
- **Biomechanics:**
 - Basic biomechanics
 - Gait – normal and abnormal
 - Design criteria for total knee replacement
- **Knee Joint Replacement and Its Alternatives:**
 - Surgical pathology of arthritis
 - Non operative treatment of knee arthritis
 - Anaesthetic considerations in knee surgery
 - Pain management in knee surgery
 - Osteotomy about the knee
 - Scoring systems
 - Historic development , classification and characteristics of knee prosthesis
 - Preoperative planning
 - Surgical technique and instrumentation in total knee arthroplasty (TKR)
 - Transfusion considerations in total knee replacement
 - Bone graft, wedges and augments in TKR
 - Postoperative management - protocols
 - Complications of TKR and its management:
 - Aseptic loosening
 - Infection
 - Revision TKR

4.2.5. Arthroplasty of the hip:

- Basic biomechanics
- Clinical examination
- Radiology
- Non operative management of hip arthritis
- Surgical approaches to the hip
- Evolution of total hip replacement (THR)
- Preoperative planning
- Cemented total hip replacement
- Uncemented total hip replacement
- Surface replacement
- Postoperative management protocols
- Complications of THR
 - Dislocation
 - Infection
 - Aseptic loosening

- Revision THR

4.2.6. Pharmacology including antibiotics and anticancer drugs

4.2.7. Rehabilitation, counseling and physiotherapy

4.2.8. **General Topics:**

- Research methodology
- Teaching methodology

5. **Teaching and training:**

5.1 Postings:

- General OPD - 2 Months.
- Ward & Theatre - 9 Months (3 Days/Week).
- Research - 1 Month.

The minimum expected skills to be acquired by the fellow are as following

Surgical work:

Surgery	A	PA	P	PI
Knee replacement	30	10	-	10
Hip replacement	30	10	-	10
Others	10	5	-	-

PA: Performed assisted P: Performed PI: Planned A: Assisted

5.2. **Presentations:**

The candidate needs to make a minimum number of presentations in these academic sessions during the training period of 1 year

Frequency #

Presentations

- a. Seminars / Symposia 1 per month
 - b. Journal club 1 per month
 - c. Clinical case conference 1 per month
 - d. Research conference at state level - 1
 - e. Research conference at national level - 1
 - f. Bedside presentation 1 per month
 - g. Interdepartmental meeting 1 per month
 - h. Grand rounds 1 per week
 - i. Mortality meeting
and audit meeting 1 per month
 - j. Record meetings Once in 2 weeks
 - k. Teaching learning process will also take place during the daily ward rounds and during teaching rounds
- # May be increased if required.

6. **Log book**

The fellows shall maintain a Record Book (Log Book) of the work carried out by them on day to day basis & training program undergone during the period of training including details of procedures carried out independently or assisted by the candidate. The log book will be checked by the faculty members imparting the training. Candidates will be required to produce log book duly certified by the guide at the time of practical examination.

The surgical skills acquired by the fellow (assisted, performed, planned) should be entered into log book date wise and countersigned by the guide/HOD.

7. Text books and reference books:

- Low friction arthroplasty by John Charnly.
- Surgery of the knee by John Insall.
- Revision total hip arthroplasty by Jones Bono.
- Surgical techniques in total knee arthroplasty by Seuderi and Tria.
- Joint replacement orthopaedics by Bernard Morrey.
- Shoulder arthroplasty by Gary Gratsman.
- Total joint replacement by William Betty.
- Clinical orthopaedics and related research.
- Biomechanics of joints by G R Johnson, Newcastle University, UK.
- Tribology in joint replacement by Z Jin and J Fisher, University of Leeds, UK.
- Biomaterials and the chemical environment of the body by K J Bundy, Tulane University, USA.
- Materials for joint replacement by K S Katti, D Verma and D R Katti, North Dakota State University, USA.
- Regulatory issues affecting joint replacement: the case of the UK E Damien, MHRA, B Paul, Kyiv Medical Academy, S M Damien and C S Damien, QMUL, UK.
- Adult Reconstruction by Berry, Daniel J.; Steinmann, Scott P.; Tornetta, Paul; Einhorn, Thomas A. Publication Date: 01 Jun 2007
- Adult Reconstruction and Arthroplasty by Garino, Jonathan P.; Beredjiklian, Pedro K Publication Date: 10 Oct 2007
- Campbell's Operative Orthopaedics E-dition - 11th Revised edition by Canale, S.Terry; Beaty, James Publication Date: 07 Dec 2007
- Hip Resurfacing: Principles, Indications, Technique and Results by Amstutz, Harlan C. Publication Date: 12 Apr 2008
- Implant Wear in Total Joint Replacement: Clinical and Biological Issues, Material and Design Considerations: 2000 by Wright, Timothy M.; Goodman, Stuart B. Publication Date: 30 Apr 2002.
- Interfaces in Total Hip Arthroplasty by Learmonth, Ian D.
- Operative Arthroscopy - 3rd Revised edition by McGinty, John B.; Burkhart, Stephen S.; Jackson, Robert W.; Johnson, Donald H.; Richmond, John C. Publication Date: 01 Dec 2002

- Hip Arthroplasty: Minimally Invasive Techniques and Computer Navigation by Dorr, Lawrence D. Publication Date: 11 Nov 2005
- Revision Total Knee Arthroplasty by Whiteside, Leo A Publication Date: 31 Aug 2003

8. *List of Journals:*

- Journal of arthroplasty.
- Journal of Bone and Joint Surgery.
- Orthopaedic Clinics of North America.
- Arthroplasty Journal.
- Arthroscopy: the journal of arthroscopy and related surgery
- Foot and ankle clinics
- Gait and posture
- Journal of hand surgery
- Journal of shoulder and elbow surgery
- Operative techniques in orthopaedics
- Seminars in arthroplasty
- Orthopaedics and trauma.