

Syllabus and Curriculum
of
Diploma in Orthopaedic and Plaster
Technician course

Uttar Pradesh State Medical Faculty, Lucknow.

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OBJECTIVES OF THE COURSE

To prepare a Orthopaedic and Plaster Technician who –

- Can assist all types of plasters ,casts, splints and immobilization techniques.
- Can prepare OT before surgery including process of sterilization.
- Can assist common orthopaedic surgeries to respective surgeons as first assistant.
- Can use C-Arm and other imagings effectively.
- Can take care of patient in post operative room.
- Can read relevant X rays.
- Can maintain all records.
- Can do CPR.
- Can perform basic nursing procedures like IV/IM/SC injections, IV cannulation, Nebulization, catheterization ,Oxygen therapy, badaging, dressings.

Outline of Curriculum of Diploma in Orthopaedic and Plaster Technician course

FIRST YEAR

THEORY (Classes: 9 AM to 12 Noon)

First paper : Syllabus covers -

1. General Anatomy & Physiology .
2. Only basics of relevant Pathology, Pharmacology (including anaesthetic agents) & Microbiology.

Second paper : Syllabus covers -

1. Detailed Osteology, Myology, Neurology, joints and radiological Anatomy.
2. Hand hygiene & prevention of cross infection.
3. Basics life support (BLS) & Cardio-pulmonary resuscitation (CPR).

FIRST YEAR

PRACTICAL (Classes: 1 PM to 4 PM)

Practical classes will be after lunch; from 1 PM to 4 PM.

Students must present in the hospital/ OT for practicals.

During first year, they should be there only as “Observers” in practical classes and hospital for basic nursing and orthopaedics related procedures and surgeries.

Following subjects must be taught; though there will not be any exam from these-

1. Basic Computer skills.
2. Basic English.
2. **Soft skills like** - Interpersonal relationship skills & moral education.

Outline of Curriculum
of
Diploma in Orthopaedic and Plaster Technician
course

SECOND YEAR

THEORY (classes:9 AM to 12 Noon)

First paper : Syllabus covers -

1. Details about different fractures and orthopaedic diseases.
2. Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization,, catheterisation, IV infusion.

Second paper : Syllabus covers -

1. Details of different plaster techniques and Orthopaedic surgeries and use of C -arm..
2. Basics of CSSD & sterilization practices, biomedical waste management.
3. Basic biomedical engineering physics of OT equipments & instrument.

SECOND YEAR

PRACTICAL (classes:9 AM to 12 Noon)

Practical exams syllabus should cover-

1. All types of immobilization, use of splints, plasters, casts, dressing.
2. Help in all types of Closed and open reductions.
3. Performing relevant X rays and read those.
4. Help as first assistant during orthopaedic surgeries.
5. Use of C arm.
6. Knowledge and use of Orthopaedic implants.
7. Aseptic OT techniques.

ELIGIBILITY CRITERIA FOR ADMISSION & DURATION OF THE COURSE

COURSE DURATION:-

- It is 2 years, **full time** Diploma Course.

ELIGIBILITY:-

- Candidate must have passed 12th with
Physics, Chemistry, Biology
Or
Physics, Chemistry, Maths
with 35% marks in Intermediate exams.
(From UP board or any other recognised board).
- Candidate must have completed age of 17 years of age as on 31st December of admission year. There is no maximum age limit for the admission.

SCHEDULE OF EXAMINATION

FIRST YEAR

<u>Paper</u>	<u>Subjects</u>	<u>Mark</u>	<u>Internal Assessment Marks</u>	<u>Total Marks</u>	<u>Pass Marks</u>	<u>Duration of Exam.</u>
<u>First Paper Theory</u>	1.General Anatomy & Physiology . 2.Only basics of relevant Pathology, Pharmacology (including anaesthetic agents) & Microbiology.	75	25	100	50	3 Hours
<u>Second Paper Theory</u>	1.Detailed Osteology ,Myology, Neurology ,joints& radiological Anatomy. 2.Hand hygiene & prevention of cross infection. 3.Basics life support (BLS) & Cardio-pulmonary resuscitation (CPR).	75	25	100	50	3 Hours
<u>Practical</u>	Oral & Practical	75	25	100	50	3 Hours

SECOND YEAR

<u>Paper</u>	<u>Subjects</u>	<u>Mark</u>	<u>Internal Assessment Marks</u>	<u>Total Marks</u>	<u>Pass Marks</u>	<u>Duration of Exam.</u>
<u>First Paper Theory</u>	1.Details about different fractures and orthopaedic diseases. 2.Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization,, catheterisation, IV infusion.	75	25	100	50	3 Hours
<u>Second Paper Theory</u>	1.Details of different plaster techniques and Orthopaedic surgeries and use of C arm. 2.Basics of CSSD & sterilization practices, biomedical waste management. 3.Basic biomedical engineering physics of OT equipments & instrument.	75	25	100	50	3 Hours
<u>Practical</u>	Oral & Practical	75	25	100	50	3 Hours

SCHEDULE OF COURSE

(List of holidays, Total hours, Subject wise allotment of hours)

- **List of Holidays:-**

Sundays	- 52 days
Summer vacation	- 10 days
Winter vacation	- 10 days
Gazetted holidays	- 23 days
Preparatory holidays	- 10 days
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Total Holidays	- 105 days
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- **Total Hours :-**

Theory classes per day	- 3 Hours
Practical classes per day	- 3 Hours
Total hours per day	- 6 Hours
Total days & hours in One year (after deduction of holidays)	- 260 days or - 1560 Hours

Subject wise allotment of hours

FIRST YEAR

Theory (780 Hours) Practical (780 Hours)

<u>First Paper Theory</u>	1.General Anatomy & Physiology .	200 Hrs
	2.Only basics of relevant Pathology, Pharmacology (including anaesthetic agents) & Microbiology.	120 Hrs
<u>Second Paper Theory</u>	1.Detailed Osteology ,Myology, Neurology ,joints & radiological Anatomy.	350 Hrs
	2.Hand hygiene & prevention of cross infection.	10Hrs
	3.Basics life support (BLS) & Cardio-pulmonary resuscitation (CPR).	30 Hrs
<u>Third Paper Practical</u>	As described in curriculum	780 Hrs
<u>Theory: Other Subjects</u> (These subjects must be taught, though there will not be any exam from these)	1.Basic Computer skills.	30 Hrs
	2.Basic English.	30 Hrs
	3.Soft skills like - Interpersonal relationship skills & moral education	10 Hrs

SCHEDULE OF COURSE

Subject wise allotment of hours

SECOND YEAR

Theory (780 Hours) Practical (780 Hours)

<u>First Paper Theory</u>	1.Details about different fractures and orthopaedic diseases.	450 Hrs
	2.Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization, IV infusion	20 Hrs
<u>Second Paper Theory</u>	1.Details of different plaster techniques and Orthopaedic surgeries and use of C arm.	250Hrs
	2.Basics of CSSD & sterilization practices, biomedical waste management.	30Hrs
	3.Basic biomedical engineering physics of OT equipments & instrument.	30Hrs
<u>Third Paper Practical</u>	As described in curriculum	780 Hrs

Diploma in Orthopaedic and Plaster Technician course

PAPER 1st Theory	Topics	Hours.
1.General Anatomy & Physiology .	1. General Orientation about parts of human body. Various terms used in Anatomy. Total numbers of bones, their names & location. Basic idea about organization of body ,from cell to organ systems.	15 Hrs
	2. Structure of Animal cell, Cell organelles & their functions	05 Hrs
	3. Human tissue, types, structure & functions.	10 Hrs
	4. Skin & appendages.	02 Hrs
	5. GIT: only basics.	10 Hrs
	6. Respiratory tract:only basics.	20 Hrs
	7. Urinary tract: only basics.	05 Hrs
	8. Male reproductive system:only basics.	05 Hrs
	9. Female reproductive system: only basics.	05 Hrs

Details of Curriculum for First Year
Diploma in Orthopaedic and Plaster Technician course

PAPER 1st Theory	Topics	Hours.
1.General Anatomy & Physiology .	10. Endocrine system: only basics.	15 Hrs
	11. Gross structure of brain & spinal cord. Functions of different parts of brain & spinal cord.(Details not required.)	30 Hrs
	12. Blood: Composition & Functions. Details about Plasma, RBCs, WBCs, Platelets, Clotting system.	20 Hrs
	13. Gross structure & functions of sensory Organs - Eye, Ear, Nose, Tongue.(Details not required).	20 Hrs
	14. Basic gross structure of heart, vessels opening into heart & Leaving the heart. Arterial & Venous tree of body.	25 Hrs
	15. Lymphatic system: Structure & Functions.	10 Hrs
	16. Immune system: Components & various mechanisms of defense.	05 Hrs

**Details of Curriculum for First Year
Diploma in Orthopaedic and Plaster Technician course**

PAPER 1st Theory	Topics	Hours.
2.Only basics of relevant Pathology, Pharmacology (including anaesthetic agents) & Microbiology.	1. Basic steps of Acute & chronic inflammation and Healing of wound.	10 Hrs
	2. Basics of Necrosis & apoptosis.	10 Hrs
	3. Basics of Shock.	05 Hrs
	4. Basics of wound and fracturehealing.	15 Hrs
	5. Modes of disease transmission & prevention of infection.	05 Hrs
	6. Sterilization & methods of sterilization used in hospitals.	10 Hrs
	7. Basic idea about types of Bacteria, Virus, Fumgi.	20 Hrs
	8. Routes of drug administration.	02 Hrs
	9. Adverse effects & side effects of drugs.	02 Hrs
	10. Basic idea of Analgesics : Opioid & NSAIDs.	05 Hrs
	11. Basic idea of Drugs use in Cough & expectoration.	01 Hrs
	12. Basic idea of Drugs used in B.asthma & COPD.	02 Hrs
	13. Basic idea of Anti Microbials.	20 Hrs
	14. Basic idea of Anti H-1 Histaminics & Corticosteroids.	02 Hrs
	15. Anaesthetic agents(LA&GA).	10 Hrs
	16. Muscle relaxants.	03 Hrs

Details of Curriculum for First Year
Diploma in Orthopaedic and Plaster Technician course

PAPER 2nd Theory	Topics	Hours.
1.Detailed Osteology ,Myology, Neurology, joints & radiological Anatomy.	1. Details about bones of body, including surface anatomy.	100 Hrs
	2. Major muscles: location, origin, insertion, action and nerve supply.	130 Hrs
	3. Brachial, lumbar and sacral plexi,Cranial and spinal nerves.	40 Hrs
	4. Details about all major joints of body and basics of other joints.	40 Hrs
	5. X rays of all bones and joints.	25 Hrs
	6. CT scans and MRI of various joints.	10 Hrs
	7. DEXA scan.	05 Hrs.

Details of Curriculum for First Year
Diploma in Orthopaedic and Plaster Technician course

PAPER 2nd Theory	Topics	Hours.
2.Hand hygiene & prevention of cross infection.	1. Hand hygiene & method of Hand washing.	05 Hrs
	2. Prevention of cross infection.	05 Hrs

PAPER 2nd Theory	Topics	Hours.
3.Basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).	1. Code blue.	05 Hrs
	2. Details of basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).	25 Hrs

Curriculum
for
Practical :- First Year
Diploma in Orthopaedic and Plaster Technician course

	Topics
Practical	1. Hand wash & scrubbing.
	2. Recording vitals.
	3. IV, IM injection, IV Cannulation, Urinary catheterization.
	4. Glove,Gown, Personal protection equipments.
	5. Assisting immobilization, splint, casts and plaster.
	6. Common bandaging and dressings.
	7. Assistance in OT.

**Details of Curriculum for Second Year
Diploma in Orthopaedic and Plaster Technician course**

PAPER 1st Theory	Topics	Hours.
1.Details about different fractures and orthopaedic diseases.	1. History taking. Orthopaedic examination of the patient. Filling Case-sheet. Common clinical words.	15 Hrs
	2. Definition, types and classification of fractures.	10 Hrs
	3. Healing of fractures.	10 Hrs
	4. General principles of fracture treatment (Immobilization, closed reduction, traction, open reduction and use of implants etc)	15 Hrs
	5. Splints and traction.	10 Hrs
	6. Complications of fracture.	20 Hrs
	7. Osteomyelitis.	10 Hrs
	8. CTEV.	10 Hrs
	9. Dislocations of common joints.	20 Hrs
	10. PIVD and other spinal diseases.	20Hrs
	11. #clavicle.	05 Hrs
	12. .# Scapula.	05 Hrs
	13. # Humerus: neck, shaft, supra condylar, inter condylar, medial and lateral condyle.	30 Hrs
	14. # Both bones forearm.	10 Hrs
	15. Colles' #, Smith #.	10 Hrs
	16. Scaphoid #.	05 Hrs
	17. # of hand.	15 Hrs

**Details of Curriculum for Second Year
Diploma in Orthopaedic and Plaster Technician course**

PAPER 1st Theory	Topics	Hours.
1.Details about different fractures and orthopaedic diseases.	18. Pelvis #.	10 Hrs
	19. # Femur : Neck, trochanteric, shaft, inter trochanteric.	20 Hrs
	20. # Tibia and Fibula.	10 Hrs
	21. # Patella.	05 Hrs
	22. Menisceal and ligament injuries of knee joint.	15 Hrs
	23. Ankle joint injuries.	20 Hrs
	24. # of foot.	20 Hrs
	25. Injury to ligaments and tendons.	20 Hrs
	26. TB of bone and spine.	10 Hrs
	27. Basics about bone tumors.	10 Hrs
	28. Spinal injuries.	20 Hrs
	29. Osteoarthritis, Rheumatoid arthritis, Gouty arthritis and septic arthritis, ankylosing spondylitis.	20 Hrs
	30. Tennis and Golfers elbow, carpal tunnel syndrome, frozen shoulder, plantar fasciitis.	10 Hrs
	31. Rickets, Osteomalacia and Osteoporosis.	10 Hrs
	32. Cerebral palsy.	05 Hrs
33. Poliomyelitis.	05 Hrs	
34. Joint replacement surgeries.	10 Hrs	
	35. Amputation and prosthesis	20 Hrs

**Details of Curriculum for Second Year
Diploma in Orthopaedic and Plaster Technician course**

PAPER 1st Theory	Topics	Hours.
2.Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization, IV infusion	1. Temperature monitoring & Fever.	02 Hrs
	2. Pulse monitoring.	01 Hr
	3. BP monitoring.	01 Hr
	4. Respiration monitoring.	01 Hr
	5. Types of Injection routes.	01 Hr
	6. IM Injection.	01 Hr
	7. IV Injection.	01Hr
	8. SC Injection.	01 Hr
	9. Oxygen Therapy.	03 Hrs
	10. Nebulization	01 Hr
	11. IV Infusion (Also with infusion pump).	01 Hr
	12. Care of Unconscious patient.	02 Hrs
	13. Urinary Catheterization.	03 Hrs

**Details of Curriculum for Second Year
Diploma in Orthopaedic and Plaster Technician course**

PAPER 2nd Theory	Topics	Hours.
1.Details of different plaster techniques and Orthopaedic surgeries and use of C arm.	1. First aid management in a case of fracture.	20 Hrs
	2. Helping in imaging.	10 Hrs
	3. Various immobilization techniques.	20 Hrs
	4. Uses of different splints.	20 Hrs
	5. Using various types of tractions.	20 Hrs
	6. Various techniques of closed and open reduction.	50 Hrs
	7. Performing various casts , slabs and plasters.	40 Hrs
	8. Use of C arm in OT.	05 Hrs
	9. Positioning of patients during various Orthopedic surgeries.	15 Hrs
	10. Assisting various orthopedic surgeries.	20 Hrs
	11. Assisting Arthroplastic and arthroscopic surgeries.	20 Hrs
	12. Use of drills	10 Hrs

**Details of Curriculum for Second Year
Diploma in Orthopaedic and Plaster Technician course**

PAPER 2nd Theory	Topics	Hours.
2. Basics of CSSD & sterilization practices, biomedical waste management.	1. Various methods of Sterilization.	10 Hrs
	2. Aseptic practices.	10 Hrs
	3. Basics of Biomedical waste management.	10 Hrs

PAPER 2nd Theory	Topics	Hours.
3. Basic biomedical engineering physics of OT equipments & instrument.	1. X ray machine	10 Hrs
	2. C arm machine.	05 Hrs
	3. Orthopedic implants.	10 Hrs
	4. Drill machines.	05 Hrs

Curriculum
for
Practical :- Second Year
Diploma in Orthopaedic and Plaster Technician course

Practical	Topics
	1. First aid management in a case of fracture.
	2. Helping in imaging.
	3. Various immobilization techniques.
	4. Uses of different splints.
	5. Using various types of tractions.
	6. Various techniques of closed and open reduction.
	7. Performing various casts, slabs and plasters.
	8. Use of C arm in OT.
	9. Positioning of patients during various Orthopedic surgeries.
	10. Assisting various orthopedic surgeries.
	11. Assisting Arthroplastic and arthroscopic surgeries.
	12. Use of drills.