NATIONAL BOARD FOR TECHNICAL EDUCATION

NATIONAL DIPLOMA

AND

HIGHER NATIONAL DIPLOMA

IN

PROSTHETICS AND ORTHOTICS TECHNOLOGY

CURRICULUM AND COURSE SPECIFICATIONS

PLOT 'B' BIDA ROAD, PMB 2239
KADUNA
2005

PROGRAMME: PROSTHETICS AND ORTHOTICS TECHNOLOGY
NATIONAL DIPLOMA

GOAL:
On completion of this programme, the diplomate will be able to assist in
assembling and fitting of orthopaedic appliances in conformity with the prescription of the physician

OBJECTIVES:
On completion of this programme, the diplomate should be able to:

1.0 Fabricate orthopaedic appliances under supervision, of a technology/prosthetist/orthotist
2.0 Identify component parts of orthopaedic appliances.
3.0 Interprete specifications for orthopaedic appliances.
4.0 Assist in assembling and fitting of orthopaedic appliances.
5.0 Produce basic orthopaedic appliances.
6.0 Maintain orthopaedic appliances.

DURATION:
The National Diploma (ND) programme is terminal. The programme is of two years duration of four semesters of 15 weeks each and total of 1800 contact hours.

STRUCTURE:
The training programme consists of
ND – two years in the institution and one year compulsory supervised clinical attachment. This qualifies the diplomate as Prosthetics/Orthotics Technician registrable with the professional body.

ENTRY QUALIFICATION:
Minimum of four O'Level credits at GCE, WASC Or NECO in the following subjects at not more than two sittings;

1 credit in Biology or Health Science
1 credit in Physics, Chemistry or Technical Drawing
2 credits in any other subjects

At least passes in mathematics and English language are compulsory.

PROGRAMME: PROSTHETICS AND ORTHOTICS TECHNOLOGY
HIGHER NATIONAL DIPLOMA

DURATION: Two Years (Four Semesters)

GOAL: To produce Prosthetic and Orthotic Technologist who will be capable of designing, producing, and fitting prostheses/orthoses on patients in conformity with the prescription of the physician.

OBJECTIVES:
On completion of this programme, the diplomate should be able to:-

1.0 Design all forms of prostheses/orthoses.
2.0 Fabricate prostheses and orthoses.
3.0 Assemble component parts of prostheses/orthoses.
4.0 Fit prostheses/orthoses
5.0 Assess the appropriateness of prostheses/orthoses.
6.0 Maintain prostheses/orthoses
7.0 Participate in clinical assessments of prosthetics/orthotics cases.
8.0 Provide technical backup in research.
9.0 Participate in training of lower manpower in Prosthetics/Orthotics.

STRUCTURE:

The HND programme lasts for two years. This qualifies the diplomate for registration as Prosthetics/Orthotics Technologist.

ENTRY QUALIFICATION:

Candidates that have successfully completed National Diploma in Prosthetics/Orthotics or related programmes with minimum of lower credit pass plus a minimum of one year clinical attachment in a recognized institution.

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PROSTHETICS AND ORTHOTICS TECHNOLOGY
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ND 1 – SEMESTER I CURRICULUM

CODE	COURSE	THEORY	PRACTICALS	TOTAL CONTACT HOURS	UNITS
NUR 111	Human Anatomy and Physiology I	15	45	60	3.0
MTH 112	Algebra and elementary Trigonometry	30	-	30	2.0
PTD 111	Technical Drawing	-	60	60	3.0
GLT 211(viii)	Wood and Metal work Vacuum Techniques	-	30	30	2.0
BPH 111	Mechanics and Properties of Matter and heat energy	30	45	75	3.0
POT111	Materials Technology I	15	-	15	1.0
POT 112	First Aid	-	30	15	1.0
COM 111	Introduction to Computing	30	-	30	2.0
GNS 102	Communication in English I	30	-	30	2.0
POT 114	Therapeutic skills (PT, OT, ST)	15	-	15	1.0
POT	Clinical practice	-	15	15	1.0
	TOTAL			375	21.0

Code	**Syllabus**
NUR	General Nursing
MTH	Basic Science (Mathematics)
PTD	Basic Science (Technical Drawing)
GLT	Science Laboratory Technology (General Laboratory Techniques)
BPH	Basic Sciences (Physics)
COM	Computer Science
GNS	General Studies

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ND 1 – SEMESTER II

CODE	COURSE	THEORY	PRACTICALS	TOTAL CONTACT HOURS	UNITS
NUR 121	Human Anatomy and Physiology II	15	45	60	2.0
POT 121	Materials Technology II	15	30	45	2.0
POT 122	Biomechanics I	15	30	45	2.0
POT 123	Lower limb Orthoses I	15	60	75	3.0
POT 124	Spinal and Upper limb Orthoses 1	15	45	60	2.0
POT 125	Plaster and Casting Techniques I	15	45	60	2.0
POT 126	Orthopaedic Pathology I	15	-	15	1.0
POT 127	Early detection of disabilities	15	-	15	1.0
GNS 202	Communication in English II	30	-	30	2.0
	TOTAL			**405**	**17.0**

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ND I1 – SEMESTER I

CODE	COURSE	THEORY	PRACTICALS	TOTAL CONTACT HOURS	UNITS
POT 211	Lower Limb Orthoses II	15	60	75	3.0
POT 212	Spinal and Upper limb Orthoses II	15	45	60	2.0
POT 213	Biomechanics II	15	30	45	2.0
POT 214	Prosthetics and Orthotics Components and Production	15	45	60	2.0
POT 215	Plaster Casting Techniques II	15	45	60	2.0
POT 216	Lower Limb Prostheses I	15	60	75	3.0
POT 217	Orthopaedic Pathology II	15	30	45	2.0
POT 218	Traumatology I	15	30	45	2.0
GNS 213	Introduction to Medical Sociology	30	-	30	2.0
	TOTAL			**495**	**20.0**

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ND I1 – SEMESTER II

CODE	COURSE	THEORY	PRACTICALS	TOTAL CONTACT HOURS	UNITS
POT 221	Lower Limb Prostheses II	15	60	75	3.0
POT 222	Upper Limb Prostheses	15	45	60	2.0
POT 223	Traumatology II	15	30	45	2.0
POT 224	Therapeutic Skills II (Splintage, slings and	15	45	60	2.0
POT 225	bandages)	-	30	30	1.0
POT 226	Clinical Practice I	-	-	-	1.0
POT 227	Seminar	-	-	-	4.0
DTH 217	Project	15	-	15	1.0
COM 112	Radiography	30	45	75	3.0
GNS 228	Computer Packages I	30	-	30	2.0
	Research Methods				
	TOTAL			390	21.0

DTH - Dental Technology

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HND I SEMESTER I CURRICULUM

CODE	COURSE	THEORY	PRACTICALS	TOTAL CONTACT HOURS	UNITS
POT 311	Biomechanics III	45	15	60	2.0
POT 312	Functional Anatomy I	15	45	60	2.0
POT 313	Orthopaedic Pathology III	-	30	30	2.0
POT 314	Lower Limb Prosthetics	30	45	75	3.0
POT 315	Clinical Practice II	-	30	30	2.0
HIM 224	Hospital Statistics	15	-	15	1.0
COM 311	Operating Systems I	15	30	45	2.0
GNS 301	Use of English III	30	-	30	2.0
	TOTAL			345	16.0

HIM - Health Information Management
COM - Computer Science
STA - Statistics
GNS - General Studies

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HND I SEMESTER II

CODE	COURSE	THEORY	PRACTICALS	TOTAL CONTACT HOURS	UNITS
POT 321	Functional Anatomy II	15	-	15	1.0
POT 322	Biomechanics IV	15	60	75	3.0
POT 323	Lower Limb Orthotics	30	45	75	3.0
POT 324	Upper Limb and Spinal Orthotics	30	45	75	3.0
POT 325	Ethics in Prosthetics and Orthotics Practice	15	-	15	1.0
POT 326	Detection of Disabilities	15	-	-	1.0
COM 321	Operating System II	30	45	75	3.0
NUD 435	Research Methodology	15	-	15	1.0
GNS	Entrepreneurship Skills	30	-	30	2.0
	TOTAL			**375**	**19.0**

NUD - Nutrition and Dietetics

PROSTHETICS AND ORTHOTICS TECHNOLOGY
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HND II SEMESTER I

CODE	COURSE	THEORY	PRACTICALS	TOTAL CONTACT HOURS	UNITS
GLT 301	Laboratory Management (P and O)	30	-	30	2.0
POT 411	Upper Limb Prosthetics	30	45	75	3.0
POT 412	Electrotechnology	15	5	20	1.0
POT 413	Clinical Practice III	15	30	45	2.0
PHN 311	Public Health and Primary Health Care	30	-	30	2.0
STA 416	Medical Statistics	30	-	30	2.0
COM 411	Operating Research	15	30	45	2.0
GNS 411	Introduction to Psychology	45	-	45	3.0
	TOTAL			**320**	**17.0**

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HND II SEMESTER II

CODE	COURSE	THEORY	PRACTICALS	TOTAL CONTACT HOURS	UNITS
POT 421	General Prosthetics Practice	30	60	90	4.0
POT 422	General Orthotics Practice	30	60	90	4.0
EHT 414	Public Health Laws	-		15	1.0
POT 424	Seminar	15	-	15	1.0
POT 425	Project	15	-	-	6.0
GNS 121	Citizenship Education II	-	-	30	2.0
		30			
	TOTAL			**240**	**18.0**

EHT - Environmental Health Technology

PROGRAMME: NATIONAL DIPLOMA IN PROSTHETICS AND ORTHOTICS TECHNOLOGY			
COURSE: MATERIALS TECHNOLOGY I			
CODE: POT 111	**TITLE:**		
DURATION: 15hrs	**THEORY:**	**TUTORIALS**	**PRACTICALS**
UNITS: 2.0			
COURSE GOAL: This course is designed to enable the student understand the characteristics and properties of materials commonly used in prosthetics and orthotics.			
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:			
1.0 Know the materials commonly used in prosthetics and orthotics. 2.0 Know the characteristics of materials commonly used in prosthetics and orthotics. 3.0 Know the use of specific materials in prosthetics and orthotics.			

CODE: POT 111	TITLE: Materials Technology I		HOURS: 30	
General Objective: 1.0 Know the materials commonly used in prosthetics and orthotics				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Identify the following materials commonly used in prosthetics and orthotics. (a) Steel and its alloys (b) Non ferrous metals and their alloys, e.g. aluminum, aluminum, etc. (c) Plastics, thermoforming, thermosetting, composites (d) Wood (e) Leather (f) Plaster of Paris (g) Adhesives (h) Elastic	Show the materials to the students and explain their uses.	Identify the materials.	

CODE: 111	**TITLE: Materials Technology I**			**HOURS: 30**
General Objective: 2.0 Know the characteristics of materials commonly used in Prosthotics and Orthotics.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
2	2.1 Explain the chemical composition and properties of the materials listed in 1.1 above. (1) Plaster of Paris – Powdery Cao4+ H_2o (2) Steel – hard vest, tough (3) Wood – breakable, dry season (4) Aluminum etc make able (5) Leather etc soft, hide/skin (6) Plastic – breakable, hand. 2.2 State the physical properties of the materials. (a) Metals and alloys (i) solid at room temperature (ii) has high melting point (iii) sliming when cut (iv) forms alloys (v) strong and tough (vi) can be hammered into shape (vii) good conductor of heat and electricity. Non Metals e.g. Leather, plaster of paris, plastics, adhesives, (i) Low melting and boiling point (ii) dull in appearance (iii) brittle (breakable) (iv) poor conductor of electricity 2.3 Describe the effect of acid, gases and salts on			

	(a) metals and alloys (b) non-metals used for prosthetics and orthoses. 2.4 Describe the effect of corrosion on metals for prostheses and orthoses. 2.5 Describe the difference in textures, permeability strength and weight in non-metals.			

CODE: POT 111	**TITLE: Materials Technology I**			**HOURS: 30**
General Objective: 3.0 Know the use of specific materials in prosthetics and orthotics				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 Identify the uses of metals and alloys in prosthetics and orthotic devices e.g. calipers, braces, etc 3.2 Identify the uses of plastics in prosthetics and orthotics e.g. KAFO AFO SPLINTS Etc. 3.3 Identify uses of wood in prosthetics e.g. Artificial limb Sach foot Knee piece 3.4 Identify uses of leather in prosthetics and orthotics e.g. ring padding knee pad cuff suspension orthopaedic shoes etc.			

PROGRAMME: ND PROSTHETICS AND ORTHOTICS TECHNOLOGY		
COURSE: SEMESTTER: ND I FIRST AID		
CODE: POT 112	TITLE: FIRST AID	
DURATION: 15 HRS THEORY: 15 HRS	TUTORIAL:	PRACTICALS:
UNITS: 1.0		
COURSE GOAL: The course is designed to enable the students render 1ST Aid treatment to the patients and the community.		
GENERAL OBJECTIVES: On completion of this course the diplomat should be able to:		
1.0 Understand the Basic Principles of First Aid treatment. 2.0 Know the health conditions requiring First Aid treatments. 3.0 Understand Basic Trauma Life Support process (BTLS) 4.0 Know the materials required for First Aid treatment 5.0 Know the process of First Aid treatment.		

CODE: POT 112	**TITLE: FIRST AID**	**HOURS: 15 HRS**	
General Objective: 1.0 Understand the basic principles of Aid treatment			
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the student should be able to: 1.1 Define First Aid 1.2 State the qualities of First Aider. 1.3 Describe TRIAGE and the process of TRIAGE in First Aid. TRIAGE: Is the process of sorting out cases based on severity of injuries i.e bleeding, airway problem, cardio vascular problem. 1.4 State the principles of First Aid.	Teacher defines First Aid and states the qualities of a First Aider as - Needs trainer - calmness - experience as a functional Health worker. - Give assignments - Demonstrates the process of sorting out cases based on severity. - Conducts visits at OPD, A/E and scene of …… - or accident. Teacher discusses principle.	Students list qualities of First Aids. Records the process of Triage as demonstrated. Carry out visits to A/E department to carry out Triage process. Students should carry out assignment.	Videos/TVs Slides Projectors CD packages Posters Chart writer Sketch of Triage.

CODE: POT 112	TITLE: FIRST AID	HOURS: 15HRS		
General Objective: 2.0 Know the Health conditions requiring first Aid treatment.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	2.1. List the health conditions requiring 1st Aid: i.e. - Trauma e.g. RTA etc - Non – Trauma e.g. sync opal attacks, shock, febrile conditions etc. 2.2 Identify the conditions listed in 2.1 above.	Teacher conducts visits to A/E department/OPD Discussion covers assignments.	Students to identify 1st Aid cases.	- Slides - CD – packages - Projectors - T/Vs/Videos. Same as above

CODE: POT 112	TITLE: FIRST AID	HOURS: 15HRS		
General Objective: 3.0 Understand Basic Trauma Life Support (BTLS) process.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	3.1. Define basic Trauma life support (BTLS). 3.2 Identify the levels of BTLS. - Airway/cervical spine control - Breathing - Circulation - Exposure - Neurological 3.3 Describe each level of BTLS in 3.2 above.	Teacher Discuss basic Trauma life support based on historical background and its position today Teacher gives assignments. Teacher to discuss the levels of BTLS in order of importance. Teacher discusses/lectures on BTLS Tutorial.	Students to observe levels of BTLS on patients with manifestations involving the airway, circulation neurological etc Assignment	Slides T/V/Videos CD packages

	3.4 Describe the process involved in the support and transport of injured persons.	Practical demonstration. Teacher conduct visit to A/E department.	Practically carried out by students.	Items for support and transport - vehicle type - stretcher - trolley - collars - slabs - splints.

CODE: POT 112	**TITLE: FIRST AID**		**HOURS: 15HRS**
General Objective: 4.0 Know the materials required for First Aid treatment			
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the student will be able to: 4.1 List the materials required for 1st Aid. 4.2 Identify the materials listed in 4.1 above. 4.3 Describe each material listed in 4.1 above, under the following headings:- a. Definition b. Types/uses c. Principles d. Care of material.	Teacher lists materials under the resources carried out. Discussion gives assignment Demonstration conducts visit to A/E department. Teacher gives assignments/demonstration.	Students to identify each item. Students to give description of each material and report on each.	- Bandage/gauze - Cotton wool - Iodine/spirit - Saulon/cetrimide - Scissors - Gallipots - Kidney dishes - Forceps - Splints, slings - Splintage - Sand bags - Boards flat All in a 1st Aid box - Posters - List items as in 4.1 and 4.2 above.

CODE: POT 112	TITLE: 1ST AID	HOURS: 15 HRS		
General Objective: 5.0 Know the process of First Aid treatment				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the students will be able to: 5.1 Carry out First Aid treatment, using the materials in 4.1 above.	Practical demonstration. Visit to Accident and Emergency department. - Class demonstration.	Student to get a willing patient to carryout 1st Aid treatment with use of materials.	List materials as in 4.1 and 4.2 above.

PROGRAMME: ND IN PROSTHETIC AND ORTHOTIC TECHNOLOGY		
COURSE: MATERIAL TECHNOLOGY II		
CODE: POT 121	**TITLE**:	
DURATION: 15	**TUTORIAL**: -	**PRACTICALS: 30HRS**
UNITS: 2.0		
COURSE GOAL: The course is designed to enable the students understand the processing of commonly used materials with reference to their application in prosthetics and orthotics.		
GENERAL OBJECTIVES: On completion of this course the diplomat should be able to:		
1.0 Know the source of commonly used materials in prosthetics and orthotics 2.0 Know the tools and equipment used in processing materials in prosthetics and orthotics. 3.0 Know the application of specific materials variety to different prosthetic and orthotics devices.		

CODE: POT 121 MATERIAL TECH.II	TITLE: PROSTHETICS AND ORTHOTICS	HOURS: 15 HRS

General Objective: 1.0 Know the source of commonly used materials in Prosthetics and Orthotics.

WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	At the end of the course the students will be able to: 1.1 Identify the sources of the following materials used in Prosthetics and Orthotics. **METALS** a. Steel and its alloys - Open market - Rolling mills - Tower aluminum b. **PLASTICS** - Thermoplastic industries - Smith & Nephew in S.A. Company. - Ottobock industry W/Germany. c. **WOOD** - Willo wood (seasoned goods from U.K.) - Sapele Mill d. **LEATHER** - Northern part of Nigeria e. **PLASTER OF PARTS** - Smith & Nephew (England, S.A) f. **ADHESIVES** -Open market - Foam with peddler - From industries in Nigeria.	Supervise students to identify the sources of materials used in Prosthetics and Orthotics.	Identify the sources of materials used in Prosthetics and Orthotics e.g. steel and its alloys, plastics, wood, leather, plaster of paris (POP), adhesives, etc.	Steel and its alloys s plastics wood leather plaster of Paris (POP) adhesives.

CODE: POT 121	TITLE:	HOURS: 15 HRS	
General Objective: 2.0 Know the tools and equipment used in processing materials in Prosthetics and Orthotics.			
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the students will be able to: 2.1 Identify the following tools and equipment used in Prosthetic and Orthotics. a. Vice to hold materials b. Hard saw to cut c. Guillotine machine to cut d. Sheer machine to cut e. Grinding stones/machine f. Welding machine g. Vacuum machine h. Suction machine i. Oven j. Drill press m/c k. Lathe machine l. Craftman carver m. Skiving machine 2.2 Select material for the machine in 2.1 above. 2.3 Operate the machines in 2.1 above with material selection. e.g. plastic material leather “ metal “ foam “ 2.4 Maintain the machines listed in 2.1 above.	Supervise students to identify the tools and equipment used in Prosthetics and Orthotics. Supervise students to operate the machines listed above. Supervise students to maintain the machines listed above.	Operate the machines listed above. Maintain the machines listed above.	Vice Hard saw Sheer machine Grinding machine Welding machine Vacuum machine Suction machine Oven Drill press m/c Lathe machine Swing machine Craftman carver

CODE: POT 121	TITLE:	HOURS: 15 HRS		
General Objective: 3.0 Know the application of specific materials variety to different Prosthetic and Orthotic device				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the students will be able to: **METALS** 3.1 Identify materials to make calipers and braces. **LEATHER** 3.2 Identify materials to make Orthopaedic shoes, knee pads, etc. 3.3 Identify materials to make plaster cast technique. **THERMOPLASTER MATERIALS** 3.4 Identify materials to mould socket and spaces. **WOOD** 3.5 Identify materials to carve socket in limbs. **FOAM (PEDILENE)** 3.6 Identify materials to make extension in devices for cosmetic light finish. **ADHESIVES** 3.7 Identify materials to form wood, leather plastic, etc.	3.5 Supervise the students to identify materials to carve socket in limbs 3.5 Supervise the students to identify materials to make extension in devices for cosmetic finishing. 3.7 Supervise students to identify materials to join woods, leather, plastic, etc.	3.5 Identify materials to carve socket in limbs. 3.6 Identify materials to make extension in devices for cosmetic finishing. 3.7 Identify materials to join wood, leather, plastics, etc.	

PROGRAMME:	**NATIONAL DIPLOMA IN PROSTHETICS AND ORTHOTICS TECHNOLOGY**		
COURSE:	Biomechanics I		
CODE:	POT 122	**TITLE:**	
DURATION:	45 HRS THEORY 15 HRS	TUTORIALS	PRACTICALS 30 HRS
UNITS:	2.0		
COURSE GOAL:	This course is designed to enable the student understand the interplay of forces in human locomotion.		
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:			
1. 0	Know the anatomical planes and reference points of the human body		
2.0	Know the anatomical joints, types, their functions and interaction		
3.0	Know muscle physiology and biomechanics in relation to joint functions in the acts of normal motion.		

CODE: POT 122	TITLE: ND Prosthetics and Orthotics	HOURS: 60		
Objectives: 1.0 Know the anatomical planes and reference points of the human body				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	1.1 Identify the anatomical parts of the human body; 1.2 Explain the following human anatomical terms - coronal plane - saggital plane - medial - lateral - superior - inferior 1.3 Draw annotated diagram of the human limbs – leg to show bones or joints; muscles 1.4 Draw annotated diagram of the human to body to show bones; limbs and muscle. 1.5 Describe the function of the various bones, joints and muscles and their interaction in human movement. 1.6 Identify all the planes and reference point of the human body.	1.1 Supervise the students to identify parts of human body using model 1.2 Explain the functions of the various parts of the body. 1.3 Describe the planes and reference points of the human body.	1.1 Identify the anatomical parts of the body. 1.2 Draw the major parts of the body.	Human Skeleton, Audio-visual aids pencil, eraser papers, etc.

CODE:	TITLE:	HOURS: 60		
General Objectives: 2.0 Know the anatomical joints, types, their functions and interaction				1.0
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	2.1 Identify types of joints in the body. E.g. Upper & Lower limb joints; 2.2 Explain the functions of the various joints in the body. 2.3 Explain the interactive biomechemical forces of the body. 2.4 Identify the various joints of the body using the full skeleton.	2.1 Explain the types of joints in the body. 2.2 Describe the functions of the various joint of the body. 2.3 Describe the joints of the body.	1.1 Identify the various joints of the body and activities.	Human Skeleton

CODE:	TITLE:			HOURS: 60
General Objectives: 3.0 Know muscle physiology and biomechamics in relation to joint functions.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	3.1Identify the major muscles of the upper and lower limbs. 3.2Describe functions of the action of the various muscles of the body in 3.1 above 3.3Explain the agonistic and antagonists of the muscle action in the upper and lower limbs of the human body.	3.1 Explain the major muscles of the upper and lower limbs. 3.2 Describe the activities of the various muscles of the limbs.	1.1 Demonstrate the muscle action in upper and lower limb joints.	Human beings and audio visuals like recorded cassettes.

PROGRAMME: PROSTHETICS AND ORTHOTICS TECHNOLOGY – NATIONAL DIPLOMA			
COURSE: LOWER LIMB ORTHOSES I			
CODE: POT 123		**TITLE:**	
DURATION: 75hrs	**THEORY: 15hrs**	**TUTORIALS**	**PRACTICALS: 60hrs**
UNITS: 3.0			
COURSE GOAL: The course is designed to enable the student understand the principle of making orthotic devices.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			

1.0 Know the different machines and tools used in lower limb orthoses.

2.0 Know the process of filing different objects to the required shapes and sizes in orthoses.

3.0 Understand the technique of forging in orthosis.

4.0 Know the techniques of hammering in making orthosis.

5.0 Understand the techniques of bending materials to shape in orthosis production.,

6.0 Understand the techniques of making holes on orthotic materials.

7.0 Understand the techniques of making holes on orthotic materials.

CODE: POT 123		TITLE: Lower Limb Orthoses II		HOURS: 60hrs
General Objective:				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	1.1 List all hand tools and machines used in orthosis production. 1.2 Identify the tools and machines listed in 1.1 above. 1.3 Explain the hazards involved in the use of the machines in 1.1 above. 1.4 Describe the use of the tools and machines in 1.1 above. 1.5 Explain the cleaning procedure for the tools and machines in 1.1 above. 1.6 Clean the tools and machines listed in 1.1 above. 1.7 Describe the process of wearing out of some tools and machines.	Display different types of machines and tools. Lecture/Discussion Lecture/Discussion Display charts. Lecture/Discussion Lecture/discussion.	Observe various machines in the orthotic work shop. Draw different tools and machines displayed write name of various tools and machines	Socket router Drilling machine Band saw (metal and wood) grinding stone metal vice wooden vice Charts Paper Pencil Eraser various machines and tools as above Chalk Board Chalk Charts

CODE: POT 123	**TITLE: Lower Limb Orthosis I**			**HOURS: 75hrs**
General Objective: 2.0 Know the process of filling different objects to the required shapes and sizes in orthosis				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
2	2.1 Define filing 2.2 Identify the tools and materials used in filing e.g. hand files. 2.3 Select suitable materials for filing operations. 2.4 Describe the processes of filing in orthosis. 2.5 File materials for orthosis to required shape e.g. side bars forged objects etc.	Bring different materials used in forging. File objects to different orthotic shapes.	Collect materials for filing in the orthotic work shop. File objects to different orthotic shapes.	Metal wood Knive metal wood Grinding stone metal vice Drilling machine.

CODE: POT 123	**TITLE: Lower Limb Orthosis I**			**HOURS: 60hrs**
General Objective: 3.0 Understand the techniques of forging in orthosis				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	3.1 Define forging. 3.2 List uses of forging in orthosis. 3.3 Identify the tools used in forging in orthosis e.g. 3.4 Describe the stages in forging. 3.5 Forge to produce orthotic components.	Lecture/Discussion Lecture/discussion Show various materials focused in forging. Lecture/Discussion	Demonstrate forging on different materials	Forge Metal Hammer Anvil.

CODE: POT 123	**TITLE: Lower Limb Orthosis I**			**HOURS: 60hrs**
General Objective: 4.0 Know cutting techniques in orthosis production.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
4	4.1 Explain cutting of various materials to produce orthosis. 4.2 Identify suitable metal, plastic, wood, leather for use in orthosis. 4.3 Identify the tools used in cutting in orthosis. 4.4 Cut metal used for orthosis. 4.5 Cut plastic used for orthosis. 4.6 Cut leather for orthosis. 4.7 Cut wood used for orthosis.	Lecture/Discussion Show wood, metal leather and plastic used in orthosis. Cut metal wood, leather and plastic	Cut metal, leather wood and plastic to produce orthosis.	Scissors Metal Wood Plastic Leather Knives Cutter shear

CODE: POT 123	**TITLE: Lower Limb Orthosis I**			**HOURS: 60hrs**
General Objective: 5.0 Know the techniques of hammering in making orthosis				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
5	5.1 Describe various methods of hammering in orthosis. 5.2 Identify various tools for hammering in orthosis. 5.3 Hold the hammer. 5.4 Make orthotic parts using the hammer.	Lecture/Discuss Hold hammer in the correct way Make orthosis using hammer	Hammer metals Make orthosis using hammer	Workshop Hammer Metal Nail workbench

CODE: POT 123	**TITLE: Lower Limb Orthosis**		**HOURS: 60hrs**	
General Objective: 6.0 Understand the techniques of bending materials to shape in orthosis production.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
6	6.1 Describe the various techniques used in bending orthotic materials to shape. 6.2 Identify tools for bending in orthotic production. 6.3 Bend various materials to different shapes to produce orthosis.	Lecture Discussion Bend materials for bending.	Select materials for bending. Bend materials to produce orthosis.	Flat bars Round metals Aluminum Bending irons hammer metal vice.

CODE: POT 123	**TITLE: Lower Limb Orthosis**		**HOURS: 60hrs**	
General Objective: 7.0 Understand the techniques of making holes in orthotic materials.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
7	7.1 Explain the importance of holes in orthosis. 7.2 Describe how holes are made on different orthotic materials. 7.3 Make holes on relevant orthotic materials.	Lecture Discussion Lecture Discussion Make holes on various orthotic materials.	Make holes on various orthotic materials.	Drilling machine Drill bits Machine vice Revolving punch Metal Leather Plastic Wood.

PROGRAMME: PROSTHETICS AND ORTHOTICS – NATIONAL DIPLOMA			
COURSE: SPINAL AND UPPER LIMB ORTHOSIS I			
CODE: POT 124		**TITLE:**	
DURATION: 60 hrs	**THEORY: 15 hrs**	**TUTORIALS**	**PRACTICALS: 45hrs**
UNITS: 2.0			
COURSE GOAL: Understand produce spinal and upper limb orthoses.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0 Understand different terms used in orthotics. 2.0 Know basic materials for producing spinal upper limb orthoses. 3.0 Know the fabrication of spinal orthoses from given models. 4.0 Know the fabrication of upper limb orthoses from given modules.			

CODE: POT 124	TITLE: Spinal and Upper Limb Orthoses			HOURS: 45hrs
General Objective: 1.0 Understand different terms used in orthotics.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Define terms used in orthotics such as: (a) Orthotic (b) Orthosis (c) Orthotist (d) Orthoses 1.2 Explain the terms in 1.1 above.	Help student define the terms.		Visuals such as chalk or magnetic board.
General Objective: 2.0 Know basic materials for producing spinal and upper limb orthoses.				
2	2.1 Identify the basic materials for producing spinal and upper limb orthoses. 2.2 Explain the uses of the materials for producing spinal and upper limb orthoses.	Show materials for producing spinal and upper limb orthoses.		Flat metal bars Tape measure Plaster of paris, bandage Plaster of paris powder polythene leather

CODE: POT 124	**TITLE: Spinal and Upper Limb Orthoses**			**HOURS: 45hrs**
General Objective: 3.0 Know the fabrication of spinal orthoses.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 Identify the materials for fabricating. (a) Cervical orthosis (b) Spinal jacket (c) Lumbar corset (d) Lumbar belts. 3.2 Fabricate the orthoses in 3.1 above.	Instruct on technique of fabricating cervical, spinal, lumbar corset	Demonstrate the fabrication of spinal, cervical lumbar, orthoses.	-plaster zoted -leather -calico/khaki -strap -buckles. -web -velcro
General Objective: 4.0 Know the fabrication of upper limb orthoses from given models.				
4	4.1 Identify materials for fabricating: (a) Finger orthosis (b) Cock up splints © Aeroplane splint (d) Shoulder abduction splint. 4.2 Fabricate the orthoses in 4.1 above from a given model.	Instruct on how to fabricate finger, cock up, aeroplane and shoulder abduction splints	Demonstrate the fabrication of finger, cockup, aeroplane and shoulder abduction splints	-Leather -Metals -Plastic -Buckles -Straps.

ROGRAMME: ND PROSTHETIC AND ORTHOTIC TECHNOLOGY			
OURSE: PLASTER CASTING TECHNIQUE I			
ODE: POT 125	**TITLE:**		
URATION:	**THEORY: 15hrs**	**TUTORIALS**	**PRACTICALS: 60hrs**
NITS: 2.0			
OURSE GOAL: The course is designed to enable the students understand the uses and care of plaster of paris and other sting materials in orthopaedic management and rehabilitation.			
ENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
0 Understand the historical development, basic concept and theories relevant to orthopaedic plaster casting technique.			
0 Know the chemistry and characteristics of orthopaedic plasters (plaster of paris and synthetic plaster bandages).			
0 Understand the ideal plaster room.			
0 Know basic plaster casting equipments and tools.			
0 Know different types of plaster casts.			
0 Understand the process and procedure involved in making plaster casts.			
0 Know the care of plaster casts and patients in plaster casts.			
0 Understand the procedure of plaster cast removal.			
0 Know safety measures in the plaster casting room.			
.0 Know synthetic casting materials.			
.0 Know lifting and healing techniques in the plaster casting room.			
.0 Understand the process of making slab plaster casts for upper extremities.			
.0 Know the process of making slab plaster casts for lower extremities.			

CODE: POT 125	**TITLE: Plaster Casting Technique**	**HOURS: 60hrs**

General Objective: 1.0 Understand the historical development, basic concepts and theories relevant to orthopaedic casting technique.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Define plaster of Paris. 1.2 Outline the historical development of plaster of Paris and plaster casting. 1.3 Explain the relevance of orthopaedic plaster in the management of bone fractures. 1.4 Explain the roles of plaster technician in the management of orthopaedic and trauma conditions.	-Explain what is meant by Plaster of Paris. -Trace the origin of Plaster of Paris. -Describe the relevance of orthopaedic Plaster in the management of bone fractures. -Describe the roles of plaster technician in the management of orthopaedic and trauma conditions.		Plaster cast room plaster Bandages of various sizes – 6 cm, 4cm, 3cm. class room.
General Objective: 2.0 Know the chemistry and characteristics of orthopaedic plasters (Plaster of Paris and synthetic plaster bandages).				
2	2.1 Explain the chemical composition of plaster of Paris. 2.2 Describe the physical characteristics of plaster of Paris 2.3 Explain the uses of of plaster of paris.	-Describe the chemical composition of plaster paris. -Explain the physical characteristics of plaster of paris. -Describe the uses of plaster of paris.		

CODE: POT 125	**TITLE: Plaster Casting Technique**		**HOURS: 60hrs**	
General Objective: 3.0 Understand the ideal plaster room.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	3.1 Describe the building facility structure, ventilation, illumination, entry and exit routes of a typical plaster room. 3.2 Identify the human resources needed in the Plaster casting room. 3.3 Identify the materials needed in the plaster room such as furniture, equipment instrument etc. 3.4 Explain the financial resources and budgeting for an ideal plaster room. 3.5 Explain the system of management of the plaster room.	Explain the building facility e.g. structure ventilation etc. Supervise the students to identify the human resources needed in the plaster room. Supervise the students to identify the materials needed in the plaster room such as furniture, equipment etc. Describe the financial resources and budgeting for an ideal plaster room. Describe the system of Management of the plaster room.	Identify the human resources needed in the plaster casting room. Identify the materials needed in the plaster room such as furniture, equipment instrument etc.	Plaster room Building structure Furniture Instruments Equipment – plaster shears/cutter Plaster bender, Plaster Scissors Electric plaster saw Manual plaster saw.

CODE: POT 125	**TITLE: Plaster Casting Technique**		**HOURS: 60hrs**	
General Objective: 4.0 Know basic plaster casting equipment and tools.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
4	4.1 Identify all equipment and instrument needed in the plaster room e.g. Plaster cutter/shears. Plaster bender Plaster scissors. 4.2 Explain the use of each equipment/ instrument listed in 4.1 above. 4.3 Identify the needs for plaster casting equipment.	Supervise the students to identify all equipment and instrument needed in the plaster room. Describe the use of equipment/instrument listed in 4.1 above.	Identify all equipment and instrument needed in the plaster room e.g. plaster cutter/shears, plaster bender, plaster scissors. Identify the needs for plaster casting equipment.	Plaster room Trolleys Plaster shears/cutter Plaster bender Plaster scissors Tenor saw Water Plastic Bowls Metal bowls Water stand.
General Objective: 5.0 Know different types of plaster casts				
5	5.1 Describe different types of plaster cast application e.g. colles' cast, scaphoid cast etc. 5.2 Identify the casts listed in 5.1 above. 5.3 Explain the application of the casts in 5.1 above. 5.4 Describe the methods and preparation of the cast in 5.1 above.	-Explain different types of plaster cast application e.g. colles cast. -Supervise students to identify the casts listed in 5.1 above. -Describe the application of the casts in 5.1 above. -Explain the methods and preparation of the cast in 5.1 above.	Identify the casts different types of plaster cast application.	Colles cast Scaphoid cast Boots' cast Hanging cast "U" plaster cast Hip spica cast Mineava jacket Shoulder spice Full leg plaster cast Cylinder plaster cast.

CODE: POT 125	**TITLE: Plaster Casting Technique**		**HOURS: 60hrs**	
General Objective: 6.0 Understand the process and procedure involved in making plaster casts.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
6	6.1 Describe the methods of plaster cast making. 6.2 Soften the plaster. 6.3 Apply the plaster	-Explain the methods of plaster cast making -Supervise students to soften plaster. -Supervise students to apply the plaster cast.	-Soften the plaster cast -Apply the plaster cast.	Cast Room, Plaster Bandages, Instruments – Plaster cutter (shears) Plaster Bender Plaster scissors Marker Electric Plaster saw Manual Plaster saw Water Bowl for receiving Plaster wrappers, etc Knee props/support pillows.
General Objective: 7.0 Know the care of plaster casts and the patients in the plaster cast.				
7	7.1 Identify complications associated with use of plaster e.g. swelling compression, Damage to blood vessels, Damage to nerves. 7.2 Describe the process for dealing with the complications of plaster cast in 7.1 above. 7.3 Describe the process of care of patient in plaster cast.	-Supervise the students to identify complications associated with use of plaster. -Explain the process for dealing with the complications of plaster cast. -Explain the process of care of patients in plaster care.	Identify complications associated with use of plaster e.g. swelling, compression,. Damage to blood vessels, damage to nerves, etc.	**Plaster cast Room** Chair Water Plaster Bandages of various sizes e.g. 6 cm, 4 cm, 3 cm. Plaster Paddings – Orthoband, soff ban various sizes – 6cm, 4cm, 3cm.

CODE: POT 125	**TITLE: Plaster Casting Technique**			**HOURS: 60hrs**
General Objective: 8.0 Understand the procedure of plaster cast removal.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
8	8.1 Describe the procedure of removal of plaster cast. 8.2 Identify the instruments for plaster cast removal. 8.3 Explain possible reasons for removal of plaster cast. 8.4 Describe possible complications associated with the removal of plaster cast. 8.5 Remove plaster cast.	-Explain the procedure of removal of plaster cast. -Supervise students to identify the instruments for plaster cast removal. -Describe possible reasons for removal of plaster cast. -Explain the possible complications associated with removal of plaster cast.	Identify the instruments for plaster cast removal.	Cast room Building structure Furniture Instrument, Equipment Electric plaster saw Tenor saw Plaster shears/cutter Plaster Bender Plaster scissors.
General Objective: 9.0 Know safety measures in the plaster casting room.				
9	9.1 Identify possible hazards that may arise in the plaster room e.g. electrical wiring, slippery floor. 9.2 Identify protective wears for plaster room work. 9.3 Apply the safety precaution to hazards identifies in 9.1 above during plaster work.	-Supervise students to identify possible hazards that may arise in the plaster room. -Supervise students to identify protective wears for plaster room work. -Supervise students to apply the safety precaution to hazards identified above.	-Identify possible hazards that may arise in the plaster room. -Identify protective wears for plaster room work. -Apply the safety precaution to hazards identified in 9.1 above.	Plaster Room Electrical wiring Floor

CODE: POT 125	**TITLE: Plaster Casting Technique**			**HOURS: 60hrs**
General Objective: 10.0 Know synthetic casting materials.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
10	10.1 Identify other materials that can be used for casting. 10.2 Identify different types of synthetic casts. 10.3 List the advantages and disadvantages of synthetic casts over plaster of Paris. 10.4 Explain the chemical composition of synthetic cast 10.5 Mould synthetic casts.	-Show the students the different types of synthetic casts available. Show the difference between them. -Supervise the students to identify different types of synthetic casts available. -State the advantages and disadvantages of synthetic casts over plaster of Paris. -Describe the chemical composition of synthetic cast.	Identify the materials that can be used for casting. Identify different types of synthetic casts available in prosthesis and orthosis.	Plaster cast room Instruments and materials Audio-visual Dyna cast material Scotch cast material

CODE: POT 125	**TITLE: Plaster Casting Technique**			**HOURS: 60hrs**
General Objective: 11.0 Know lifting and handling techniques in the plaster casting room.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
11	11.1 List different types of lifts for lifting and handling of patient in plaster. 11.2 Describe mechanism of muscle contraction. 11.3 Explain the terms – posture gravity and balance. 11.4 Differentiate between lifting and dragging. 11.5 Explain the different methods of lifting and their techniques. 11.6 Identify different positions used in lifting. 11.7 Lift and handle patients in plaster cast.	-State different types of lifts for lifting and handling of patients in plaster. -Explain mechanism of muscle contraction. -Describe the term "Posture gravity and balance". -Explain the difference between lifting and dragging. -Describe the different methods of lifting and their techniques. -Supervise students to different positions used in lifting.;	Identify different positions used in lifting.	Cast room Class room Audio Visual Lifting materials Calico, stretcher Wheel chair Chair

CODE: POT 125	**TITLE: Plaster Casting Technique**		**HOURS: 60hrs**	
General Objective: 12.0 Understand the process of making slab plaster casts for upper extremities.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
12	12.1 Identify different parts of upper extremities of human being. 12.2 Describe slab plaster casts used for the management of bone fractures of upper extremities of human. 12.3 Identify the materials used in making slab of casts. 12.4 Make the following slab casts: (a) below elbow back (b) above elbow back slab (c) cock up splint (d) anterior slab	Supervise the student to identify parts of upper extremities of human being. Explain the plaster casts used for the management of bone fractures of upper extremities of human. Supervise the students to identify the materials used in making slab casts. Supervise the students to make slabs for the casts in 12.4	Identify different parts of upper extremities of human being. Identify different slab plaster casts for the management of bone fractures of upper extremities of human. Identify the plaster bandages and padding materials used – plaster casting make the casts Identified – 12.4	

CODE: POT 125		TITLE: Plaster Casting Technique		HOURS: 60hrs
General Objective: 13.0 Know the process of making slab plaster casts for lower extremities.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
13	13.1 Identify the different parts of the lower extremities. 13.2 Identify different slab plaster casts used for the management of bone fractures of the lower extremities. 13.3 Identify the plaster bandages and padding materials used in plaster casting. 13.4 Describe the process of making removable and non – removable below knee slab plaster cast. 13.5 Make removable and no removable slab casts. 13.6 Counsel patient after applying slab cast.	Take the students to the plaster casting room. Explain the different parts of the lower extremities. Supervise the students to identify different slab plaster casts used for the management of bone fractures of the lower extremities. Supervise the students to identify plaster bandages and padding materials used – plaster casting Explain the process of making removable and non-removable below knee slab plaster cast Above knee slab plaster cast. Supervise the students to counsel patient after applying slabcast.	Identify different parts of the lower extremities. Identify different slab plaster casts used for management of bone fractures of lower extremities. Identify the plaster bandages and padding materials used – plaster casting. Make the casts identified in 13.2 above.	Plaster room Trolleys Plaster equipment Such as plaster cutter/shears Plaster bender Plaster scissors Plaster bandages Paddings.

SEMESTER: ND I (2ND SEMESTER)		***TITLE*: ORTHOPAEDIC PATHOLOGY I**	
CODE: POT 126			
DURATION: 15 hrs	**THEORY: 15hrs**	***TUTORIALS***	**PRACTICALS: (1hr/wk)**
UNITS: 1.0 (Credit Unit)			
COURSE GOAL: The course is designed to enable the students understand the pathophysiology of some orthopaedic conditions which he will be exposed to during the management of patients.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0 Know the definition of Orthopaedic conditions. 2.0 Know the aetiology and classification of orthopaedic conditions. 3.0 Know congenital deformities in orthopaedic conditions. 4.0 Know acquired deformities in orthopaedic conditions. 5.0 Understand the management of the orthopaedic pathological conditions in 3.0 and 4.0 above.			

CODE: POT 126	**TITLE: Orthopaepic Pathology I**			
HOURS: 15hrs				
General Objective: 1.0 To know the definition of Orthopaedic conditions.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	On completion of this course the student will able to: 1.1 Define orthopaedic conditions. 1.2 Review the relevant anatomy as related to 1.1 above.	 Lecture Discussion Demonstration		 -Chalk/black board -Anatomical models -Skeleton -Charts/posters

CODE: POT 126	***TITLE:*** **Orthopaepic Pathology I**			**HOURS:** 15hrs
General Objective:2.0 To know the aetiology and classification of orthopaedic conditions.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
2 3	2.1 State the classification of orthopaedic conditions. (a) congenital type (b) acquired type. 2.2 List the causes of orthopaedic conditions under each classification: (a) Congenital: - Chromosomal abnormality - Material exposure to irradiation,	Lecture Discussion Demonstration	Outpatient/clinical visits	 - Clinical photographs - Posters - Slider -Charts.

	infections - Effects of drugs and chemicals - Genetic predispositions. (b) Acquired: - Inflammation - Trauma - Neoplasm - Infections - Metabolic - Degenerative.	Lecture Discussion Demonstration		

CODE: POT 126	**TITLE: Orthopaedic Pathology I**			**HOURS: 15hrs**
General Objective: 3.0 To know the congenital deformities in Orthopaedic conditions				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
4 5 6	3.1 Define congenital deformities. 3.2 Identify congenital deformities 3.3 Describe the various types of congenital deformities in 2.2 above. 3.4 State the problems associated with congenital deformities.	Lectures conduct Clinical visits Tutorials		Same as above

CODE: POT 126	**TITLE: Orthopaedic Pathology I**			**HOURS: 15hrs**
General Objective:4.0 To know the acquired deformities in orthopaedic conditions				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
7 8 9	4.1 Define acquired deformities. 4.2 Identify types deformities. 4.3 Describe the various types of acquired deformities in 4.2 above. 4.4 State the problems associated with acquired.			

CODE: POT 126 **HOURS: 60hrs**	**TITLE: Orthopaedic Pathology**			
General Objective:5.0 To understand the management of the orthopaedic pathological conditions in 3.0 and 4.0 above.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
10 11 12	5.1 List the material for the treatment of orthopaedic . pathological conditions. 5.2 Identify the materials in 5.1 above. 5.3 Assist in the treatment of the patients with conditions stated in 3.0 and 4.0 above.	Lecture Demonstration Clinical visits	Practical Demonstration of application of splintage and casts.	Casting materials i.e. -POP -Fibre glass -Poly-propylene -Bandages -Shoulders spikier equipment -Knee raise -Plaster cutters etc.

PROGRAMME: NATIONAL DIPLOMA IN PROSTHETICS AND ORTHOTICS TECHNOLOGY		
COURSE: Early Detection of Disabilities **CODE:** POT 127 **TITLE:**		
DURATION: 15 HRS **THEORY: 15 HRS**	**TUTORIALS**	**PRACTICALS**
UNITS: 1.0 **COURSE GOAL**: The course is designed to enable the students detect disabilities among members of the communities.		
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:		
1. 0 Know the diseases that may lead to disabilities. 2.0 Know the mode of prevention of the diseases leading to disabilities.		

CODE: 127	**TITLE:**		**HOURS: 60**
General Objectives: 1.0 Know the diseases that may lead to disabilities.			
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	1.1 Define disability; 1.2 Identify the common disabilities in a rural community; 1.3.Identify the diseases causing disabilities in 1.2 above. e.g. Poliomyelitis Tuberculosis; Jaundice; Hypertension; stroke; spondylitis, cerebral-palsy. etc 1.4. Identify the common disabilities in a community e.g. paralysis upper/lower limb, spinal deformities, etc	1.1 Explain the term disability. 1.2 Supervise students to identify the common disabilities. 1.3 Supervise students to identify the diseases causing disabilities 1.4 Explain the causative agents of disabilities 1.5 Supervise students to identify the common disabilities in a community.	1.1 Identify the common disabilities in a rural area. 1.2 Identify the common disabilities in a community. 1.3 Identify the diseases causing the disabilities.	Clinic office with table/chairs.

CODE: 127		**TITLE:**		
HOURS: 60				
General Objectives: 2.0 Know the mode of prevention of the diseases leading to disabilities				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	2.1 Adopt the following measures to prevent disabilities (a) good antenatal and delivery services (b)post natal clinic ©immunization (d)other relevant clinics (e)educate the community on importance of cleanliness.	Supervise students to educate member of the communities.		

CODE:		**TITLE:**	**HOURS: 15 HRS**	
General Objectives: 2.0 Know the mode of prevention of the diseases leading to disabilities				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	2.2 Adopt the following measures to prevent the disabilities (f) good antenatal and delivery services (g) post natal clinic (h)immunization (i) other relevant clinics (j) educate the community on important of cleanliness.	Supervise students to educate member of the communities.		

PROGRAMME:	**NATIONAL DIPLOMA IN PROSTHETICS AND ORTHOTICS TECHNOLOGY**	
COURSE:	**Lower Limb Orthosis – II**	
CODE:	**POT 211**	**TITLE:**
DURATION:	**60 Hours**	**TUTORIALS**	**PRACTICALS**	**45 Hours**
UNITS:	**2.0**	
COURSE GOAL: This course is designed to enable the students dictate disabilities among members of the communities.		
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:		
1. 0	Understand the construction of Arch-support.	
2.0	Understand the fabrication of stirrups.	
3.0	Understand the techniques used to produce bolts and nuts.	
4.0	Know the fabrication of Ankle-Foot Orthosis.	
5.0	Understand the Techniques of fabricating knee-Ankle foot orthosis	
6.0	Understand the Techniques of moulding.	

CODE: Pot - 211	TITLE: Lower limb orthosis - II			HOURS: 60
General Objectives: 1.0 Understand the construction of Arch-Support				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	1.1 Explain the concept of transfer of patterns 1.2 Describe the indications for arch support 1.3 Cut out materials for fabrication of arch support. 1.4 Fabricate arch support using stainless steel 1.5 Fabricate arch support using aluminum 1.6 Fabricate arch support using plastics	1.1 Instructs on concept and indication for arch support. 1.2 Instruct on fabrication of arch support using different materials.	- Demonstrate the fabrication of Arch-Support	Metals such as steel, aluminum plastic workbench.

CODE: Pot - 211 TITLE: Lower limb orthosis - II HOURS: 60				
General Objectives: 2.0 Understand the fabrication of stirrups				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	2.1 Identify patterns for producing stirrups. 2.3 Transfer patterns for producing stirrups 2.4 Cut metal into different patterns. 2.5 Make Rigid ankle stirrups 2.6 Make flexible ankle stirrups for doss flexion and plantar flexion.	2.1 Instruct on transfer and cutting of patterns. 2.2 Instruct on making rigid and flexible stirrups.	Demonstrate transfer and cussing of patterns. Produce rigid and flexible stirrups.	Metals cardboard, brown paper scissors shears.

CODE: Pot - 211 TITLE: Lower limb orthosis - II HOURS: 60				
General Objectives: 3.0 Understand the Techniques used to produce Bolts and Nuts.				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	3.1 Identify the relevant materials for making bolts and nuts. 3.2 Make bolts and nuts with taps and dies.	3.1 Supervise students make bolts and nuts.	Make bolts and nuts with taps and dice.	Taps and dice round and flat metals milling machine lathe machine

CODE: Pot - 211	**TITLE: Lower limb orthosis - II**			**HOURS: 60**
General Objectives: 40 Know the fabrication of ankle foot orthosis.				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	4.1 Identify tools for making ankle foot orthosis 4.2 Make individual components of ankle foot orthosis 4.3 Assemble individual components. 4.4 Construct ankle foot orthosis using plastics 4.5 Construct ankle foot orthosis using metals. 4.6 Describe the peculiarity of different designs of ankle foot.	- Show different tools for making ankle foot orthosis - Instruct on different components of making ankle foot orthosis - Differentiate between available designs	Fabricate ankle foot orthosis	Metals, plastics leather, buckles straps, bending irons, plaster of paris, bandage plaster of paris powder Tracing paper work bench.

CODE:	**Pot - 211**	**TITLE:**	**Lower limb orthosis - II**		**HOURS: 60**
General Objectives: 5.0 Understand the technique of fabricating knee ankle foot orthosis					
WEEK	Specific Objectives		Teacher Activity	Practical	Resources
	5.1 Identify tools for making knee ankle orthosis. 5.2 Make individual components of knee – ankle foot orthosis. 5.3 Assemble individual components of ankle- knee foot orthoosis 5.4 Construct knee-ankle orthosis using plastics 5.5 Construct knee-ankle foot orthosis using metals.		- Show different tools for making knee-ankle foot orthosis - Instruct on different components of making knee ankle orthosis	Fabricate knee ankle orthosis	Metals plastics leather buckles straps bending irons plaster of paris bandage plaster of paris powder Tracing paper workbench.

CODE:	**Pot - 211**	**TITLE:**	**Lower limb orthosis - II**		**HOURS: 60**
General Objectives: 6.0 Understand the technique of Moulding					
WEEK	Specific Objectives		Teacher Activity	Practical	Resources
	6.1 Describe the process of moulding. 6.2 Identify different materials for moulding. 6.3 Mould with different materials.		Instruct on process of moulding Describe molding with different materials.	Mould with different materials	Plastics Oven Suction machine Hand gloves

PROGRAMME: PROSTHETICS AND ORTHOTICSS – NATIONAL DIPLOMA			
COURSE: SPINAL AND UPPER LIMB ORTHOSES II			
CODE: POT 212	**TITLE:**		
DURATION: 60 HOURS	**THEORY: 15hrs**	**TUTORIALS**	**PRACTICALS: 45hrs**
UNITS: 2.0			
COURSE GOAL: Understand the conditions for different spinal and upper limb orthoses.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0 Know the appropriate orthosis for different spinal conditions. 2.0 Understand appropriate measurement for production of spinal and upper limb orthosis. 3.0 Understand the production of spinal orthosis.			

CODE: POT 212 TITLE: Spinal and Upper Limb Orthoses **HOURS: 60hrs**				
General Objective: 1.0 Know appropriate orthosis for different spinal conditions.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Identify orthosis for management of: (a) Scoliosis (b) Kyphosis (c) Kyphoscoliosis. 1.2 Identify the component parts of the orthoses in 1.1 above.	Instructs on different orthoses for scoliosis, lordosis, kyphosis.	Exhibit different orthoses for scoliosis, lordosis, kyphosis and kyphoscoliosis.	
General Objective: 2.0 Understand appropriate measurements for production of spinal and upper limb orthoses.				
2	2.1 Prepare patient for measurement for spinal and upper limb orthoses. 2.2 Take appropriate measurements for spinal and upper limb orthoses. 2.3 Confirm measurements taken from negative cast as in 2.2 above. 2.4 Confirm measurements taken after modification.	Instruct on technique of taking measurements.	Demonstrate measurement taking.	-Tape measure -Writing materials -Stockinette.
General Objective: 3.0 Know the production of spinal orthoses.				
3	3.1 Fabricate orthoses for the following spinal conditions:- (a) Scoliosis	Instructs on how to fabricate orthoses for different spinal	Fabricates orthoses for different spinal conditions.	-polythene -plaster zote -leather straps

	(b) Lordosis © Kyphosis (d) Kyphoscoliosis. 3.2 Fit the orthoses in 3.1 above.	conditions.		-webbing -velcro fastener -buckles -flat bars.

PROGRAMME: NATIONAL DIPLOMA IN PROSTHETICS AND ORTHOTICS TECHNOLOGY			
COURSE: BIOMECHANICS II			
CODE: POT 213	***TITLE*:**		
DURATION: 45HRS	**THEORY:** 15hrs	**TUTORIALS**	**PRACTICALS: 30hrs**
UNITS:			
COURSE GOAL: This course is designed to enable the student understand the application of biomechanical principles in relation to prosthetics and orthotics			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0 Understand normal human locomotion and the gait cycle 2.0 Know the kinetic and kinematics analysis and the calculation of external and internal forces human motion 3.0 Understand biomechanics of the lower limb and upper limb.			

CODE: POT 213	**TITLE: Biomechanics II**		**HOURS: 60hrs**	
General Objective: 1.0 Understand normal human locomotion and the gait cycle.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Define the following terms: (a) gait cycle (b) heel skrike (c) stance phase (d) swing phase (e) toe-off 1.2 Describe the sub-divisions of the stance phase thus: (i) Heel strike (ii) Foot – flat (iii) Mid – Stance (iv) Push – Off 1.3 Describe the sub-division of the swing phase: (a) acceleration (c) mid-swing (d) deceleration 1.4 Describe the normal human locomotion. 1.5 Demonstrate the normal human locomotion. 1.6 Describe the human gait cycle. 1.7 Explain the normal human gait cycle. 1.8 Explain the abnormal gait cycle 1.9 Determine the division of gait cycle.	Lead students to define the frequently used terms in human locomotion Explain the subdivisions of the stance phase and swing phase.	Walk student on gait analysis cycle Observe the muscles and motion involved	Use patients fitted with devices as demonstration

CODE: POT 213	TITLE: Biomechanics II	HOURS: 60hrs

General Objective: 2.0 Know the kinetic and kinematics analysis and the calculation of external and internal forces in human motion.

Week	Specific Objectives	Teacher Activity	Practical	Resources
	2.1 Define the word "forces" and its application to various joints and muscle activity. 2.2 List the various forces in the upper and lower joints and muscles. 2.3 Identify forces involved in normal human locomotion and gait cycle. 2.4 Demonstrate the action of the gravitational force to joint motions in human locomotion.	1. Explain the term "forces" 2. Describe the various forces in the joints and muscles 3. State the forces involved in normal human locomotion and gait cycle.	Demonstrate the action of the gravitational force to joint motions in human locomotion	Human beings, teaching aids.

CODE: POT 213	**TITLE: Biomechanics**		**HOURS: 60hrs**	
General Objective: 3.0 Understand biomechanics of the lower and upper limbs				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 Explain the forces involved in walking. 3.2 Identify the muscles that generate forces in various joints necessary for the following: (i) support (ii) balance (iii) locomotion in relation to both upper and lower limbs. 3.3 Identify the effect of external forces on normal human locomotion. 3.4 Demonstrate the effect of external forces on normal human locomotion	Describe the forces involved in walking. Describe the action of the muscles that generate forces in various joints.	Identify the effect of external forces on normal human locomotion Demonstrate the effect of external forces on normal human locomotion	Humans Audio-visual teaching aids

PROGRAMME: PROSTHETICS AND ORTHOTICS TECHNOLOGY – NATIONAL DIPLOMA			
COURSE: Prosthetics and Orthotics Components and Production			
CODE: POT 214	**TITLE:**		
DURATION: 15hrs	**THEORY:**	**TUTORIALS**	**PRACTICALS: 45hrs**
UNITS: 2.0			
COURSE GOAL: The course is designed to enable the student produce component parts for prosthetics and orthotics.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0 Know component parts used in Prosthetics and Orthotics. 2.0 Know how to produce some component parts for Prosthetics and Orthotics.			

CODE: POT 214	**TITLE:**			**HOURS: 45hrs**
General Objective:1.0 Know component parts used in Prosthetics and Orthotics				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Identify the following major component parts for upper limb prostheses. (a) elbow unit (e) Wrist unit (f) Hand unit 1.2 Identify the following component parts for lower limb prostheses (a) Knee units (b) Prosthetic feet e.g. SACH © Socket 1.3 Identify the major component parts for upper limb orthosis. (a) cock up splints (b) shoulder abduction splint, etc. 1.4 Identify the major component for lower limb orthosis. (a) Knee Ankle Foot Orthosis (KAFO) (b) Ankle Foot – Orthosis (AFO) and other various orthopaedic devices.	Supervise students to identify component parts for both upper and lower limbs prostheses. Supervise students to identify the component parts for both upper and lower limb orthosis.	Identify the major component parts for upper limb prostheses. Identify the component part for lower limb prostheses. Identify the major component parts for upper limb orthosis. Identify the major components for lower limb orthosis.	

CODE: POT 214	TITLE:		HOURS: 60hrs	
General Objective:2.0 Know how to produce some component parts for Prosthetics and Orthotics				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	2.1 Identify the following materials for producing the component parts prosthesis and orthosis. (a) metal e.g. aluminum (b) plastics like polyethylene © leather (g) wood for SACH 2.2 Produce the foot using wood, rubber, non – elastic webbing. 2.3 Produce knee piece using wood metal, etc. 2.4 Produce socket using wood, metal and plastics. 2.5 Produce lower limb orthotic devices such as KAFO, splints of various types and saimento (or PTBO) i.e. Patella. Tendon Bearing orthosis. 2.6 Produce functional trnck orthosis e.g. - Lumbar corset - Thoracolumbar corset - Cervico thoralumbar corset - Cervico thiracolumbar sacral corset	Supervise students identify materials for producing the component parts	Identify the materials for producing the component parts [a] metal [b] plastics [c] leather [d] wood for SACH Produce lower limb orthotic devices such as KAFO, splints of various types and sarmiento Produce functional trunk orthosis	(a) metal like copper aluminum , etc. (b) plastics like polyethylene © leather (d) wood

PROGRAMME:	**NATIONAL DIPLOMA IN PROSTHETICS AND ORTHOTICS TECHNOLOGY**		
COURSE:	Plaster Casting Techniques II		
CODE:	POT 215	**TITLE:**	
DURATION:	60 Hours	TUTORIALS 15 Hours	**PRACTICALS** 45 Hours

UNITS: 2.0

COURSE GOAL: The course is designed to enable students understand different plaster casts of the upper and lower extremities and the Body trunk.

GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:

1. 0 Know the process of making full plaster casts of the upper extremities.

2.0 Know the process of making full plaster casts of the lower extremities

3.0 Understand the concept and process of wedging plaster casts.

4.0 Know supportive devices of plaster casts and their specific uses.

5.0 Understand application of synthetic plaster bandage.

6.0 Understand plaster cast bracing.

7.0 Know the process of making shoulder and hip spicas.

8.0 Understand the process of making minerva body jocket plaster casts.

9.0 Know the procedure of making sarmiento cast.
10.0 Understand the procedure of making Frog cast.
11.0 Know how to cast a Volar Slab and cock-up slabs.
12.0 Know the process of making Traction embedded in plaster cast
13.0 Understand how to make a plaster bed.

CODE:	**TITLE:**			**HOURS:**
General Objectives: 1.0 Know the process of making full plaster casts of the upper extremities				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	1.1 Identify different parts that make up the upper extremities of human being. 1.2 Identify plaster casts used for the management of bone fractures of upper extremities. E.g. (a) Colle's plaster cast (b) Scaphoid plaster cast (c) Bennet plaster cast (d) Below elbow cast (e) Hanging cast (f) U' cast. 1.3 Identify the materials used in making the cast in 1.2 above. 1.4 Make the casts listed in 1.2 above.	Supervise students to identify different that make up the upper extremities of human being. Supervise the students to identify different plaster cast used for the management of bone fractures of upper extremities e.g. Colle's plaster cast etc as listed in specific objective 1.2 Supervise students to identify the materials used in making the cast listed in specific objective 1.2 Supervise the students to make the casts identified in 14.2 above.	Identify different parts that make up the upper extremities of human being. Identify different plaster casts used for the management of bone fractures of upper extremities e.g. (a) Colle's plaster cast (b) Bennet plaster cast etc. Identify the materials used in making the cast in 4.2 above Make the casts identified in 14.2 above.	Plaster Room Trolleys Bowls for water Water Plaster equipments Knee props/Support

CODE:	TITLE:	HOURS:		
General Objectives: 2.0 Know the process of making full plaster casts of the lower extremities				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	2.1 Identify different parts of the lower extremities of the human being. 2.2 Identify plaster casts used for the management of bone fractures of the lower extremities of human 2.3 Identify the materials used to make the plaster casts of the lower extremities of the human being. 2.4 Make the following plaster cads of the lower extremities of the human being - Boot plaster cast - Below knee cast - Above Knee cast - High above Knee cast cylinder cast 2.5 Counsel patients after plaster cast application	Supervise students to identify different parts of the lower extremities of the human being Supervise the students to identify different plaster casts used for the management of bone fractures of the lower extremities of human . Supervise students to identify materials used to make plaster casts of the lower extremities of the human Supervise students to make the plaster cards of the lower extremities of the human being. Supervise students to counsel patients after plaster cast application.	Identify different parts of the lower extremities of the human being. Identify different plaster casts used for the management of bone fractures of the lower extremities of human being. Make the following plaster casts of the lower extremities of the human being. -Boot plaster cast -Below knee cast - Above knee cast -High above knee cast -Cylinder cast Cancel patients after plaster cast application	Plaster Room Classroom Trolleys Plaster equipment Plaster shears/cutter Plaster Bender Plaster scissors Tenor saw Paddings Dynacast Bandage Scotch Cast

CODE:		**TITLE:**		**HOURS:**
General Objectives: 3.0 Understand the concept and process of wedging plaster casts				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	3.1 Define wedging 3.2 Explain the need for wedging a dry cast. 3.3 Identify materials used for wedging of a cast 3.4 Describe the technique of wedging of plaster casts 3.5 Wedge plaster casts	Show the student wedging materials Describe the need for wedging a dry cast Supervise the students to identify materials used for wedging of a cast Explain the technique of wedging of plaster casts	Identify materials used for wedging of a cast	Theatre Casting room Plaster Equipments Plaster Shears/Cutter Benders, scissors

CODE:	TITLE:		HOURS:
General Objectives: 4.0 Know supportive devices of plaster cast and their specific uses.			
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	4.1 Identify all supportive devices in plaster casting.	Explain to the students all supportive devices in plaster casting.	Identify all supportive devices in plaster casting	Planks Pieces of metals Plaster Bandage
	4.2 Identify materials used in making the supportive devices e.g. (a) Heel raising wooden block for weight bearing leg plaster cast. (b) Walking stick (c) Pairs of crutches (d) Collar & cuff bandage	Explain to the students materials used in making the supportive devices listed in specific objectives 4.2.	Identify materials used in making the supportive devices e.g (a) Heel raising wooden block for weight bearing leg plaster cast (b) Walking stick etc.	
	4.3 Explain the function/ uses of the supportive device 4.2 above.	Describe the functions of the supportive devices listed – specific objective 4.2	Maintain supportive devices	
	4.4 Maintain supportive devices.	Supervise the students to maintain supportive devices.	Identify complications that may arise from the use of supportive devices in 4.2 above.	
	4.5 Identify complications that may arise from the use of supportive devices listed in 17.2 above.	Explain complications that may arise from the use of supportive devices		

CODE:	TITLE:		HOURS:	
General Objectives: 5.0 Understand application of synthetic plaster bandage.				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	5.1 Define synthetic plaster bandage 5.2 Identify the synthetic plaster 5.3 Identify the tools used in applying synthetic plaster cast 5.4 Explain the chemical components of synthetic plaster bandage. 5.5 Differentiate between plaster of paris and synthetic plaster bandage. 5.6 Demonstrate the application of synthetic bandage to make a plaster cast. 5.7 Mould a synthetic plaster on a limb.	Explain synthetic plaster bandage. Supervise students to identify the synthetic plaster bandage. Explain the chemistry of fibre glass which constitutes synthetic plaster bondage. Discuss the - differences between plaster of paris and synthetic plaster -merits and demerits of both . Supervise students to mold a synthetic plaster cast on a limb	Identify the synthetic plaster bondage Identify the tools used in applying synthetic plaster cast. Mold a synthetic plaster cast on a limb.	Synthetic plaster bondage such as Dynacast, Scotchcast and so on Hand glove.

CODE:	TITLE:			HOURS:
General Objectives: 6.0 Understand plaster cast Bracing.				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	6.1 Define cast bracing. 6.2 Explain the purposes of cast Bracing. 6.3 Identify the different metal braces used in cast bracing. 6.4 Make the following bracing: - Femoral cast bracing - Tibial cast bracing.	Explain plaster cast bracing Supervise the students to identify the metal braces used for the femoral and tibia bones. Explain the process of making femoral tibial cast bracing. Supervise the students to demonstrate the application of cast bracing.	Identify different metal cast braces used in cast bracing. Make different types of bracing.	Plaster of paris cast braces padding materials.

CODE:	TITLE:		HOURS:	
General Objectives: 7.0 Know the process of making shoulder and hip spicas.				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	7.1 Define spica 7.2 Identify different types of spicas such as: - Shoulder spica - Single (unilateral) hip spica - Double (bilateral) hip spica - One and a half hip spica 7.3 Produce different types of spica 7.4 Apply plaster spicas to paticals 7.5 Counsel patient in plaster spica.	Give the definition of plaster spica Supervise students to identify parts of human shoulder and hip Supervise students to produce the spicas such as: - shoulder spical - single hip spica - double hip spica - one and a half hip spica Supervise students to apply plaster spica to different patient. Supervise students to advise patients in plaster spica	Identify different types of spica like shoulder spica, single hip spica. Produce different types of plaster spica for different patient. Counsel patients after application of the spicas.	Plaster of paris bandages synthetic plaster bondages padding materials such as: - cotton wool - soffban - felts - cotton bandage

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CODE:	TITLE:			HOURS:
General Objectives: 8.0 Understand the process of making minerva body jacket plaster casts.				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	8.1 Identify different parts of human body trunk 8.2 Define body jacket cast 8.3 Identify different types of body jackets such as: - Modified Minerva body jacket - Full minerva body jacket - Halo-pelvic body jacket 8.4 Explain the uses of body jackets in 8.3 above. 8.5 Make different body jackets. 8.6 Counsel patients in body jackets.	Supervise students to identify different parts of human body trunk. Explain the meaning of body jacket casts. Supervise students to identify different body jackets. Discuss the uses of body jackets. Demonstrate the process of making different body jackets. Explain specific advice and counsel to be given patients in body jackets.	Identify different parts of human body trunk. Identify different types of body jackets such as: - modified minerva body jacket - full minerva body jacket - halo pelvic body jacket Counsel patients in body jacket.	Cotton bandages Plaster room Plaster of Paris bondage Water Audio-visual Majic board Chalk board.

CODE:	TITLE:		HOURS:	
General Objectives: 9.0 Know the procedure of making sarmiento cast.				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	9.1 Define sarmiento plaster cast	Explain sarmiento plaster cast.		Audio-visual Magnetic board Plaster of Paris
	9.2 Explain the uses of sarmiento cast	Describe the uses of sarmiento cast		bandage Cotton bandage
	9.3 Identify materials used in making sarmiento cast	Supervise students to identify materials used in making sarmiento cast.	Identify materials used in making sarmiento cast.	Water Plaster from furniture Plaster casting instrument
	9.4 Explain the procedure of making a sarmiento cast.			
	9.5 Counsel patients and clients on sarmiento cast.	Supervise students to caunsel patients and clients in sarmiento cast.	Counsel patients and clients in sarmiento cast.	

CODE:	TITLE:		HOURS:	
General Objectives: 10.0 Understand the procedure of making frog cast				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	10.1 Describe frog cast. 10.2 List indications for frog cast 10.3 Identify materials required for making frog cast. 10.4 Make frog cast.	Define frog cast and its indications Outline materials for making frog cast. Produce a frog cast.	Display materials for making frog cast Demonstrate making of a frog cast Make a frog cast.	Plaster table Plaster of paris bandage Padding materials.

CODE:	TITLE:		HOURS:	
General Objectives: 11.0 Know how to cast a VOLAR SLAB AND COCK-UP SLAB				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	11.1 Identify parts of human hand Define Volar Slab Cock-up splints and their uses. 11.2 Differentiate between Volar Slab and Cock-up Slab (Splint)	Explain the volar slab and cock-up slab. Discuss the differences between volar slab cast and cock up cast. Show the materials used for: - Volar slab and - Cock-up splint.	Identify different parts of human hand Identify the plaster casting instruments and equipments used in making Volar slab	Plaster room Plaster bandages Cotton bandages Plaster bender Padding materials Audio – visual Magnetic board.

	11.3 Identify materials used for : - Volar slab - Cock up splint 11.4 Make – Volar slab and - Cock up splint 11.5 Counsel patients in the use of volar and cock up splint.		and cock-up slab. Make Volar and Cock-up slab casts Counsel patient in Volar and Cock-up slabs.	

CODE:		TITLE:		HOURS:
General Objectives: 12.0 Know the process of making Traction embedded in Plaster cast				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	12.1 Identify materials required in making traction embedded in plaster cast. 12.2 Describe the process of making traction embedded in plaster cast.	Instruct on: Materials required in making traction embedded in plaster cast. Explain the process of making traction embedded in plaster cast.	Demonstrate application of traction embedded in plaster cast., Apply traction embedded in plaster cast.	-Traction Kits -Stanmore pin -Plaster of paris bandage -Padding materials.

	12.3 Apply traction embedded in plaster cast.			

CODE:	TITLE:		HOURS:	
General Objectives: 13.0 Understand how to make a Plaster bed.				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	13.1Describe plaster bed 13.2 List indications for plaster 13.3 Identify materials required for making plaster bed. 13.4 Make plaster bed.	- Define plaster bed and its indications - Instruct on and enumerate materials for making plaster bed. - Instruct on how to make a plaster bed.	Display materials for making plaster bed. Make plaster bed.	Plaster table Plaster of paris bondage Padding materials

PROGRAMME: ND Prosthetics and Orthotics			
COURSE: Lower Limb Prostheses I			
CODE: POT 216	**TITLE:**		
DURATION: 75 hrs	**THEORY: 15hrs**	**TUTORIALS**	**PRACTICALS: 60hrs**
UNITS: 2.0			
COURSE GOAL: The course is designed to enable the student to understand the different types of lower limb prostheses, (ankle/partial foot, transtibial) casting procedures, materials used and fabrication of the prostheses.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0 Know the layout of the Prosthetic laboratory. 2.0 Know the tools, materials and machinery used in the fabrication of prostheses. 3.0 Know the procedures and techniques of measuring, casting and fabricating ankle/practical foot prostheses. 4.0 Know the procedures and techniques of measuring, casting and fabricating trans-tibial prostheses			

CODE: POT 216	TITLE: Lower Limb Prostheses		HOURS: 45hrs	
General Objectives				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	1.1 Identify a prosthetic laboratory and its layout. 1.2 Describe the layout of a prosthetic laboratory. 1.3 Sketch a prosthetic laboratory layout. 1.4 Identify the functions of each part of the prosthetic laboratory.	Take students to a prosthetic laboratory to identify and sketch the layout.	Sketch the layout of a prosthetic laboratory.	Drawing materials.

CODE: POT 216	TITLE: Lower Limb Prostheses		HOURS: 45hrs	
General Objective: 2.0 Know the tools, materials and machinery used in the fabrication of prostheses.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	2.1 Identify various tools used in the fabrication of prostheses. 2.2 Identify various machinery used in the fabrication of prostheses. 2.3 Explain the functions of various tools and machines used in the fabrication process of prostheses. 2.4 List various tools and machines used in a	Take students to a prosthetic laboratory to show them the various functions of the tools and machines there.	Identify and list the various tools and machines in a prosthetic laboratory.	-Band saw machine -Router machine -Drilling machine -Oven machine -Alignment jig -Rasp files -Surform files

	prosthetic workshop. 2.5 Sketch some of the hand tools used in prosthetics laboratory.			-Heat gun etc.

CODE: POT 216	**TITLE: Lower Limb Prostheses**			**HOURS:** 45hrs
General Objective: 3.0 Know the procedures and techniques of measuring, casting and fabricating ankle and partial foot prosthesis.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	3.1 Identify ankle and partial foot prosthesis. 3.2 Describe the functions of an ankle and partial foot prosthesis. 3.3 Identify the component parts of an ankle and partial foot prosthesis. 3.4 Take measurements of ankle and partial foot amputee. 3.5 Take casts of ankle and partial foot amputee. 3.6 Fabricate ankle and partial foot prostheses. 3.7 Identify faults on an ankle and partial foot prostheses. E.g. socket or foot breakage.	Take students through the measuring, casting identification of faults, and fabrication of an ankle and partial foot prosthesis.	Measuring, casting, identifying component parts and identifying faults on an ankle and partial foot prosthesis.	Take rule, plaster of paris, water, stockinette, indelible pencil, Thermoplastic resin Reagents Plastics Fibre glass etc.

CODE: POT 216	**TITLE: Lower Limb Prostheses**			**HOURS:** 45hrs
General Objectives: 4.0 Know the procedures and techniques of fabricating trans-tibial prosthesis.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	4.1 Identify a trans-tibial prosthesis. 4.2 Describe the functions of a trans tibial prosthesis. 4.3 Identify the component parts of such prosthesis. 4.4 Take measurements of a trans tibial amputee.	Take students through the process of measuring, casting and fabrication of a trans tibial prosthesis.	Measuring, casting and fabrication of a transtibial prosthesis.	As stated in 3.0

	4.5 Take the cast of such amputee. 4.6 Fabricate a trans tibial prosthesis. 4.7 Identify the faults on such prosthesis e.g. socket or foot breakage.	Also show them the various faults on such prosthesis.		

PROGRAMME: NATIONAL DIPLOMA IN PROSTHETICS AND ORTHOTICS TECHNOLOGY			
SEMESTER: ND II **CODE**: POT 217	**TITLE: ORTHOPAEDIC PATHOLOGY II**		
DURATION: 45 HRS	TUTORIALS -	PRACTICALS 30 Hours	THEORY: 15HRS
UNITS: 2.0	ND II (SEMESTER I)		
COURSE GOAL: The course is designed to enable the students understand the management of pathophysiology of some orthopaedic conditions.			
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:			
1.0 Know the Orthopaedic conditions that affect the spine. 2.0 Know the Orthopaedic Conditions that affect the joints. 3.0 Know the Othopaedic conditions resulting from metabolic disorders.			

CODE: Pot 217	TITLE: ORTHOPAEDIC PATHOLOGY II	HOURS: 45 HRS		
General Objectives: 1.0 Know the Orthopaedic conditions that affect the spine.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	On completion of this course the diplomates will be able to: 1.1 Identify Orthopaedic conditions affecting the Spine. - TB of the Spine - Prolapsed Disc - Lordosis - Scoliosis - Kyphosis - Spondylosis - Spondylolithesis 1.2 Describe the aetiology and clinical manifestations of the Orthopaedic conditions listed in 1.1 above. 1.3 Identify the materials necessary for the treatment of each condition listed in 1.1 above. e.g. Plaster casts, collars, corsets 1.4 Assist in the production of	Teacher carries out discussion on types of conditions affecting the spine. Teachers demonstrates lordosis Kyphosis hunchback Scoliosis. Teacher Lectures/Discusses the clinical manifestations. Demonstration Discussion Demonstration	Demonstrates the conditions i.e. kyphosis Student to carry out examination on patients to enlist the S & Symptoms. Students to identify the treatments materials. Students to produce necessary materials. Students to be able to apply the devices	- Slides - Video - X-rays - Out yalert diais - Life patients with diverse conditions - Patients - Videos/tapes, X-rays - Plaster Cast - Collars - Corsets - Orthotic jackets - Milwaukee orthosis - Casting materials - Equipment i.e. As listed in 1.3 above.

	materials necessary for the treatment of spinal Orthopaedic conditions. 1.5 Assist in the application of appliances for the treatment of 1.1 above.	Discussion To conduct visits to laboratories Clinics.		

CODE: Pot 217		**TITLE: ORTHOPAEDIC PATHOLOGY**		**HOURS: 45 HRS**
General Objectives: 2.0 Know the Orthopaedic conditions that affect the Joints.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	2.1Identify the Orthopaedic conditions affecting the joints. - Osteoarthritis - Septic Arthritis - Inflammatory Arthritis - Angular Deformities - genuvarum genuvalgum	Teacher carries out discussion/lectures. - Tutorials - Assignments, - Visit words/conduct visits to the clinic words - Assignment	Students to visit OPD and Report on findings STDs reports on listing of clinical manifestations	Patientsd Xrays Slides Patients X-rays

2.2 Describe the aetiology and clinical manifestations of the Orthopaedic conditions listed in 2.1 above. 2.3 Identify the materials necessary for the treatment of each condition listed in 2.1 above. - Skin traction kits - weight relieving calipers KAFO - HKAFO etc. 2.3 Assist in the production of materials necessary for the treatment of Orthopaedic conditions in the joints. 2.5 Assist in the application of devices for the treatment of 2.1 above.	Teacher carries out demonstration/Discussion Teacher conducts visits to Laboratories and Demonstrates Demonstration of the devices by teacher - Assignment - Tutorials	Students to identify the materials Assemble the materials Students to apply the devices on patients and report	Video clips Metals - Ruds - Cabts - Bandages - Leathers - Patients - Materials - Listed in 2.3 above. - Patient - Materials in 2.3 above.

CODE:	**Pot 217**	**TITLE: ORTHOPAEDIC PATHOLOGY II**		**HOURS: 45 HRS**
General Objectives: 3.0 Know the Orthopaedic conditions resulting from metabolic disorders.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	3.1 Identify Orthopaedic conditions resulting from metabolic disorders.: - Rickets - Osteoporosis - Osteomalacia - Pagets disease	Teacher carries out Discussion/Tutorials Give assignments	Demonstration by Students	- Patients - X-rays - Video clips - Slides
	3.2 Describe the aetiology and clinical manifestations of the Orthopaedic conditions listed in 3.1 above.	Teachers carries out Discussion - Tutorials - Assignments Demonstration	Students to report on observation Students to sort out materials.	- Patients at GOPD - Slides - Workshop/.Studio - Lasting material - Rods, Hinges - Workshop/ -Casting materials
	3.3 Identify the materials necessary for the treatment of each condtion listed in 3.1 above.	Supervision		Patients Costs Attitude applications
	3.4 Assist in the production of materials necessary for the treatment of metabolic	Supervisions		

	disorders. 3.5 Assist in the application of appliances for the treatment of conditions in 3.1 above.		

PROGRAMME:	**NATIONAL DIPLOMA IN PROSTHETICS AND ORTHOTICS TECHNOLOGY**		
SEMESTER:	**ND II**		
CODE:	POT 218	**TITLE: TRAUMATOLOGY I**	
DURATION:	45 HRS THEORY: 15 HRS	TUTORIALS -	PRACTICALS 30 Hours
UNITS:	2.0		
COURSE GOAL:	.		
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:			
1.0 Know types and causes of injuries 2.0 Know the Clinical manifestations of injuries 3.0 Understand the psycho-social problems associated with injuries. 4.0 Know the dangers associated with the intervention of the Traditional Bone Setters (TBSs) and quacks in the treatment of injuries.			

CODE:	**Pot 218**	**TITLE: Traumatalogy I**		**HOURS: 45 Hrs**
General Objectives: 1.0 Know types and causes of injuries.				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	At the end of the cause the students will be able to: 1.1 Define terminologies used in tramatology i.e. - Trauma - Injuries - Wounds - Fractures - Dislocations 1.2 List the types of injuries i.e. - RTAs – Road Traffic Accidents (RTAs) - Sporting injuries - Falls from Height - Industrial Injuries - Assaults. 1.3 Identify the types of injuries listed in 1.2 above. 1.4 List the causes of injuries, based on the types : - RTA i.e. - Vehicles, bicycles, - Motor cycles, etc	Teacher defines the terms and explains each term. Carry out visits to ward. Accident/Emergency Group discussion Visit to A/E Dept. Teacher Conducts visits to Accident/Emergency Dept. Group discussion	Students to attempt to define terms without mix-ups. Students to list types identified and record. Students to identify/differentiate types. Students to be able to identify causes of different types of injuries.	- Patients with injuries - Accident/Emergency - Slides - Patients with types of injuries listed - Video – Clips - Slides - Patients with various types listed: - i.e. Road Traffic Accident - Sporting etc. - CD Packages - Videos/Tves - Slides - Posters

	- Sporting injuries i.e. - Football, swimming, - Any form of sport - Fall from Height i.e. - Maintain Climbing - Falls from houses, trees e.t.c - Assaults i.e. Wife battering, beating etc. - Industrial e.t.c.	-Assignment -Lecture -Visit to A/E Dept -Teacher list the causes on a chart.	

CODE:	**Pot 218**	**TITLE:**	**Traumatology I**	**HOURS: 45 Hrs**
General Objectives: 2.0 Know the Clinical Manifestations of the injuries				
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	2.1 Identify the Clinical manifestations of the various injuries listed in 1.4 above. 2.2 Identify patients with the features listed in 2.1 above. 2.3 Take records of patients with the signs and symptoms listed in 2.1 above. - History of patient - Vital statistics - Investigative reports i.e. Laboratory results X-rays, Scan etc. 2.4 List the complications Associated with injuries:- - Bleeding - Vascular Compromise - Infections - Soft tissue damage Psychosocial problems	- Teachers explains clinical symptoms based on injury - Teacher identifies patients at accident/Emergency dept. - Teacher demonstrates the filling of form/cards - Conducts visits to A/C Dept. Discussion Assignment Teacher lists Complication based on examination of patients	Students carry out physical examinations on patients. Student is assigned a patient and identifies signs/symptoms of each type of injury Students attempt to take history of patients. Students identifies complications and lists them.	- - Patients at A/E Dept. - Slides - CD packages - Record cards - History forms - Videos/Televisions - Slides - CD packages - Videos/TVs. Patients with injury complications - Video clip

CODE: Pot 218	TITLE: Traumatology I		**HOURS:** 45 Hrs
General Objectives: 3.0 Understand the Psycho-social problems associated with injuries.			
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	3.1 State the types of psycho-social problems associated with injuries: - Depression - Fear/anxiety - Frustration - Financial problems - Poor illness - Behaviours - Societal attitude	- Teacher lists types on the board - Discussion - Teacher gives assignment	Students carryout assignment on types of psycho-social problems identified.	- Patient - CD packages - Videos/TVs - Slides
	3.2 Identify patients with the psycho-social problems listed in 3.1 above. 3.3 Explain measures that may be taken to control the problems listed in 3.2 above.	- Teachers demonstrates - Teacher lists measures as discussed - Assignments. - Teacher details measures based on type. - Gives assignments to Students - Discussion	Students identify patients and lists the complications Student identified measures and lists same. - Students to destabilize measures for control based on type - Students to follow up patient.	- Life patients with psychosocial Problems - Patient on treatment. - CD packages - Slides. - Life patients - CD packages

CODE: Pot 218	TITLE: Traumatology I		**HOURS:** 45 Hrs
General Objectives: 4.0 Know the Dangers associated with the intervention of the TBs and Quacks in the treatment of injuries.			
WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	4.1 List the dangers associated with the intervention of TBS and Quacks in the treatment of injuries. - Treatment of injuries - Limb gangrene - Introduction of Inf. - Tetanus - Abnormal union of bones - Deformities - Septaceamia - Death	- Teacher lists dangers associated as listed in 5.1 - Carry out visits to (A/E) Dept - GOPD. - Conduct visits to TBS Clinics - Teachers lists measures to be taken - Assignment	Students to identify dangers at Accidents Emergency Take reports at the Traditional Bone Setters Clinic Students to report on assignment.	- Patients - CD packages - Videos/Televisions - Slides - Slides - Videos/TVs - Previous reports of cases with complications
	4.2 State the measures to be taken To control the problems listed in 4.1 above. 4.2 Describe the measures to be taken to control each problem listed in 4.2	- Teacher to list measures and discuss the measures for the understanding of Students. - Demonstration - Assignment.	Students to report on follow up of patients.	- Slides - CD packages - Life patients - Slides - CD packages.

PROGRAMME: ND PROSTHETICS AND ORTHOTICS			
COURSE: Lower Limb Prostheses II			
CODE: POT 221			
DURATION: 75HRS	**THEORY: 15HRS**	**TUTORIALS**	**PRACTICALS: 60 hrs**
UNITS: 3.0			
COURSE GOAL: The course is designed to enable the student understand the techniques and procedures of casting and fabricating the different types of lower limb prostheses.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0 Know the procedures and techniques of measuring, casting and fabricating knee disarticulation prostheses. 2.0 Know the procedures and techniques of measuring, casting and fabricating trans-femoral prostheses. 3.0 Know the procedures and techniques of measuring, casting and fabricating hip disarticulation prostheses.			

CODE: POT 221	**TITLE: Lower Limb Prostheses II**		**HOURS: 60**hrs	
General Objective: 1.0. Know the procedures and techniques of measuring, casting and fabricating knee disarticulation prostheses.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1. Identify a knee disarticulation prosthesis. 1.2. Describe the functions of a knee disarticulation prosthesis. 1.3. Identify the component parts of a knee disarticulation prosthesis 1.4. Take measurements of a knee disarticulation amputee. 1.5. Take cast of a knee disarticulation amputee. 1.6. Fabricate the following component of the knee disarticulation prosthesis of the foot, knee & socket using appropriate materials. 1.7. Identify faults on a knee disarticulation prosthesis. e.g. joint breakage, damage to the socket etc.	Take students through the measuring, casting, and fabrication of a knee disarticulation prosthesis. Identify the faults on damaged prosthesis and teach them how it could be corrected.	Measuring, casting, identifying component parts, of knee disarticulation prosthesis. Students fabricate foot with wood & rubber knee (wood, socket resin of knee disarticulation prosthesis).	Tape rule, plaster of Paris bandage, P.O.P powder, stockinette, resin and reagents fibre glass. Wooden block steel, uprights Band saw, knife rubber solution.

CODE: POT 221	**TITLE: Lower Limb Prostheses II**		**HOURS: 60**hrs	
General Objective: 2.1. Know the procedures and techniques and techniques of measuring, casting and fabricating knee disarticulation prostheses.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	2.1. Identify a trans-femoral prosthesis 2.2. Describe the functions of. a trans-femoral prosthesis 2.3.Identify the component parts of a trans-femoral prosthesis. 2.4.Take measurements of a trans-femoral amputee. 2.5.Take cast of a trans-femoral amputee. 2.6.Fabricate socket, knee and foot of a trans-femoral prosthesis using appropriate materials. 2.7.Identify faults on a trans-femoral prosthesis. e.g. socket breakage, joint breakage, damage, foot breakage etc.	Take students through the measuring, casting, and fabrication component of a trans-femoral prosthesis. Identify the faults on prosthesis and correct such fault made.	Measuring, casting, identifying component parts, of a knee disarticulation prosthesis. Students fabricate foot with wood & rubber knee (wood, socket resin of knee disarticulation prosthesis).	Tape rule, plaster of Paris bandage, P.O.P powder, stockinette, resin and reagents fibre glass. Wooden block, steel, uprights, Band saw, knife, rubber solution.

CODE: POT 221	**TITLE: Lower Limb Prostheses II**		**HOURS: 60**hrs	
General Objective: 2.1. Know the procedures and techniques of measuring, casting and fabricating knee disarticulation prostheses.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	3.1. Identify a hip disarticulation prosthesis. 3.2. Describe the functions of. a hip disarticulation prosthesis. 3.3. Identify the component parts of hip disarticulation prosthesis. 3.4.Take measurements of a hip disarticulation amputee. 3.5.Take cast of a hip disarticulation amputee. 3.6 Fabricate the following components . of the hip disarticulation prosthesis-socket from resins 3.8 Identify faults on a hip disarticulation prosthesis. e.g. socket breakage, joint breakage, damage, foot breakage etc.	Take students through the measuring, casting, and fabrication component of a hip disarticulation prosthesis. Identify the faults on and rectify such for the students to know.	Measuring, casting, identifying component parts, and identifying faults of a hip disarticulation prosthesis. Students fabricate hip disarticulation socket using resins stockinet & reagents.	Tape rule, plaster of Paris bandage, P.O.P powder, stockinette, resin and reagents fibre glass. Wooden block steel, uprights Band saw, knife rubber solution.

PROGRAMME: ND PROSTHETICS AND ORTHOTICS			
COURSE: UPPER LIMB PROSTHESES			
CODE: POT 222			
DURATION: 60HRS	**THEORY: 15HRS**	**TUTORIALS**	**PRACTICALS: 60hrs**
UNITS: 3.0			
COURSE GOAL: The course is designed to enable the student to understand the different types of upper limb prostheses, casting procedures, materials and fabrication of upper limb prostheses.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0 Know the layout of a prosthetic laboratory. 2.0 Know the tools, machines and materials used in the fabrication of upper limb prostheses. 3.0 Know the procedure and techniques of fabricating wrist disarticulation prostheses. 4.0 Know the procedures and techniques of fabricating trans- radial prostheses. 5.0 Know the procedures and techniques of fabricating trans-humeral prostheses.			

CODE: POT 222	**TITLE: Upper Limb Prostheses**		**HOURS: 60**hrs	
General Objective: 1.0 Know the layout of a prosthetic laboratory.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Identify a prosthetic laboratory and its layout. 1.2 Describe the layout of a prosthetic laboratory. 1.3 Sketch a prosthetic laboratory layout. 1.4 Identify the functions of each aspect of the laboratory.	Take students to a prosthetic laboratory to identify and sketch the lay out.	Sketch the layout of a Prosthetic laboratory	Drawing materials e.g. paper, ruler, pencil etc.

CODE: POT 222	**TITLE: Upper Limb Prostheses**		**HOURS:** 60hrs	
General Objective: 2.0 Know the tools, machines and materials used in the fabrication of upper limb prosthesis.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
2	2.1 Identify the various tools used in the fabrication of upper limb prostheses. 2.2 Identify the machines used in fabrication of prostheses. 2.3 Identify the materials used in the fabrication of upper limb prostheses. 2.4 Explain the functions of various tools, machines and materials used in fabrication of upper limb prosthesis. 2.5 List the tools, machines and materials used in upper limb prostheses.	Take students to a prosthetic laboratory to show them the tools, machines and materials.	Students to identify and list the various tools, machines and materials in a prosthetic laboratory.	List the tools and machines: -Trantman carver -Router machine -Band saw machine -Vacuum machine -Drilling machine

CODE: POT 222	**TITLE: Upper Limb Prostheses**		**HOURS: 60hrs**	
General Objective: 3.0 Know the procedure and techniques of fabricating wrist disarticulation prostheses.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 Identify wrist disarticulation prosthesis. 3.2 Know the functions of wrist disarticulation prosthesis. 3.3 Identify the component parts of a wrist disarticulation prosthesis. 3.4 Take measurements of a wrist disarticulation amputee. 3.5 Take cast of wrist disarticulation amputee. 3.6 Fabricate wrist disarticulation prosthesis. 3.7 Identify faults in such prosthesis e.g. broken socket, malfunctioning hand.	Take students through the measuring, casting identification of faults and fabrication of a wrist disarticulation prosthesis.	Students to measure, cast and fabricate a wrist disarticulation prosthesis.	Tape rule, plaster of paris, water, stockinette and indelible pencil.

CODE: POT 222	TITLE: Upper Limb Prostheses			HOURS: 60hrs
General Objective:4.0 Know the procedures and techniques of fabricating trans- radial prostheses.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
4	4.1 Identify trans-radial prostheses. 4.2 Describe the functions of trans – radial Prostheses. 4.3 Identify the component parts of a trans – Radial Prostheses. 4.4 Take measurements of a trans-radial amputee. 4.5 Take cast of a trans-radial amputee. 4.6 Fabricate a trans-radial prosthesis 4.7 Identify faults in trans radial prostheses.	Take students through the measuring, casting identification of faults and fabrication of a trans – radial prosthesis.	Students to measure, cast and fabricate a trans – radial prosthesis.	Tape rule, plaster of Paris bandage water, stockinette and indelible pencil.

CODE: POT 222	**TITLE: Upper Limb Prostheses**		**HOURS: 60hrs**	
General Objective: 5.0 Know the procedures and techniques of fabricating trans – Humeral Prostheses.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
5	5.1 Identify trans – humeral prostheses. 5.2 Explain the functions of Trans – Humeral Prostheses. 5.3 Identify the component parts of a trans – humeral prostheses. 5.4 Take measurements of a trans-humeral amputee. 5.5 Take cast of a trans-humeral amputee. 5.6 Fabricate a trans-humeral prosthesis. 5.7 Identify faults in trans humeral prosthesis.	Take students through the measuring, casting identification of faults and fabrication of trans humeral prosthesis.	Students to measure cast and fabricate a trans humeral prosthesis	Tape rule, plaster of Paris bandage, water, stockinette and indelible pencil.

PROGRAMME: ND PROSTHETICS AND ORTHOTIC TECHNOLOGY.			
COURSE: ND II (SEMESTER II) Traumatology II			
CODE: POT 223			
DURATION: 45HRS	**THEORY: 15HRS**	**TUTORIALS**	**PRACTICALS: 30hrs**
UNITS: 2.0			
COURSE GOAL: The course is designed to expose students to specific traumatology conditions prevalent in Nigeria.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0. Understand the problems of infection associated with injuries. 2.0. Understand the problems of sub tissue damage associated with injuries. 3.0. Know the materials necessary for the treatment of different injuries. 4.0. To understand the process of assembling specific devices. For the treatment of injuries			

CODE: POT 223	**TITLE: Traumatology**			**HOURS: 60**hrs
General Objective: 1.0 Know the layout of a prosthetic laboratory.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	At the end of the course the student will be able to. 1.1 Define infections 1.2 List types of infections. 1.3 Identify the types of infections common in injuries. 1.4. List micro organisms associated With the development of infections. - Clostridium tetani - Staphylococcus Aureu 1.5. Describe the pathogenesis of infections. 1.5. State the effect of infections an Injuries. 1.7 Describe measures for the Prevention of infections an injuries.	The teacher should define infection and give reasons for studying infection. The teacher should use the types of infection. Acute/Chronic Aerobic/anaerobic/mix. -Lectures -Discussions. Teacher to discuss would infections and state the common causative organisms Like – Staphylococcus aureus. a. staphylococcus Prieumonia. b. Clostridia etc. Teacher should discuss the Bacterial. c. Innoculation. d. Proliferation etc. Teacher to discuss the resultant effect of infection. e. Spread to other centies f. Chronicity	To demonstrate various would in the dressing word. Students. To demonstrate dressing materials To demonstrate methods of dressing .	Drawing materials e.g. paper, ruler, pencil etc.

		Teacher to discuss.		

CODE: POT 223	**TITLE: Traumatology II**	**HOURS: 45hrs**		
General Objective: 2.0. Understand the problems of soft tissue damage associated with injuries.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the student will be able to. 2.1 Define sub-tissue damage. 2.2 State the causes of tissue damage. - Fractured ends - + Poor handling of the injured - External applications like Bandage woods etc. 2.3 List the possible soft tissue injuries. 2.4 State the effect of soft tissue damage an injuries. 2.5 Describe the measures for the control of 1.4 above.	Way of preventing infections - prompt attention - Use of sterile materials. Teacher to discuss tissue damage. Teacher to list soft tissue injuries. g. Myonecrosis h. Vesselrupture i. Weoronal damage etc. Then the result of such damage. j. more infections k. Bleeding/shock l. Nervepalsy.	To demonstrate methods of Bandaging. To demonstrate in particular dressing of a very dirty wound.	- Board/marker - Chart - Postal

PROGRAMME: PROSTHETICS AND ORTHOTICS TECHNOLOGY		
COURSE: THERAPEUTIC SKILL II (SPLINTAGE, SLINGS AND BANDAGES)		
CODE: POT 224	TITLE:	
DURATION: 60HOURS THEORY: 15 HOURS	TUTORIAL: -	PRACTICALS: 45 HOURS
UNITS: 2.0		
COURSE GOAL: The course is designed to enable students understand various therapeutic skills and principle of their application in Orthopedic management and rehabilitation.		
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to;		
1.0 Understand the principles and concepts of splints and splintage 2.0 Understand the meaning, type, uses and correct application of slings 3.0 Understand the basic principles of bandaging, types uses and application 4.0 Understand the basic concept and principles of traction 5.0 Know the principles of muscle contraction and lifting techniques.		

CODE: POT 224		**TITLE:**	**HOURS:**	
General Objective: 1.0 Understand the principles and concepts of splints and splintage.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	1.0 Define the terms - Splints - Splintage 1.2 Explain types of splinting materials - emergency splints - wooden splints - metal splints - plastic splints 1.3 Apply splints on patients 1.4 Explain principles of splintage 1.5 Recognise complication that may arise from improperly applied splints.	Explain the term - splints - splintage Describe type of splinting material; wooden, metal, plastic, and emergency splints. Explain application of splints on patients and supervise students to apply. Describe principles of splintage Describe complications that can arise from improperly applied splints.	Apply splints can patients	

CODE: POT 224	TITLE:	HOURS: 15 HRS

General Objective: 2.0 Understand the meaning, types uses and correct application of sling in management of orthopaedic patients

WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	2.1 Define the term sling 2.2 List different types of sling materials such as;- - cotton bandage - crepe bandage - scarf - calico 2.3 Identify type of slings in 2.2 above - collar 'n' cuff sling - triangular sling 2.4 Demonstrate correct application of sling 2.5 Explain the relationship between Sling and bandage.	Explain the term sling Explain different types of slings materials such as cotton bandage, - crepe bandage - Scarf. Describe type of slings e.g - collar 'n' cuff - triangular sling Supervise students to demonstrate sling application on patients. Describe the relationship between sling bandages.	Demonstrate correct application of slings on patients.	

CODE: POT 224	TITLE:	HOURS:

General Objective: 3.0 Know the basic principles of bandaging types, uses and correct application in management of orthopaedic patients

WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	3.1 Define the terms - bandage - bandaging 3.2 Explain type of bandaging material such as - cotton bandage - crepe bandage - calico - plastic adhesive - elastic adhesive 3.3 Identify type of bandages such as - collar and cuff - figure of 8 - T – bandage - Many – tailed bandage 3.4 Explain principles of bandaging 3.5 Apply bandage 3.6 Explain implication of improperly applied bandages 3.7 Differentiate between types of bandaging techniques and bandage types.	Explain the terms - bandage - bandaging Describe type of bandaging materials such as - cotton bandage - crepe bandage - calico - plastic adhesive - elastic adhesive - muslin Describe type of bandages such as - collar ‘n’ cuff - figure of 8 - T – bandage - Many tailed bandage Describe principles of bandaging Explain implication of improperly applied bandage Explain different types of bandaging techniques and bandage types	Supervise students in demonstration of techniques of applying bandage	Casting room patients bandages of different types. - projector - slide - posters

CODE: POT 224	TITLE:	HOURS:		
General Objective: 4.0 Understand the basic concept and principles of traction				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	4.1 Define traction 4.2 List the type of traction system such as; a) fixed traction b) balanced traction 4.2 Identify equipment and materials needed in applying traction such as - orthopaedic bed with Balkan beam - traction kit - weight - Thomas' splint - Bohler Brown splint 4.3 Explain the basic principles of traction application 4.4 Explain the care of a) traction b) patient in traction 4.5 Apply skin traction as an example of balanced traction 4.6 Identify implication of improperly applied traction	Explain traction Describe type of traction system such as a) fixed traction b) balanced traction Describe equipment and materials needed in applying traction such as - orthopaedic bed with Balkan beam - traction kit - weight - Thomas' splint - Bowler Brown splint Describe the basic principles of traction application Describe the care of a) traction b) patient in traction Describe application of skin traction as an example of balanced traction Explain implication of improperly applied traction.		

CODE: POT 224	TITLE:	HOURS:		
General Objective: 5.0 Understand the basic principles of muscle contraction and lifting techniques.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	5.1 Define the following terms: a. Posture b. Gravity 5.2 Explain principles of muscle contraction. 5.3 Identify different types of lifting: - fore and aft - dragging method - foreman's lift - four handed seat - chair carry method - human crutch - four man lift - six man lift - stretcher method - cradle method 5.4 Describe implication of faulty technique in lifting.	Explain the terms in 5.1 above. Describe the principles of muscle contraction. Describe different types of lifting in 5.3 above. Describe various method of lifting technique. Explain to the students implication of faculty technique.	Support the students to practice the actual lifting.	Practical room Wards Beds Wheel chairs Chairs Stretchers

PROGRAMME: ND PROSTHETICS AND ORTHOTIC TECHNOLOGY		
COURSE: SEMESTER: ND I I (SEMESTER I)		
CODE: POT 225	**TITLE**: CLINICAL PRACTICE I	
DURATION: -	**TUTORIAL**: -	**PRACTICALS**: 30HRS
UNITS:		
COURSE GOAL: The course is designed to enable the students to take basic history and documentation.		
GENERAL OBJECTIVES: On completion of this course the diplomat should be able to:		

1.0 Know the patient.

2.0 Know the history of patient's condition.

3.0 Know the basic examinations carried out on patients.

4.0 Know the intervention given to patients before and the present treatment.

5.0 Participate in the practical application of appliances.

CODE: POT 225	TITLE: CLINICAL PRACTICE II		HOURS: 15 HRS	
General Objective: 1.0 Know the Patient.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the students will be able to: 1.1 Record the socio – chemographic data i.e. name, sex, age marital status, occupation, state of origin and state of domicile etc of patient. 1.2 Record the Health condition of the patients i.e. Amputee, kyphoscoliosis wounds etc.	Teacher to discuss vital statistics as in 1.1. Teacher demonstrates on process of filling Hx forms.	Demonstration in medical records department using pre-existing files. Students learn how to fill the data into record files of patient.	Samples of medical record files - File jackets - Patients history forms - Patients.

CODE: POT 225	TITLE: CLINICAL PRACTICE II	HOURS: 15 HRS		
General Objective: 2.0 Know the history of the Patient's condition.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the students will be able to: 2.1 Record complaints of the patient i.e. pain in the hip, wound, difficulty in walking. 2.2 Take the history of the "presenting complaints" e.g. - occurrence of the complaint - severity. 2.3 Take relevant past medical/surgical history e.g. - diabetes mellitus - previous injuries.	Teacher to discuss ways of listening to patients complaints and history of the disease.	Visit to out patient department.	Patient - samples of filing - history cards - charts.

CODE: POT 225	**TITLE: CLINICAL PRACTICE I**	**HOURS: 15 HRS**		
General Objective: 3.0 Know the Basic Examinations to be carried out on the Patient.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the students will be able to: 3.1 Carry out basic examinations on the patient e.g. - observation/inspection - palpation - percussion - determine ranges of movements of the part of the joints of the body - vital signs i.e. pulse, respiration, blood pressure. 3.2 Interprets the findings of the examinations carried out in 3.1 above.	Teacher discusses and demonstrates on how to carry out Head to Toe examination on a patient. - gives assignments to students. - Conducts visits to OPDs	Students to carry out examinations on patients assigned and to report on findings. Assignment on above.	- patient - examination couch/bed - screen - turning forks - vibrators - gravimeters - BP apparatus - thermometer - tendon hammer - history taking - card/kardex - vital signs forms - patients history forms/booklets - videos/TV

CODE: POT 225	TITLE: CLINICAL PRACTICE I	HOURS: 15 HRS

General Objective: 4.0 Know the intervention given to patients before and present treatment.

WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the students will be able to: 4.1 Determine the past treatment given to patient. 4.7 State the present treatment given to patients. 4.8 Identify devices used for treatment of patients.	Teacher to discuss this and checks the past medical records of the patient - treatment - investigation - examinations reports etc - gives assignment to students by allocating patients to students. Teacher to discuss and give assignment.	Students to demonstrate knowledge of filling forms and check past interventions. Students verbally communicate with patient to elicit answer. Students to identify the appliances and record.	- past medical files files - patients - slides - investigation reports - patients history file - sample of present treatment. Sample of appliances used by patient.

CODE: POT 225	TITLE: CLINICAL PRACTICE I	HOURS: 15 HRS		
General Objective: 5.0 Participate in the practical application of the appliances.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the students will be able to: 5.1 Identify materials used for production of prosthetic/ortholics and plaster appliances. 5.2 List types of appliances in 5.1 above used for patient's treatment.	 Teacher explains and identifies materials. - Give assignment. Teacher explains types of appliances as in resources.	Students records identified materials and services. Students identifies type of appliance for type of treatments.	- POP - Casting materials - Fibre glass - Poly propylene - Metallic hinges - Adhesives etc. - Walking aid/zimer frame - POP jacket - Prosthesis - Calipers - Milwaukee braste - Cervical collar.

Programme: HIGHER NATIONAL DIPLOMA IN PROSTHITICS AND ORTHOTICS TECHNOLOGY.				
Course: BIOMECHANICS III				
Code: POT 311	TITLE:			
Duration: 60 HRS	THEORY: 15	TUTORIALS	PRACTICALS 45	
Units :	2.0			
Course Goal:: The course is designed to acquaint the student with an in depth knowledge of Biomechanics of lower and upper limb prostheses and orthoses.				
General Objectives : On completion of this course the diplomate should be able to:				
1.0 Know the interface forces between the stump and socket and application of the biomechanical forces in socket design. 2.0 Understand the bench, static and dynamic alignment of lower and upper limb prosthesis with reference to their biomechanical principles. 3.0 Know the pathological gait, its analysis and the application of appropriate forces.				

Code: POT 311	**Title**	**Hours: 45**	
General Objective: 1.0 Know the interface forces between the stump and socket and application of the biomechanical forces in socket Design.			
Week	Specific Objectives	Teacher Activity	Practical	Resources
	1.1 Describe the different types of amputation Stump and socket design. 1.2 Identify the different types of stump in Patients. 1.3 Explain the follows; (i) Bow land marks (ii) Surgical (iii) Scares 1.4 Touch the patients stump to fell his/her Reaction. 1.5 Explain the magnitude of pressure between The stump and socket. 1.6 Determines a typical stump/socket pressure On a human being. 1.7 Explain the importance of the shape of the Socket to the stump pressure distribution	Explain the types of stump and socket design. Describe the different types of stumps. Show students images of different types of stumps.	1.1 Identify different types of stump in a patients. 1.2 Touch the patients stump to determine his/her reaction. 1.3 Determine atypical stump/socket pressure on a human being.	Humans socket design modules (stumps) and Audio Visuals

CODE: POT 311		**TLTLE**	**HOURS: 45**	
General Objectives: 2.0 Understand the bench, static and dynamic alignment of lower and upper limb prosthesis with reference to their biomechanical principles.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	Resources
	2.1 Describe the bench alignment procedures in prosthesis. 2.2 Identify the component required for alignment. Procedures in prosthesis. e.g. knee component, foot component, socket component insert. 2.3 Assemble the component identify the 2.1 above. 2.4 Explain the terms "static (standing) alignment" and dynamic (walking) alignment. 2.5 Explain the purposes of each of 2.4 above. 2.6 Demonstrate the bench alignment, static alignment and dynamic alignment on patients.	Describe the components required for alignment ofprosthesis Explain each of the alignments. Lead students to demonstrate the various alignments.	1.1 Identify the components required for alignment 1.2 Assembly the components identified above. 1.3 Demonstrate the (i) Bench alignment (ii) Static alignment (iii) Dynamic alignment on patients.	Alignment jigs, -Dynamic static sets.
CODE		TLTLE	HOURS:	
General Objectives: 3.0 Know the pathological gait its analysis and the application of appropriate forces.				
Week	Specific Objectives	Teacher Activity	Practical	Resources
	3.1 Define pathological gait 3.2 Identify the pathological gait patterns in a patient. E.g. dipping gait, lateral trunk bending, vaniting e.t.c 3.3 Describe each of the patterns, identified in 3.2 above 3.4 Observe the patterns in 3.2 above on the patients from behind and front.	3.1 Explain pathological gait. 3.2 Explain the patterns in pathological gait 3.3 Describe the causes of the pathological gait, 3.4 Use patient for	3.1 Identify the pathological patterns in a patient. 3.2 Observe the patterns above on the patient. 3.3 Design the orthotic	Humans patient and Audi-visual teaching aids.

	3.5 Explain the causes of the pathological gaits in 3.2 above. 3.6 Describe the orthotic devices for the treatment of each of the patterns in the pathological gait. 3.7 Select a patient for the following demonstrations and observe muscle activities on the body. (a). walking with an appliance (b). fitting down with an appliance ©. Running with an appliance (d). bending with an appliance.	demonstration.	devices for the treatment of each of the patterns in the pathological gait.	
CODE		TLTLE	HOURS:	
General Objectives: 4.0 Know the orthoses for lower limb diseases.				
Week	Specific Objectives	Teacher Activity	Practical	Resources
	4.1 Define orthosis 4.2 List the major types of orthosis in 4.1 above 4.3 Describe each of the major types of orthosis in 4.1 above 4.4 State the functions of orthosis 4.5 Explain the hazards in orthotic usage 4.6 Identify the following orthotic devices (a). ankle foot orthosis (b). knee-ankle foot ©. Hip-knee-ankle foot orthosis (d). orthopeadic shoes (e). assistive locomotive aid. 4.7 State functions of each of the above.	4.1 Explain the term orthosis 4.2 Give a description of each of the major types of orthosis 4.3 List the functions of orthosis 4.4 Explain the hazards in orthotic usage	Identify the following orthotic devices (a). ankle foot orthosis (b). knee-ankle foot orthosis ©. Hip-knee-ankle foot orthosis (d). orthopeadic shoes (e). assistive lomotive aid (f). wrong fitting in patient	Humans orthotic devices, components aid teaching aids.

Programme: HIGHER NATIONAL DIPLOMA IN PROSTHETICS AND ORTHOTICS TECHNOLOGY.			
Course: SEMESTER: HND I (SEMESTER I)			
Code: POT 312	TITLE: FUNCTIONAL ANATOMY I		
Duration: 60 HRS THEORY: 15HRS	TUTORIALS	PRACTICALS 15HRS	
Units : 2.0			
Course Goal: The course is designed to enable the students to know normal movements across the joints and the muscle acting on the joint			
General Objectives : On completion of this course the diplomate should be able to:			
1.0. Know the joints of the upper limbs 2.0. Know the muscles of the upper limbs 3.0. Know the joints of the lower limbs. 4.0. Know the muscles of the lower limbs			

Code: POT 312		**Title:** FUNCTIONAL ANATOMY I	**Hours: 15 hrs**	
General Objective: 1.0 Know the joints of the upper limbs and their movements				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the diplomates should be able to: 1.1 Define the following terminologies i.e. -Joints -Upper limb -Movement -Rotation 1.2 Classify the types of joints in the -Upper limb -Ball & Socket joints -Hinge joint -Gliding joint e.t.c 1.3 Identify the joints of the upper limp 1.4 Explain the functions of the upper limp joints. 1.5 Describe the movements of the joints of the upper limps.	1.1 Explain the following terminologies: joints, upper limbs, movement and rotation. 1.2 Supervise students to classify the types of joints in the upper limb 1.3 Supervise students to identify the joints of the upper limb. 1.4 Describe the functions of the upper limb. 1.5 Explain the movements of the joints of the upper limbs i.e. flexion extension, abduction adduction	Identify the joints of the upper limps. Stands to carry out the joint movements	-Skeleton -Models anatomical -skeleton -Anatomical models -Slides -Posters -Charts -Videos

Code: POT 312		**Title:** FUNCTIONAL ANATOMY I	**Hours: 15 hrs**	
General Objective:2.0. Know the muscles of the upper limbs				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	2.1. Define muscles of the upper limbs 2.2. classify the muscles: -flexor group -Extensor group -multipennate muscle -Uni-pennate muscles 2.3. Describe the function of the muscles of the upper limb. 2.4. Identify the muscles involved in the movements of the joints of the upper limb.	2.1 Explain the term muscle 2.2 Group the muscles according to their function 2.3 Supervise students to identify the muscles involved in the joints of the upper limb.	Identify the muscles involved in the movements of the joints of the upper limb.	Anatomical models -video/TV -slides -posters

Code: POT 312		**Title:** FUNCTIONAL ANATOMY I	**Hours:** 15HRS	
General Objective: 3.0. Know the joints of the lower limbs and their movements.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	3.1 Identify joints of the lower limbs 3.2 Classify the joints of the lower limbs. i.e. -Ball and socket Joints -Hinge joints -Gliding joints 3.3 Explain the functions of the joints of the upper limbs. 3.4 Describe the movement of the joint of the lower limbs.	Explain the joints of the lower limbs Group the joints of the lower limbs according to their functions. Explain the functions of the joints of the upper limbs. Explain the movement of the lower joints of the lower limbs.		Anatomical models -Skeleton -Bones & Joint e.t.c. -video -slides

Code: POT 312		**Title:** FUNCTIONAL ANATOMY I	**Hours:** 15 HRS	
General Objective: 4.0. Know the muscles of the lower limbs and their movements.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	4.1 Identify muscles of the lower limbs. 4.2 Classify muscles of the upper limbs: -Flexor group i.e. satorius muscle -Extensor group i.e. quadriceps muscles 4.3 Explain the functions of muscles of the limbs 4.4 Identify the muscles involved in the movements of the joints of the lower limbs.	Supervise students to identify muscles of the lower limbs Group muscles of the lower limbs according to their functions. Describe the functions of the muscles of the lower limbs. Supervise students to identify the muscles involved in the movement of the joints of the lower limbs.	Identify the muscles of the lower limbs. Identify the muscles involved in the movements of the joints of the upper limb.	Anatomical models -Slides -Video relevant -Computers packages

PROGRAMME: HND PROSTHETICS AND ORTHOTIC TECHNOLOGYH			
COURSE: SEMESTER HND I (SEMESTER I)			
CODE: POT 313	**TITLE: ORTHOPAEDIC PATHOLOGY III**		
DURATION: 30HRS	**THEORY:**	**TUTORIALS**	**PRACTICALS: 30hrs**
UNITS: 2.0			
COURSE GOAL: The course is designed to enable the student understand the pathophysiology of orthopaedic conditions and their effects on the patients.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0 Know the effects of pathological conditions on the patients. 2.0 Know the measures that can be taken to control pathological conditions. 3.0 Know the materials necessary for the treatment of patients with the above conditions.			

CODE: 313	**TITLE: Orthopaedic Pathology III**		**HOURS: 30hrs**	
General Objective: 1.0 Know the effects of pathological conditions on the patients.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	At the end of the course the student will be able to: 1.1 List the various types of pathological conditions prevalent in orthopaedic: - Gait problems - Deformities - Himp problem - Problem of the knee -Osteoathtics -Peptic disease - S.U.F.E. - Septic arthotis 1.2 Identify the effects of pathological conditions on the patients.	Teacher Teachers students on types of pathology conditions -Discussion -Conducts visits to GOPD Discuss and Lecturer on the effects of orthopaedic pathology problems on patients, Demonstration.	Students to carry out examinations on patients with pathology conditions. Students to pathology for effects	-Patients with orthopaedic pathology - X-rays -Vides clips -Slides -Clinics – out patient -Patients with pathology problems -Videos/TVS

CODE: POT 313	**TITLE Orth. Path. III**			**HOURS: 30hrs**
General Objective: 2.0 Know the measures that can be taken to control pathological conditions.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
2	2.1 State measures that can be taken for the control of various pathological conditions listed in 1.1 above. 2.2 Control various pathological conditions as listed in 1.1 above.	Lecture, Group Discussion visit to consulting room	Student to carry out measures on patients with pathological problems.	Patients with orthopaedic pathology problems Slides, CD packages

CODE: POT 313	**TITLE Orthopaedic Pathology III**			
HOURS: 30hrs				
General Objective: 3.0 Know the materials necessary for the treatment of patients with pathological conditions.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 Identify materials necessary for the treatment of patients with pathological conditions. 3.2 Assemble the materials needed for the treatment of patients with pathological conditions. 3.3 Apply the materials necessary for the treatment of patients with orthopaedic pathological conditions. 3.4 State the rationale for the choice of the materials applied in pathological conditions. 3.5 State the rationale for the applications of materials in treating pathological condition.	Discussion Demonstration, Conduct visit to GOPD Tutorials “ “	Students to identify materials “ “	Materials like: - Corsets - -Casting materials - -Minerya jacket - Malwaukee brace etc Materials to be assembled. Materials to be applied:

PROGRAMME:HND – PROSTHETICS AND ORTHOTICS		
COURSE: Lower Limb Prosthetics		
CODE: POT 314	**TITLE:**	
DURATION: THEORY: 30 hrs	**TUTORIALS**	**PRACTICALS: 45hrs**
UNITS: 3.0		
COURSE GOAL: The course is designed to enable the student be able to carry out the procedures required for fabrication and fitting of lower limb prostheses.		
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:		
1.0 Know common terms used in lower limb prosthetics. 2.0 Know how to asses a lower limb amputee. 3.0 Know how to measure and cast a lower limb amputee. 4.0 Know how to modify a positive cast of a lower limb amputee 5.0 Know how to fabricate a lower limb prothesis 6.0 Know how to align and fit a lower limb prothesis		

CODE: POT 314 **TITLE: Lower Limb Prosthetics** **HOURS: 75hrs**				
General Objective: 1.0 Know common terms used in lower limb prosthetics.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Explain the terms used in lower limb prosthetics e.g. prosthetist, prosthetics, , prosthesis, sagittal plane, frontal and coronal plane, internal and external rotation, alignment, adduction, abduction, lateral rotation, circumduction. etc 1.2 Identify when the terms in 1.1 above are to be used.	Explain the terms listed in 1.1 to the students. Demonstrate the terms with available materials e.g. human skeleton and human model.	Students to draw some parts of human lower limb skeleton in different planes-sagtittal, frontal and coronal planes. Demonstrate adduction, abduction, flexion, extension and circumduction movements.	Drawing materials, Human charts Human skeleton and model
General Objective: 2.0 Know how to assess a lower limb amputee.				
2	2.1 Take history of the amputee e.g. family and social background, sex, age, cause of amputation. 2.2 Assess muscle power e.g. atrophy, sensation and neurological deficits. 2.3 Record amputees physical fitness e.g. dizziness. 2.4 Assess the stump condition of the amputee e.g. painful and tender spots, contracture, shape and colour. 2.5 Counsel the amputee on the appropriate prosthesis required for his use.	Take the students through patients observation, examination and assessment. Record findings. Educate the patients on home programme.	Students to inspect, observe, examine the patient and record findings. Teach home programme e.g. stump bandaging and care.	Writing materials, measuring tape, goniometer.

CODE: POT 314	**TITLE: Lower Limb Prosthetics**			**HOURS: 75hrs**
General Objective: 3.0 Know how to measure and cast a lower limb amputee.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 Identify the various tools and materials required for measuring and casting of a lower limb amputee e.g. tape measure, Plaster of Paris, bandage, water, bowl, scissors and paper for record taking. 3.2 Explain the functions of the tools and materials listed in 3.1 above. 3.3 Measure and cast a lower limb amputee following these steps: (1) tape measurement of the stump and recording (2) cover the stump with stockinette soaked in water (3) wrap the stump with wet plaster of paris bandage (4) Allow plaster of paris to set then remove from stump. (5) Clean the stump.	Show the students the tools and materials used in measuring and casting of a lower Limb amputee. Take them through the procedure of measuring and casting as stated in 3.3 1 – 5.	Students to measure and cast a lower limb amputee. Record measurement	Tape rule; Stockinette indelible pencil Plaster of Paris bandage Knife Water Scissors Lower limb amputee.

DE: POT 314	TITLE: Lower Limb Prosthetics			HOURS:
neral Objective: 4.0 Know how to modify a positive cast of a lower limb amputee.				
EEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	4.1 Identify the materials used in producing a positive cast. 4.2 Produce a positive cast from the negative cast already produced from the patients stump in 3.3 above. 4.3 Identify the tools used in modifying a positive cast. 4.4 Explain at which point of the modification each tool is used e.g. surform files, tape rule, plaster of paris powder. 4.5 Modify the positive cast according to the measurements already taken in 3.3 above.	Show the students the tools used in modifying a positive cast. Explain their functions. Modify a positive cast of a lower limb amputee.	Students are to produce positive cast from the cast taken in 3.3 by filling the negative cast with plaster of paris powder and allowing it to set. Then modify the positive cast under supervision.	Surform files – round, half round and flat. Plaster of Paris powder bowl of water Spatula Wire gauze.

DE: POT 314	TITLE: Lower Limb Prosthetics			HOURS:75hrs
neral Objective: 5.0 Know how to fabricate a lower limb prosthesis				
EEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	5.1 Fabricate a prosthetic socket from the positive cast produced in 4.5 above using resin, stockinettes and fibre glass. 5.2 Assemble prosthetic foot, wooden ankle and socket. 5.3 Glue the parts according to the measurements of the patient's limb statically. 5.4 Get the patient to walk on the assembled prosthesis and make corrections for good gait. 5.5 Shape the prosthesis using router machine or rasp file. 5.6 Finish the prosthesis by lamination with resin, reagents and stockinettes.	Take the students through the procedures of prosthetic fabrication listed in 5.1 to 5.6.	Students to fabricate lower limb prostheses under supervision.	Resin and reagents Stockinettes P.V.A. sleeves Soft liners Adhesives Positive cast.

CODE: POT 314 **TITLE: Lower Limb Prosthetics** **HOURS:**				
General Objective: 6.0 Know how to align and fit a lower Limb Prosthesis on an amputee				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
6	6.1 Describe bench, static and dynamic alignments of a lower limb prosthesis. 6.2 Carry out bench and static alignments of a lower limb prostheses. 6.3 Fit the patient with the statically aligned prosthesis. 6.4 Carry out dynamic alignment on the lower limb prosthesis. 6.5 Correct any mal-alignments on the prosthesis by making adjustments Posterior Planes in medio-lateral and Antero 6.6 Identify the component parts of different level of amputations e.g. <u>Lower Limbs</u> 1) Hemi pelvectomy 2) Above knee 3) Through knee 4) Below knee 5) Symes knee 6) Choparts knee 7) Pirogoff.	Align a lower limb prosthesis at bench, static and dynamic levels for the students to see. Malalign the prosthesis deliberately for the students to know what malalignment is i.e. distort the limb configuration. Posterior Planes -Lead students to select component part for upper and limb prosthesis. -Describe the differences in variety of component parts as per the different level of amputation.	**Students to align a lower limb prosthesis at bench, static and dynamic levels under-** Select component part for upper limb prosthesis. -Demonstrate the component part of the upper limb prosthesis. supervision.	Bench alignment jig Work bench Plum line Water level **Allen keys.** Component Parts moulds **Provision.**

PROGRAMME: HND PROSTHETICS AND ORTHOTIC TECHNOLOGY			
SEMESTER: HND I (SEMESTER I)		***TITLE*: CLINICAL PRACTICE II**	
CODE: POT 315			
DURATION: 45 HOURS	**THEORY:**	***TUTORIALS***	**PRACTICALS: 30 HRS**
UNITS: 2.0			
COURSE GOAL: The course is designed to enable the students acquire clinical skills in patient care.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to: 1.0 Know the vital statistics of the patient. 2.0 Know the necessary measurements in clinical practice. 3.0 Demonstrate ranges of movements.			

CODE: POT 315	TITLE: CLINCIAL PRACTICE II			HOURS: 45 HRS
General Objective: 1.0 Know the vital statistics of the patient.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	1.1 Collect the following information: - Age - sex - occupation - marital status - address etc. 1.2 Document information in 1.1. above in appropriate data forms.	Teacher to explain the importance of data for care of patient Teacher to demonstrate how to collect data	Student to record data collected Students collect data and record appropriately	-History forms -Slides -Charts -History forms -slides -charts etc.
CODE: POT 315	**TITLE: CLINCIAL PRACTICAL II**			**HOURS: 45 HRS**
General Objective: 2.0 Take the necessary measurements in clinical practice.				

WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	2.1 Take the following measurements of the patient. - Weight - Height - Limb length - Angles of deviation of joints. 2.2 Document the measurements in 2.1 above.	-Teacher explains how to take measurements listed on 2.1 -Assigns student to a patient -Teacher, explains/ demonstrates documentation of findings. -Gives assignment.	Students take measurements and records appropriately. Students records measurements appropriately.	-Weighing scale/balance -Tape rule/rulers -graduated height stick -History form

CODE: POT 315	**TITLE: CLINCIAL PRACTICE II**	**HOURS: 45 HRS**
General Objective: 3.0 Demonstrate ranges of movements.		

WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	3.1 Demonstrate ranges of movements in the following joints: - Shoulder - Elbow - Wrist - Hip - Knee - Ankle 3.2 Document the measurement in 3.1 above.	-Teacher demonstrates ranges of movement at all the listed joints. - assign students to patients. Teacher demonstrates documentation and appropriate filling techniques.	Student demonstrates movement via learning Student carry out documentation appropriately.	-Patient -Gonio meter -Tape rules -Rulers -History forms -Slides.

PROGRAMME: HND PROSTHETICS AND ORTHOTICS TECHNOLOGY

SEMESTER: HND I (SEMESTER II)			
CODE: POT 321	**TITLE: FUNCTIONAL ANATOMY II**		
DURATION: 15 Hrs	**THEORY: 15 Hrs**	**TUTORIAL:**	**PRACTICALS:**
UNITS: 1:0			
COURSE GOAL:			
GENERAL OBJECTIVES: On completion of this course the diplomat should be able to:			
0.0 Know the joints of the spine and their movements. 1.0 Know the muscles of the spine and their movements			

CODE: POT 321		**TITLE: FUNCTIONAL ANATOMY II**		**HOURS: 15 HRS**
General Objective: 1.0 Know the joints of the spine and their movements				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	At the end of the course the students will be able to: 1.1 Identify the joints of the spine 1.2 Classify the joints of the spine.	Teacher lists the joints for students understanding as: - Cervical - Thoracic	Student identifies the various types on a skeleton and model	- CD packages - Slides - Skeleton - Analytical

	1.3 Explain the functions of the spinal joints in 1.1 above. 1.4 Describe the movements of the joints at the spine.	- Sacrum - Coccyx - Lumbar Teacher demonstrates the functions of weight bearing - transmission of weight - trunk movement - stock absorber - give assignments. Teacher recalls as flexion rotatory, exterior Assignment for students to carry out movement at the spine.	Students report on assignment. Student reports on assignment	models.

General Objective: 2.0 Know the muscles of the spine and their movements.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	1.1 Define muscles of the spine. 1.2 Classify muscles of the spine: - flexion muscles	Teacher discusses definition and differentiates muscles from joints. Teacher classifies spinal muscles	Students to practice extension and flexion movements and to repeat.	- Skeleton - Anatomical models. - CD packages

	- Extension muscles . Erector spinalis. 1.3 Describe the functions of the muscles of the spine. 1.4 Identify the muscles involved in the muscles of the joints of the spine.	and gives assignments. Conduct visits to gymnasium. Teacher lists functions as:- - flexion - extension. Teacher identifies muscles as - quadrates - extension - carry out visit to physiotherapy department.		- Life patients at the physiotherapy - Skeleton - Muscles - CD packages - Skeleton - Muscles - CD packages.

PROGRAMME: HIGHER NATIONAL DIPLOMA – PROSTHETICS AND ORTHOTICS TECHNOLOGY

COURSE: Biomechanics IV			
CODE: POT 322	**TITLE:**		
DURATION:	**THEORY: 15HRS**	**TUTORIALS**	**PRACTICALS: 60HRS**
UNITS: 3.0			
COURSE GOAL: The course is designed to acquaint the student with the knowledge of providing optimal prosthetic and orthotic care to the patients.			
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:			
1.0 Know the biomechanics of the spine and thorax region of the body 2.0 Know the biomechanics of the upper and lower limbs. 3.0 Know upper limb prosthetic and orthotic fitting, alignment and function.			

CODE: POT 322	**TITLE:**		**HOURS:**	
General Objective: 1.0 Know biomechanics of the spine and thorax region of the body.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Identify the spine, thorax and the whole vertebrae column of the body. 1.2 Describe the various shapes of the bones of the vertebrae column i.e. the cervical, thoracic and lumbo sacral. 1.3 Identify the various bone the vertebrate column. 1.4 Sketch the shape of the bones of each of the segment of the vertebrae column. 1.5 Describe the motion of the various segments of the vertebrae column 1.6 Demonstrate the motion of the various segments and applied forces.	-Lead students to identify the spine, thorax and the whole vertebrae column of the body. Explain the shapes of the vertebrae column Lead students to sketch the segments of the vertebrae column.	Sketch the shape of the bones of each of the segment of the vertebrae column Identify the spine, thorax and the rest of the vertebrae column. Demonstrate the motion of the various segments of the vertebrae column.	Human Skeleton and teaching aids Human being Vertebrate bones magnifying glasses. Skeleton human frame Human demonstrations.

DE: POT 322	TITLE:	HOURS:		
neral Objective: 2.0 Know biomechanics of the upper and lower limbs.				
EEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	6.7 Identify the motions of the upper and lower limbs. 6.8 Describe the motions of the two limbs of human. 6.9 Demonstrate the motions of the upper and lower limbs of humans. 6.10 Apply pressure force to determine how much swing the upper limb can provide. 6.11 Select component part for upper limb prosthesis. .	-Lead students to identify the motions of the upper and lower limbs. -Explain the motions of the two limbs of humans. -Lead students to demonstrate the motions of the limbs.	-Identify the motions of the upper and lower limbs of humans. -Demonstrate the motions of the upper and lower limbs of humans. -Apply pressure force to determine how much swing the upper limb can provide.	Humans Skeleton Teaching aids And Audio-visual

CODE: POT 322	TITLE: BIOMECHANICS			HOURS:
General Objective:3.0 Know upper limb prosthetic and orthotic fitting, alignment and function.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 Define the following: a) bench alignment b) dynamic alignment c) static alignment with effect on muscle action of human body. 3.2 Explain the law of inert a, momentum and its application to normal- human locomotion. 3.3 Explain the use of the functional terminal devices in upper limb prosthesis and orthosis. 3.4 Describe body alignment to prosthetic and orthotic fitting.	-Describe the usage of the functional devices in upper limb prosthesis and orthosis. -Explain body alignment to prosthetic and orthotic fitting.	Demonstration with patients	Terminal devices Components Devices provision.

PROGRAMME: PROSTHETICS AND ORTHOTICS TECHNOLOGY – HIGHER NATIONAL DIPLOMA			
COURSE: LOWER LIMB ORTHOTICS			
CODE: POT 323	**TITLE: LOWER LIMB ORTHOTICS**		
DURATION: 75 hours	**THEORY: 15hours**	**TUTORIALS**	**PRACTICALS: 45hrs**
UNITS: 3.0			
COURSE GOAL: The course is designed to enable the students appreciate the use and importance of orthoses			

GENERAL OBJECTIVES: On completion of this course diplomate should be able to:
1.0 Know how to assess patient for lower limb orthoses. 2.0 Know how to educate patient on the need to obtain orthoses. 3.0 Know how to instruct patient on the use and maintenance of orthoses. 4.0 Know how to produce and modify positive cast to desired measurement and shape.

CODE: POT 323	**TITLE: LOWER LIMB ORTHOTICS**		**HOURS: 75hrs**	
General Objective: 1.0 Know how to assess patient for Lower Limb Orthoses				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Measure patient for lower limb orthoses. 1.2 Cast for lower limb orthoses e.g. (a) Ankle – Foot orthosis (b) Knee – Ankle – Foot orthosis.	Instruct on preparation of patient and measurement for lower limb orthoses	Demonstrate the technique and cast taking for lower limb orthoses.	- Tape measure - writing materials.

CODE: POT 323	TITLE: LOWER LIMB ORTHOTICS			HOURS: 75hrs
General Objective 2.0 Know how to educate patient on the need to obtain Orthoses				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	2.1 Counsel patient on the need lower limb orthoses. 2.2 Counsel patient to accept lower limb orthoses.	Instruct on appropriate teaching/counseling methods.	Demonstrate (role play) patient personnel interpersonal relationship	Writing materials.

CODE: POT 323	TITLE: LOWER LIMB ORTHOTICS	HOURS: 75hrs
General Objective: 3.0 Know how to instruct patient on the use and maintenance of orthoses.		

Week	Specific Objectives	Teacher Activity	Practical	Resources
	3.1 Fit lower limb orthoses for patients on trial basis. 3.2 Carry out final fitting of lower limb orthoses. 3.3 Guide patient on gait training. 3.4 Counsel patient on maintenance of the lower limb orthoses.	Instruct on:- - trial fitting - final fitting - gait training -maintenance of lower limb orthoses.	Demonstrate: - trial fitting - final fitting - gait training -maintenance and of lower limb orthoses.	-parallel bars -walkers -mirror.
CODE: POT 323	**TITLE: LOWER LIMB ORTHOTICS**			**HOURS: 75hrs**
General Objective: 4.0 Know how to produce and modify positive cast to desired measurement and shape.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	4.1 Produce models for lower limb orthoses. 4.2 Produce positive cast for lower limb orthoses e.g (a) Ankle – Foot orthoses (b) Knee – Ankle Foot orthosis. 4.3 Modify the positive cast in 4.2 above to measurement and shape.	Guide on: -Production of models -Production of positive cast -Modification of cast to measurement and shape.	Produce Positive casts of lower limb orthoses.	-Tape measure -Plaster of paris power -separating agent -work bench -tools.

PROGRAMME: PROSTHETICS AND ORTHOTICS TECHNOLOGY – HIGHER NATIONAL DIPLOMA			
COURSE: UPPER LIMIB AND SPINAL ORTHOTICS			
CODE: POT 324	**TITLE:**		
DURATION: 75 HOURS	**THEORY: 30hours**	**TUTORIALS**	**PRACTICALS: 45 HRS**
UNITS: 3.0			
COURSE GOAL: The course is designed to enable the students produce upper limb and spinal orthoses			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			

1.0 Understand the application of orthotic fittings in upper limb and spine
2.0 Know the effects of deformities on the spine
3.0 Understand use of corrective forces in upper limb orthotic Device Application.
4.0 Understand the application of stabilization force in upper limb orthotics.

CODE: POT 324	**TITLE: UPPER LIMB AND SPINAL ORTHOSIS**	**HOURS: 75hrs**
General Objective: 1.0 Understand the application of orthotic fittings in upper limb and spine**.**		

Week	Specific Objectives	Teacher Activity	Practical	Resources
	1.1 Identify upper limb orthotic fittings. 1.2 Explain ways of wearing fittings to clients. 1.3 State the functions of various orthotic fittings used in upper limb. 1.4 Identify clients in need of upper limb orthotic fittings. 1.5 Demonstrate how to wear upper limb orthotic fittings. 1.6 Construct upper limb orthotic fittings.	Explain upper limb orthotic device. Take students to clinics. Wear orthotic fittings on client Construct upper limb orthotic fittings.	Visit wards to see clients in need of upper limb orthotics device Wear upper limb orthoses to clients. Construct upper limb orthotic device in the laboratory	Clients Clinics Metal Leather Casts Various orthotic Devices.

CODE: POT 324	**TITLE: UPPER LIMB AND SPINAL ORTHTICS**	**HOURS: 75hrs**
General Objective: 2.0 Know the effects of deformities on the spine.		

Week	Specific Objectives	Teacher Activity	Practical	Resources
	2.1 Explain the complications that my arise from use of spinal orthotic devices. 2.2 Describe a typical vertebral spine. 2.3 Draw a typical human vertebral spine. 2.4 Explain the principle of force application in orthotic devices. 2.5 Demonstrate force application on various upper limb orthotic devices.	Take students to orthotic clinic. Show model of vertebral spine Draw spinal vertebra. Show samples of upper limb orthotic device apply different types of upper limb orthotic devices.	Draw a typical vertebral spine	Human skeleton Paper Ruler Pencil Eraser Upper limb Orthotic device different types.

CODE: POT 324	**TITLE: UPPER LIMB AND SPINAL ORTHOTICS**	**HOURS: 75hrs**
General Objective: 3.0 Understand use of corrective forces in upper limb orthotic device application.		

Week	Specific Objectives	Teacher Activity	Practical	Resources
	3.1 Define force. 3.2 Explain classification of force. 3.3 Describe the application of 3.1 above in orthosis. 3.4 Explain the use of force as a corrective measure in orthosis. 3.5 Demonstrate the use of different forces to correct upper limb orthoses.	Take students to the clinic/ward.		Clinic/ward Tape Various sizes of Orthotics Clients Students.

CODE: POT 324	TITLE: UPPER LIMB AND SPINAL ORTHOTICS			HOURS: 75hrs
General Objective: 4.0 Understand the application of stabilization force in upper limb orthotics.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	4.1 Define stabilization force. 4.2 Explain the principle of application of 4.1 above in orthosis. 4.3 Describe use of stabilization forces in the following conditions – quadriplegia, hemiplegia 4.4 Demonstrate application of stabilization forces in the conditions scoliosis, lordosis kyphosis kyphoscoliosis. 4.5 Describe a typical cervical spine. 4.6 List functions of cervical spine. 4.7 State the relationship of 4.5 above with the surrounding structures. 4.8 Demonstrate fabrication of cervical orthosis. 4.9 Demonstrate fitting of cervical orthosis.	Take students to the ward. Take students to clinics apply stabilization forces an client with these conditions. Show model of a typical cervical spine. Draw a typical cervical vertebra. Take students to orthosis workshop Take students to clinic.	Visit to clinic Apply orthotic devices (upper limb) on client using stabilization forces. Draw a typical cervical vertebra Fabricate cervical orthosis. Fit cervical orthosis on clients.	Chalk Board Chart Auster Ward clinic Clients Students Upper limb orthotic devices (all types) Cervical vertebra (model) Paper Pencil eraser Orthotic workshop Knives Metal Leather,plastic, clinic, client, orthotic devices, various sizes.

PROGRAMME: PROSTHETICS AND ORTHOTICS TECHNOLOGY			
COURSE: ETHICS IN PROSTHETICS AND ORTHOTICS PRACTICE			
CODE: POT 325	**TITLE: ETHICS IN PROSTHETIC AND ORTHOTIC PRACTICE**		
DURATION:	**THEORY: 15hours**	**TUTORIALS**	**PRACTICALS**
UNITS: 1.0			
COURSE GOAL: This course is designed to provide the student with the basic ethics of the practice of prosthetics and orthotics.			
GENERAL OBJECTIVES: On completion of this course diplomate should be able to:			
1.0 Know the ethics and philosophy of Prosthetics and Orthotics practice. 2.0 Understand the professional responsibilities and limitations of a prosthetics and orthotics technologist. 3.0 Know the legal aspects of prosthetics and orthotics practice. 4.0 Understand the concept of accountability in prosthetics and orthotics.			

CODE: POT 325	**TITLE: Ethics and Philosophy of Prosthetics and Orthotics**			**HOURS: 60hrs**
General Objective: 1.0 Know the ethics and philosophy of prosthetics and orthotics practice.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Define Ethics. 1.2 Explain the ethical principles and philosophy of prosthetics and orthotics. 1.5 List the professional ethics required of prosthetics and orthotics technologist e.g. confidentiality, privacy, integrity, respect for client, patience. 1.6 Explain importance of prosthetics and orthotics in health care provision. 1.7 Describe prosthetics and orthotics as a rehabilitation tool.			

CODE: POT 325	**TITLE: Ethics in Prosthetics and Orthotic Practice**			**HOURS: 60hrs**
General Objective: 2.0 Understand the professional responsibilities and limitations of a prosthetics and orthotics technologist.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
2	<u>Professional Responsibilities of Prosthetics and Orthotics Technologist</u> 2.1 List the professional responsibilities of a prosthetics and orthotics technologist in the rehabilitation team. 2.2 Explain the professional responsibilities a prosthetics and orthotics technologist listed in 2.1 above. 2.3 Explain the relationship between the technologist and the physician in the			

	medical rehabilitation			

CODE: POT 325	**TITLE: Ethics in Prosthetics and Orthotic Practice**			**HOURS: 60hrs**
General Objective: 3.0 Know the legal aspects of prosthetics and orthotics practice.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	<u>Legal Aspects of Prosthetics and Orthotics Practice</u> 3.1 Identify the legal aspects of prosthetics and orthotics practice. e.g. Injury Limitations; Injury Claims Insurance claim Disability assessment Malpractice claims 3.2 Explain the responsibilities and function of ISPO,NAPO and Medical Rehabilitation Council as a regulatory body.			

CODE: POT 325	**TITLE: Ethics in Prosthetic and Orthotic Practice**			**HOURS: 60hrs**
General Objective: 4.0 Understand the concept of accountability in prosthetics and orthotics practice.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
4	<u>Accountability in Prosthetics and Orthotics Practice</u> 4.1 Explain the concept of accountability in prosthetics and orthotics practice. 4.2 List areas of responsibility in decision making. 4.3 Explain decision making in relation to accountability as limited in 2 above.			

Programme: HIGHER NATIONAL DIPLOMA IN PROSTHETICS AND ORTHOTICS TECHNOLOGY.				
Course: DETECTION OF DISABILITIES				
Code: POT 326	TITLE:			
Duration: 15 HRS	THEORY: 15HRS	TUTORIALS	PRACTICALS	
Units :				
Course Goal: The course is designed to enable the students acquaint themselves with aids and appliances required for community based rehabilitation services				
General Objectives : On completion of this course the diplomate should be able to:				
1.0. Know the basic aids required for Disabled people in the community. 2.0 Know how to source for the aids and appliances for disabled. 3.0 Know how to use the aids and appliances to assist the disabled to live an independent life.				

Code: POT 326		**Title:**	**Hours:**	
General Objective: 3.0. Know the muscles of the lower limbs and their movements.				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	1.1 State the common basis aids required for disabled a). walking sticks b) frames c). crutches d). roller e). Truck roller e.t.c. f). Bamboo splint g). Tyres sandals 1.2 Explain the sources of the aids mentioned in 1.1 above. 1.3 Explain the use of the aids in 1.1 above to patients.	Describe the common basic aids required for the disabled. Describe the source of the aids mentioned in 1.1 above Describe the use of the aids mentioned in 1.1 above		Walking sticks, crutches, rollers Bamboo splint, car tyres sandals

Code: POT 326		**Title:**	**Hours:**	
General Objective:2.0 Know how to source for the aids and appliances for the disabled .				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	2.1 Obtain materials to produce aids like functional walking sticks, crutches, bamboo splints 2.2 Produce the aids in 2.1 above. 2.3 Explain how to use the aids mentioned above effectively.	Supervise the students to obtain materials to produce aids like walking stick, e.t.c. Supervise students to produce the aids in 2.1 above Describe how to use the aids mentioned in 2.1 above	Obtain materials to produce aids like walking stick, crutches, and bamboo splints. e.t.c. Produce the aids in 2.1 above.	

Code: POT 326		**Title:**	**Hours:**	
General Objective: 3.0 Know how to use aids and appliances to assist the disabled to live an independent life..				
Week	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	3.1 Educate the field workers on the effective and functional utilization of the aids in the community by the disabled 3.2 Train family members within the community on the social responsibilities to the disabled. 3.3 Train the medical staff in the community on the care of the disabled.	Supervise students to educate the field workers on the effective and functional utilization of the aids. Supervise students to train family members within the community on their social responsibilities to the disabled. Supervise students to train other medical staff in the community.	Educate the field workers on the effective and functional utilization of aids. Train family members within the community on their social responsibilities to the disabled. Train other medical staff in the community on the care of the disabled.	

PROGRAMME: HND – PROSTHETICS AND ORTHOTICS			
COURSE: UPPER LIMB PROSTHETICS			
CODE: POT 411	**TITLE:**		
DURATION: 75 hrs	**THEORY: 30HRS**	**TUTORIALS**	**PRACTICALS: 45 HOURS**
UNITS: 1.0			
COURSE GOAL: This course is designed to enable the student understand and be able to carry out the procedures required for fabrication and fitting of upper limb prostheses.			
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:			

1.0 Know the common terms used in upper limb prosthetics.

2.0 Know how to assess upper limb amputee.

3.0 Know how to measure and cast an upper limb amputee.

4.0 Know how to modify a positive cast of an upper limb amputee.

5.0 Know how to fabricate upper limb prosthesis.

6.0 Know how to align and fit upper limb prosthesis on amputee.

CODE: POT 411	**TITLE: UPPER LIMB PROSTHETICS**	**HOURS: 75hrs**
General Objective: 1.0 Know the common terms used in upper limb prosthetics.		

WEEK	Specific Objectives	Teacher Activity	Practical	Resources
1	1.1 Explain the terms used in upper limb prosthetics. e.g. Prosthetist, Prosthesis, Prosthetics, Sagittal, frontal, coronal planes. Alignment, body movements. 1.2 Identify when the terms listed in 1.1 above are to be used.	Explain the terms listed in 1.1 to the students. Demonstrate the terms with available materials. E.g. human skeleton and human models.	Students to draw some parts of human upper limb skeleton in different planes – sagittal, frontal and coronial planes. Demonstrate adduction, abduction, flexion extention and circumduction movements.	Drawing materials Human charts Human skeleton and model.
CODE: POT 411 TITLE: UPPER LIMB PROSTHETICS HOURS: 75hrs				
General Objective: 2.0 Know how to assess upper limb amputee.				

WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	2.1 Take history of the amputee e.g. Age, Sex cause of amputation, family and social background. 2.2 Assess muscle power e.g. Atrophy, of the amputee loss of sensation and neurological deficits. 2.3 Record amputees e.g. dossiers, physical fitness. 2.4 Assess the stump conditions of the amputee e.g. painful and tender spots, contracture shape and colour. 2.5 Counsel the amputee on the appropriate prosthesis required for his use.	Take the students through the patient observations examination and assessment. Record findings. Educate the patient on home programme.	Students to inspect, observe, examine the patient and record findings. Teach home programme. E.g. stump bandaging and care.	Writing materials Patients case note, Couch, measuring tape, goniometer.

CODE: POT 411 TITLE: UPPER LIMB PROSTHETICS HOURS: 75hrs
General Objective: 3.0 Know how to measure and cast an upper limb amputee.

WEEK	Specific Objectives	Teacher Activity	Practical	Resources
	3.1 Identify the various tools and materials required for measuring and casting of an upper limb amputee e.g. tape measure, P.O.P bandage, water, bowl scissors, paper (for record taking). 3.2 Explain the functions of the tools and materials listed in 3.1 above. 3.3 Measure and cast an upper limb amputee following these steps: (i) Take measurement of the stump and record; (ii) Cover the stump with stockinette soaked in water; (iii) Wrap the stump with wet P.O.P bandage; (iv) Allow P.O.P to set, then remove from stump; (v) Clear the stump	Show the students the tools and materials used in measuring and casting of an upper limb amputee. Explain their functions. Take the students through the steps listed in 3.3	Students to measure and cast an upper limb amputee. Under supervision Record measurements.	**Tape rule,** Measurement, Scissors upper Limb amputee, Plaster of paris, Bandage, water, Bowl, stockinet.

CODE: POT 411	**TITLE: Upper Limb Prosthetics**	HOURS: 75		
General Objective: 4.0 Know how to modify a positive cast of an upper limb amputee.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
4	4.1 Identify the materials used in producing a positive cast. 4.2 Produce a positive cast from the negative cast already produced from the patients stump in 3.3. 4.3 Identify the tools used in modifying a positive cast. 4.4 Explain at which point of the modification the tool in 4.3 above surform files, tape rule plaster of Paris powder. 4.4 Modify the positive cast according to the measurements already taken in 3.3 above 4.5 . <u>Upper Limbs</u> Shoulder disarticulation Trans humeral Elbow Disarticulation Trans radial Wrist disarticulation Carpometarcapal amputation	Show the students the tools used in modifying a positive cast. Explain their functions modify a positive cast of an upper limb amputee.	Students are to produce positive cast from the cast taken in 3.3 by filling the negative cast with plaster of Paris (P.O.P.) powder and allowing it to set. Then modify the positive cast under supervision.	Surform files – round half round and flat. Plaster of Paris powder, bowl of water, spatula and wire gauze

General Objective: 5.0 Know how to fabricate upper limb prosthesis.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	
5	5.1 Fabricate a prosthetic socket from the positive cast produced in 4.5 above using resins, stockinettes and fibre glass. 5.2 Assemble foot prosthetic foot, wooden ankle and socket statically. 5.3 Glue the parts according to the measurements of the patients limb. 5.4 Walk the patient on the assembled prosthesis. 5.5 Make corrections for good gait. 5.6 Shape the prosthesis using router machine or rasp. 5.7 Furnish the prosthesis by lamination with resins re-agent and stockinette.	Take the students through the procedures of prosthetic fabrication listed in 5.1 – 5.5	Students to fabricate upper limb prostheses under supervision.	Resin and reagents Stockinette PVA sleeves soft liners Adhesive Positive cast.

E: POT 411	TITLE: Upper Limb Prosthetics.	HOURS: 75 HRS		
ral Objective: 6.0 Know how to align and fit upper limb prosthesis on amputee.				
K	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
	6.1 Describe bench, static and dynamic alignments of an upper limb prosthesis. 6.2 Carry out bench and static alignment. 6.3 Fit the patient with the statically aligned Prosthesis from 6.2 above. 6.4 Carry out dynamic alignment. 6.5 Correct any mal – alignments on the prosthesis by making adjustments in the medio-lateral and antero – posterior planes.	Align an upper limb prosthesis at bench, static and dynamic levels, for the students to see Mal align the prosthesis deliberately for the students to know what mal alignment is i.e distort the limb configuration.	Students to align a limb prosthesis at bench, static and dynamic levels, under supervision.	Bench alignment jig, walk bench plum line water or spirit level Allen keys

PROGRAMME: HND – PROSTHETICS AND ORTHOTICS			
COURSE: Electrotechnology			
CODE: POT 412		**TITLE:**	
DURATION: 20hrs	**THEORY: 15 hrs**	**TUTORIALS**	**PRACTICALS: 5 hrs**
UNITS: 1.0			
COURSE GOAL: This course is designed to provide the student with a knowledge of current electronic measurement practice n prosthetics and orthotics.			
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:			
1.0 Know the basic concepts of current, charge, potential, resistance, electromotive force and circuit. 2.0 Understand resistors in series, parallel and their measurements'. 3.0 Understand the sine wave. 4.0 Understand the principle of transformers, power supplies and amplifiers. 5.0 Understand the operation of myoelectrodes.			

CODE: POT 412	**TITLE: Electrotechnology**			**HOURS: 15hrs**
General Objective: 1.0 Know the basic concepts of current, charge, potential, resistance, electromotive force and circuit.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.3 Explain the following terminologies:- current, charge, potential difference, resistance, electromotive force and circuit. 1.4 Explain above the application of current, charge, resistances, in prosthetics and orthotics	Explain charge, current, potential, resistance, electromotive force and circuit to the students. Let the students know the differences in the terms stated in 1.1	Students to carry out practicals aimed at understanding 1.3 & 1.4	Contact Electrical Engineering Dept pf a higher institution
General Objective: 2.0 Understand resistor's in series, parallel and their measurements.				
2	2.1 Describe resistors in series. 2.2 Describe resistors in parallel. 2.3 Describe resistors in series and parallel. 2.4 Measure resistors in series only, resistors in parallel only and resistors in series and parallel.	Explain resistors in series, resistors in parallel and resistors in series and parallel to students. Show how to measure resistors in series, resistors in parallel, resistors in series and parallel.	Students to carry out practicals aimed at understanding 2.1 to 2.4	Contact Electrical Engineering Dept of a higher institution.

CODE: POT 412	**TITLE:**		**HOURS: 15hrs**	
General Objective: 3.0 Understand the sine wave.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 Explain what sine wave is. 3.2 Describe types of sine waves i.e. sine and sinusoidal waves.	Explain sine wave and sinusoidal waves to students.	Demonstration at an Electrical	
General Objective: 4.0 Understand the principle of transformers, power supplies and amplifiers.				
4	4.1 Explain what transformers are. 4.2 Explain power supplies are. 4.3 Explain amplifiers.	Explain what transformers, power supplies and amplifiers are to students.	Engineering Department Demonstration	
General Objective: 5.0 Understand the operation of myoelectrodes.				
5	5.1 Describe the effects of electrical signals on muscles. 5.2 Identify electrodes are. 5.3 Explain the application of electrodes in myoelectric prostheses and functional electrical stimulation (FES) orthoses.	Explain the effects of electrical signals on muscles. Explain what electrodes are. Explain the application of electrodes n prosthetics and orthotics.	Demonstration	

PROGRAMME: HND – PROSTHETICS AND ORTHOTIC TECHNOLOGY		
COURSE: Semester HND II (Semester I)		
CODE: POT 413	**TITLE: Clinical Practice III**	
DURATION: 45hrs THEORY: 15	**TUTORIALS**	**PRACTICALS: 30 hrs**
UNITS: 2.0		
COURSE GOAL: The course is designed to enable students understand the basis for the application of appliances.		
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:		
1.0 Know the principles of gait. 2.0 Know and interpret results of investigations. 3.0 Know the application of relevant appliances used in correction of gait problems.		

CODE: POT 413	**TITLE: Clinical Practice III**		**HOURS: 45hrs**	
General Objective: 1.0 Know the principles of gait.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Define normal gait. 1.2 Identify phases of gait cycle 1.3 Identify types of gait cycle 1.4 Identify gait deviations	-Teacher explains definition. -Identifies the phases and lists them. -Assigns students to patients with gait problem. -Conduct visits to physiotherapy dept; prosthetic and orthotic laboratory.	Student identifies types of gait and record gait deviations in persons with sound legs, with prosthetic limb unilateral and bilateral	-Patients with -Gait problems -Records of patient -Slides. - Normal persons

CODE: POT 413	**TITLE: Clinical Practice III**		**HOURS: 45hrs**	
General Objective: 2.0 Know and interpret results of investigations.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	2.1 Interpret radiological investigation like X– rays of - Musculo-skeletal - Upper and lower limbs - Joints - Antero posterior - Trunk 2.2 Interpret basic X-ray lines and planes. 2.3 Interpret other investigational reports: - Tomograms - Ultra sound/scan. 2.4 Interpret some haematological investigations e.g. - Full blood count - Tabine, blood sugar.	Teacher, explains Interprets, radiological investigations. Gives – Assignments to students. Gives assignments to students Teacher explains hematological reports	Students Interpret Investigation reports and writes results	-Investigation reports of x-rays scan/ultra sound. Blood -Patients with gait problems -Skeleton -Past patient reports and files.

CODE: POT 413	**TITLE: Clinical Practice III**			**HOURS: 45hrs**
General Objective: 3.0 Know the application of relevant appliances used in correction of gait problems				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 List orthoses relevant for correction of gait problems 3.2 Identity orthoses relevant for correction of gait problems. 3.3 Correct gait problems using orthoses in 3.1.	Teacher, identifies relevant appliances needed for gait correction Demonstrates the use of each appliances.	Student applies appliances on patients and reports.	-Shoe raises -Calipers -Orthoses -Shoe adaptations -Patients with gait problems -Slides.

PROGRAMME: HND – PROSTHETICS AND ORTHOTICS			
COURSE: General Prosthetics Practice			
CODE: POT 421		**TITLE:**	
DURATION: 90hrs	**THEORY:**	**TUTORIALS**	**PRACTICALS: 90hrs**
UNITS: 4.0			
COURSE GOAL: On completion of this course, the diplomate should be able to measure, cast, fabricate and fit both lower limb and upper limb prostheses and participate in check out procedures under minimal supervision.			
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:			
1.0 Know how to measure and cast the following amputees:- Trans tibial, trans femoral, trans radial and trans humeral. 2.0 Understand the fabrication of prosthetic sockets. 3.0 Know how to align, fit and finish a prosthesis. 4.0 Know, check out procedures.			

CODE: POT 421	**TITLE: General Prosthetics Practice**		**HOURS: 90hrs**	
General Objective: 1.0 Know how to measure and cast the following amputees:- trans tibial, trans femoral, trans radial and trans humeral.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Measure and cast a trans tibial amputee using Plaster of Paris and measuring tape. 1.2 Measure and cast trans femoral, trans radial and trans humeral amputees.	To be on hand to provide minimal supervision.	Stump measurement and casting.	Plaster and Paris bandage, Indelible pencil, Stockinette, Bowl of water, Amputee Measuring tape
General Objective: 2.0 Understand the fabrication of prosthetic sockets.				
2	2.1 Prepare a positive mould using plaster and paris (P.O.P.) powder. 2.2 Modify the mould in 2.1 above to measurements. 2.3 Cover the mould in 2.1 above with laminates i.e. P.V.A sleeve, stockinette, fibre glass, resin and reagents. 2.4 Allow the socket from 2.3 above to cure. 2.5 Cut out and trim the socket.	To be on hand to provide minimal supervision.	Fabricate a socket.	Plaster of Paris powder positive mould surforms blades/files PVA sleeves Stockinette Fibre glass Resin and reagents Cast cutter.

CODE: POT 421	**TITLE: General Prosthetics Practice**		**HOURS: 90hrs**	
General Objective: 3.0 Know how to align, fit and finish a prosthesis.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 Assemble the component parts of prostheses i.e. socket, ankle block and foot. 3.2 Bench align component parts in 3.1 above and bond. 3.3 Fit the patient statically i.e. without moving. 3.4 Carry out dynamic alignment on the prostheses. 3.5 Observe patient's gait and make corrections where necessary after fitting with prostheses. 3.6 Finish the prosthesis by shaping and lamination.	To be on hand to provide minimal supervision	Assemble, prosthetics components, align them, fit and finish the prosthesis.	
General Objective: 4.0 Know, check out procedures:				
4	4.1 Check that the patient's prosthesis is as prescribed. 4.2 Make the patient ambulate with the prosthesis. 4.3 Educate the patient on prosthetic care – cleaning, routine appointment and limitations.	Provide minimal, supervision to check that the prosthesis is as prescribed and that the patient ambulates optimally. Supervise students to educate patients on prosthetic care.	Check that the prosthesis is as prescribed. Make the patient ambulate. Educate the patient on prosthetic care.	Finished prosthesis Patient Walking area.

PROGRAMME: HND – PROSTHETICS AND ORTHOTICS			
COURSE: General Orthotics Practice			
CODE: POT 422		**TITLE:**	
DURATION: 90hrs	**THEORY:**	**TUTORIALS**	**PRACTICALS: 90hrs**
UNITS: 4.0			
COURSE GOAL: On completion of this course, the diplomate should be able to assess measure, cast modify fabricate and fit lower, upper and spinal orthoses and participate in check out procedures under minimal supervision.			
GENERAL OBJECTIVES: On completion of this course the diplomate should be able to:			
1.0 Know how to measure and cast lower, upper and spinal, patients for orthoses 2.0 Understand the fabrication of different orthoses. 3.0 Know how to align and fit orthoses on patients. 4.0 Know check out procedures.			

CODE: POT 422	**TITLE: General Orthotic Practice**		**HOURS: 90hrs**	
General Objective: 1.0 Know how to measure and cast lower, upper and spinal orthoses.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
1	1.1 Asses, measure and cast a patient with lower foot deformities. 1.2 Asses, measure and cast a patient for paraplegic, polio aid.	To be on hand to provide minimal supervision.	Measurement and casting	Plaster of Paris bandage Indelible pencil, Stockinette, Bowl a water Measuring instruments and patient.
General Objective: 2.0 Understand the fabrication of different orthoses.				
2	2.1 Prepare a positive mould using plaster of Paris powder. 2.2 Modify the mould in 2.1 above to measurement. 2.3 Measure and cut out thermoplastic sheets for quad and PLS 2.4 Put sheets in oven at appropriate temperature 2.5 Apply sheets on positive mould 2.6 Allow to cool then trim	To be on hand to provide minimal supervision	Carry out static alignment	Plaster of Paris powder positive mould Surforms, Cast cutter. Thermoplastic sheets Oven

CODE: POT 422	**TITLE: General Orthotics Practice**			**HOURS: 90hrs**
General Objective: 3.0 Know how to align and fit orthoses on patients.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
3	3.1 Assemble the component parts of orthoses i.e. the plastic mould, laminate side bars, knee pads and straps. 3.2 Bench align the component parts. 3.3 Check alignment of orthoses of joints. 3.4 Carry out static fitting of the patient. 3.5 Carry out dynamic alignment and fitting on the patient. 3.6 Observe patients gait and make corrections where necessary. 3.7 Finish the orthoses by riveting.	To be on hand to provide minimal supervision	Assemble orthotic components align, fit and finish the orthotic device.	Plastic mould Joints and side bars, straps. Router machine, Rasp file, resin Band saw machine Drilling machine .

CODE: POT 422	**TITLE: General Orthotic Practice**			**HOURS: 90hrs**
General Objective: 4.0 Know check out procedures.				
WEEK	**Specific Objectives**	**Teacher Activity**	**Practical**	**Resources**
4	4.1 Check that orthotic device is as prescribed**.** 4.2 Make the patient ambulate to achieve optimal gait with the orthosis. 4.3 Counsel the patient on the care of the orthotic device – cleaning routine appointment and limitation	Provide minimal supervision to check that the orthosis is as prescribed. Educate the patient on care of the orthotic device and ensure that the patient ambulates on an optimally.	Check the orthosisa is as prescribed. Make the patient ambulate optimally. Educate the patients on care of the orthosis.	Finished orthosis Patient Walking area

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