

अखिल भारतीय भौतिक चिकित्सा एवं पुनर्वासि संस्थान

Annexure Part III (3)

ALL INDIA INSTITUTE OF PHYSICAL MEDICINE AND REHABILITATION
TIME TABLE FOR I - B.P.O (A/Y-2021-22) - REVISED 2017

DAY TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9.00 A.M. TO 10.00 A.M.	Orthotics - I Mr. H.S.Dongare	Biomechanics-I Mr. Lukesh Bhuyar	Physiology Dr. Yuvraj D. Kumar	Prosthetics - I Mrs.V.K.Pai	Basic Electronics Mr. Mangesh Mhatre	Anatomy External Faculty
10.00 A.M. TO 11.00 A.M.	Prosthetics - I Mr. A. G. Indalkar	Orthotics - I Practical Mr. Devidas Thakre	Biomechanics - I Mr. D.P.Prabhu/ Mr. L.R.Bhuyar	Workshop Technology and Material Science Mr. M.N.Saraf	Orthotics - I Mrs. U.M. Naukudkar	Anatomy External faculty
11.00 A.M. TO 12.00 P.M.	Basic Electronics Mr. Mangesh Mhatre		Applied Mechanics & Strength of Materials Mr. M. K. Tiwari	Anatomy (External Faculty)	Workshop Technology and Material Science Mr. H.S.Dongare	Physiology practical Dr. Timple Sugandh Mr. Mangesh Mhatre
12.00 P.M. TO 01.00 P.M.	Applied Mechanics & SOM (External faculty)		Workshop Technology and Material Science Mr. H.S.Dongare	Basic Electronics Mr. Mangesh Mhatre	Applied Mechanics & Strength of Materials (External Faculty)	Material and Workshop Technology (Practical) Mr. D.R.Thakare
01.00 P.M. TO 01.30 P.M.	L U N C H B R E A K					
01.30 P.M. TO 02.15 P.M.	Biomechanics - I Mr.A.G.Indalkar/ Mrs.U.M. Naukudkar	Applied Mechanics & SOM Mr. M.K.Tiwari	Physiology Dr. Din Dayal	Prosthetics - I (Practicals) Mr. M.N.Saraf	Orthotics - I Demonstration Mr. M.K.Tiwari	-----
02.15 P.M. TO 03.00 P.M.	Orthotics - I Practical Mr. D.R.Thakare	Prosthetics - I Practical	Prosthetics - I Demonstration Mrs.V.K.Pai	Prosthetics - I Demonstration Mr. Lukesh Bhuyar		-----
03.00 P.M. TO 04.00 P.M.		Mrs. V.K.Pai	Anatomy Dr.Timple			Physiology (External Faculty)

Course Coordinator: - Mr. H.S.Dongare


Academic Incharge

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ALL INDIA INSTITUTE OF PHYSICAL MEDICINE AND REHABILITATION
TIME TABLE FOR II - B.P.O (A/Y-2021-22)

DAY TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9.00 A.M. TO 10.00 A.M.	Pathology Dr. Nima Wangdi Dr. Vinay Goyal	Orthotics - II Mr. D. P. Prabhu	C R & Disability Prevention (Medical) Dr. Amit Mhambre Dr. Vinay Goyal	Orthotics - II Mrs. U. M. Naukudkar	Prosthetics-II Mr. L.R. Bhuyar	Biomechanics - II Mrs. U. M. Naukudkar
10.00 A.M. TO 11.00 A.M.	Orthotics - II Demonstrations Mr. D.R.Thakare	Prosthetics-II Mr. A.G.Indalkar	Prosthetics - II Practical Mr. Lukesh Bhuyar	Biomechanics - II Mr. A. G. Indalkar/ Mr. D.P.Prabhu	Pharmacology Dr. Nima Wangdi/ Dr. Din Dayal	Pharmacology (External Faculty)
11.00 A.M. TO 12.00 P.M.	Orthotics - II Mr. D.R.Thakare			Prosthetics- II Mr. L.R.Bhuyar	Orthotics - II Practicals Mr. M.K. Tiwari	Orthotics - II Practicals Mr. D.R. Thakre Mr. Mohit Gupta
12.00 P.M. TO 01.00 P.M.	Prosthetics-II Mr. M.N.Saraf	C R & Disability Prevention (OT)	Prosthetics-II Mr. M.N.Saraf	C R & Disability Prevention (PT)		
01.00 P.M. TO 01.30 P.M.	L U N C H - B R E A K					
01.30 P. M. TO 02.15.P.M.	Prosthetics - II Practicals Mr. M. N. Saraf/ Mr. L.R.Bhuyar	Biomechanics - II Mr. M.K.Tiwari	Pathology (External Faculty)	Psychology & Sociology Mrs. Anjana Neglur	Orthotics- II Practicals Mrs.U.M. Naukudkar	-----
02.15 TO 03.00P.M.		Psychology & Sociology (External Faculty)	Orthopaedics , Amputation Surgery & Imaging Science Dr.Mahesh Choudhary / Dr.Vivek Pusnake Dr. Sumedh More	Orthopaedics , Amputation Surgery & Imaging Science Dr.Mahesh Choudhary / Dr.Vivek Pusnake Dr. Sumedh More		-----
03.00 P.M. TO 04.00 P.M.						-----

Course Coordinator: - Mrs. U.M.Naukudkar

Academic Incharge

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ALL INDIA INSTITUTE OF PHYSICAL MEDICINE AND REHABILITATION
TIME TABLE FOR III- B.P.O A/Y- (2021-22)

DAY / TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9.00 A.M. TO 10.00 A.M.	Computer Science & Graphical Communication Mr. M.K.Tiwari	Research Methodology & Biostatistics Dr. Nima Wangdi	Assistive Technology Mr. M.K.Tiwari Mr. D.P.Prabhu	Research Methodology & Biostatistics (External Faculty)	Research Methodology & Biostatistics Mr. M.K. Tiwari Mrs. U.M. Naukudkar	Orthotics -III, Science (Demonstration-OT) Mrs. Anita Gupta/ Mr.Shekhar Shinde
10.00 A.M. TO 11.00 A.M.	Prosthetics Science -III Demonstrations Mr. D.P.Prabhu	Orthotics Science III (Practicals) Mr. Lukesh Bhuyar Mr. H.S.Dongare	Orthotics Science -III Demonstrations Mr. U.M. Naukudkar	Assistive Technology O.T. Dept.	Orthotics Science - III (Practicals) Mr. Lukesh Bhuyar - Mr. D.P.Prabhu	Biomechanics- III Mr. A.G.Indalkar Mr. D.P.Prabhu
11.00 A.M. TO 12.00 P.M.			Biomechanics- III Mr. M.K.Tiwari Mrs. U.M.Naukudkar	Computer Science & Graphical Communication Mr. M.N.Saraf		
12.00A.M. TO 1.00 P.M.			L U N C H - B R E A K			
01.00 P.M. TO 01.30 P.M.	L U N C H - B R E A K					
01.30 P.M. TO 02.15 P.M.	Prosthetics Science -III Mrs. Vaishali Pai	Prosthetics Science-III (Practicals) Mr. Lukesh Bhuyar	Computer Science & Graphical Communication Mr. M.N.Saraf Mr. M.K.Tiwari	Prosthetics Science-III Practicals Mr. H.S.Dongare	Prosthetics Science- III Practicals Mrs. Vaishali Pai	-----
02.15P.M. TO 03.00P.M.	Assistive Technology Mr. M.K.Tiwari VTW					
03.00 P.M. TO 04.00 P.M.	Orthotics Science - III Demonstrations Mrs. U.M.Naukudkar					

Course Coordinator: - Mr. M.K. Tiwari

Academic Incharge

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ALL INDIA INSTITUTE OF PHYSICAL MEDICINE AND REHABILITATION
TIME TABLE FOR IV - B.P.O - (2017- 2018)

DAY TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 A.M. TO 10.00 A.M.			Orthotics IV Practicals	Orthotics -IV Mr. A.G.Indalkar	Prosthetics-IV Mr.D.P.Prabhu	Orthotics -IV Mrs.U.M. Naukudkar
10.00 A.M. TO 11.00 A.M.	Project Work All P & O staff	P & O Clinical Practice Mrs. V.K.Pai	Mrs.U.M. Naukudkar/ Mr. M .K. Tiwari Mr. D.R. Thakre	Prosthetics IV Practicals Mrs. V.K.Pai	P & O Clinical Practice Mr. M.K.Tiwari	Project Work (All P & O staff)
11.00 A.M. TO 12.00 P.M.						
12.00 P.M. TO 01.00 P.M.	Prosthetic-IV Mr. A.G.Indalkar	Management & Administration Mr. M.K.Tiwari				
01.00 P.M. TO 01.30 P.M.	L U N C H - B R E A K					
01.30 P.M. TO 02.15 P.M.	P & O Clinical Practice Mrs. V.K.Pai	Prosthetics and Orthotics Clinic Mr. A.G.Indalkar/ Mrs.U.M. Naukudkar	Case Conference	Diabetes/ CP Clinic	Prosthetics and Orthotics Clinic Mr.D.P.Prabhu/ Mr. M.N. Saraf	
02.15 P.M. TO 03.00 P.M.			Prosthetics-IV Mr. M.N.Saraf	P & O Clinical Practice Mr. M.K.Tiwari		
03.00 P.M. TO 04.00 P.M.	Management & Administration Mr. A.G.Indalkar					

Course Coordinator: - Mr. M.N. Saraf


Academic Incharge

ANNEXURE -PART III (4 & 5)

Scientific Papers Presented by Core Faculty (BPO)

Sr. No	Title	Conference/CRE	Presenter	Author
01	Need Based Product Design	CRE on "Need Based Design" At MGM Institute of Health Sciences, Navi Mumbai on 6 th January 2020	Mrs. U.M.Naukudkar	Mrs. U.M.Naukudkar
02	Challenges in the Orth-Prosthetic Management of Congenital Pseudo-Arthrosis of Tibia	25th Annual National Conference of the Orthotics & Prosthetics Association of India at Bhubaneswar from 7 th -9 th February 2020	Mr. A.G.Indalkar	Mr. A.G.Indalkar
03	To Study the Efficacy of Custom Moulded Insoles in Reducing Peak Plantar Pressure and Improving Gait Parameters in Diabetic Patients	25th Annual National Conference of the Orthotics & Prosthetics Association of India at Bhubaneswar from 7 th -9 th February 2020	Mrs. U.M.Naukudkar	Mrs. U.M.Naukudkar
04	Development of an Externally powered prosthetics Elbow Unit for Humeral Amputees	25th Annual National Conference of the Orthotics & Prosthetics Association of India at Bhubaneswar from 7 th -9 th February 2020	Mrs. Deepshikha Raut	Mrs. Deepshikha Raut Mr. D.P.Prabhu
05	Advances in Orthotics & Assistive Technology in Neuro Rehabilitation	Fourth Asia Oceanian Congress of Neuro Rehabilitation 2021	Mr. Lukesh Bhuyar	Mr. Lukesh Bhuyar Mr. A. G. Indalkar
06	Keynote address on "Advances in Orthotic Management of Adolescent Idiopathic Scoliosis (AIS)"	Webinar on Advances in Adolescent Idiopathic Scoliosis organized by Composite Rehabilitation Centre (CRC) Gorakhpur under National Institute of Empowerment of Persons with Multiple Disabilities (NIEPMD) on 29 th September 2021	Mr. A.G.Indalkar	Mr. A.G.Indalkar

07	Modified Non-Invasive Pin-Less Halo Device	XXXVI National Conference Of The Orthotics And Prosthetics Association Of India from 28 th to 30 th March 2022 at Panjim Convention Centre, Goa	Ms. Durgeshwari Kadam	Mr. L.R. Bhuyar
08	Body Powered Prosthetic Finger for Partial Finger Amputees Using 3D Printing Technology	XXXVI National Conference Of The Orthotics And Prosthetics Association Of India from 28 th to 30 th March 2022 at Panjim Convention Centre, Goa	Mr. Neville Joshi	Mr. L.R. Bhuyar
09	"Ambulating the Different" A Prosthetic Approach Towards Non-Surgical Management of Congenital Anomalies	XXXVI National Conference Of The Orthotics And Prosthetics Association Of India from 28 th to 30 th March 2022 at Panjim Convention Centre, Goa	Ms. Garima Sharma	Mr. L.R. Bhuyar
10	Application of Natural Fibres as Composite Reinforcement Materials in Fabrication of Trans-Tibial Prosthetic Sockets	XXXVI National Conference Of The Orthotics And Prosthetics Association Of India from 28 th to 30 th March 2022 at Panjim Convention Centre, Goa	Mr. Bhagirath Jana	Mr. M.N.Saraf
11	Recent Trends in Advancement of Spinal Orthotics	Online CRE on Advancements in Spinal Orthotics organized by Pt. Deendayal Upadhyaya National Institute for Persons with Physical Disabilities, New Delhi on 25 th and 26 th April 2022	Mrs. Urmila Naukudkar	Mrs. Urmila Naukudkar



Lecturer (P&O)



Lecturer & HOD (P&O)



Director

Annexure PART III (4 & 5)

LIST OF CONFERENCES/SEMINARS/WORKSHOPS ATTENDED BY CORE FACULTY (BPO)

Sr. No	Conference/Seminar/Workshop	Names of Attendees	Location/Dates
1.	Ischial Containment Socket Technology for Trans-Femoral Prosthesis	Mrs. Urmila Naukudkar Mrs. Vaishali Pai	Composite Rehabilitation Centre (CRC) Gorakhpur under National Institute of Empowerment of Persons with Multiple Disabilities (NIEPMD) on 29 th September 2021
2.	Current Rehabilitation Methods for Cerebral Palsy	Mrs. Urmila Naukudkar	Online Course organised by National Institute of Persons with Multiple Disabilities (NIEPMD) in collaboration with International Committee of the Red Cross (ICRC) and Human Study, Germany Theory Sessions: 3 rd February to 11 th March 2020 and Practical Sessions: 1 st October 2021 to 6 th December 2021
P3.	Grippy : Affordable Semi-Bionic Hand that Feels like a Real Hand	Mr. Makarand Saraf Mrs. Urmila Naukudkar Mr. Devidas Thakre	Online Webinar conducted by Indian Association of Assistive Technologists on 27 th November 2021
4.	Early Detection of Skeletal Disorders in Children and their Treatment & Impact	Mr. Devidas Thakre	Online Webinar conducted by Composite Regional Centre for Skill Development, Rehabilitation and Empowerment of Persons

			with Disabilities (CRC)- Lucknow on 1 st December 2021
5.	Webinar on "Transformation of Indian Healthcare Digitally"	Mr. Lukesh Bhuyar	Online Webinar by Indian Institute of Technology, Kanpur on 19 th December 2021
6.	CRE on Early Intervention in Congenital Anomalies	Mrs. Urmila Naukudkar	Online Webinar organized by the National Institute of Locomotor Disabilities (Divyangjan), Kolkata on 10 th and 11 th February 2022
7.	CRE on Functional Orthoses in Fracture Management	Mrs. Urmila Naukudkar	Online Webinar organized by the National Institute of Locomotor Disabilities (Divyangjan), Kolkata on 3 rd and 4 th March 2022
8.	Online CRE on Lower Extremity Exoskeleton System	Mr. Makarand Saraf	Online CRE organized by Pt. Deendayal Upadhyaya National Institute for Persons with Physical Disabilities, New Delhi on 7 th and 8 th March 2022
9.	Online CRE on Advancements in Spinal Orthotics	Mrs. Urmila Naukudkar	Pt. Deendayal Upadhyaya National Institute for Persons with Physical Disabilities, New Delhi on 25 th and 26 th April 2022


Lecturer (P&O)


Lecturer & HOD (P&O)


Director

Projects Undertaken by the Department of Prosthetics & Orthotics

1.) Prosthetic Designs for Congenital Pseudo-Arthrosis of Tibia:

Congenital Pseudoarthrosis of the Tibia (CPT) is a rare pathological condition characterized by anterolateral bowing of the tibia that typically progresses to loss of continuity of the tibial diaphysis. It is challenging to treat effectively this difficult condition and its possible complications. In the Institute we are frequently presented with patients suffering from this debilitating condition.

Earlier these patients were fitted with AFO with modified footwear with adequate compensation for shortening of the lower limb. Sometimes this shortening may range from 4-6 inches or more than that. In this situation because of the added compensation the footwear becomes extremely heavy and does not offer support to the pseudoarthrosed segment of the leg. This results into uncontrolled progression of tibial bowing and the shortening goes on increasing with age and patient finds extremely difficult to use this footwear.

To deal with this problem the special type of prosthesis was designed which can control the anterior bowing of tibia by offering anterior support and partially relieving the weight from the malformed segment. The prosthetic design makes use of prosthetic foot attached to a specially customized socket by means of a custom made extension added between socket and foot. So far more than 5 cases have been fitted with this design of the prosthesis.

2). Development of a Low Cost Sports Prosthesis for Tibial Hemimelia

Tibial hemimelia is a spectrum of deformities characterized by a shortened or absent tibia and relatively unaffected fibula; duplication of the great toe may be the only clinical finding in subtle deformity. Tibial hemimelia is usually associated with lower extremity deformities and other organ system malformations, most commonly of the foot.

Patients suffering from tibial hemimelia are usually fitted with a prosthesis which consists of a socket – to accommodate the residual limb, a distal extension below the socket to make up for the shortened leg, prosthetic knee joints extending up to the thigh and attached to a thigh shell with or without ischial weight bearing.

This type of prosthesis does allow the patients to walk and perform all their activities of daily living up to a near normal level. But it does not allow the persons affected by this disease to participate in any type of sports and athletic activities as it is very bulky in nature and it is very energy consuming for the patient to participate in such activities with these prostheses.

Hence an attempt was made to design a low cost sports prosthesis for a patient suffering from this disease. The prosthesis was made using a piece of especially designed spring steel attached to the base of the socket via an adapter. The patients was successfully able to participate in various sports activities like running and playing cricket.

3). Development of a Low Cost Sports Prosthesis for Rotationplasty:

When a patient has osteosarcoma in the shaft of the femur (thigh bone) in the lower limb, the femur below the head is completely removed and a tibia after rotating at 180° is connected to the femoral head. This surgery is called as the Van Nes rotation plasty.

After this surgery anatomical ankle joint is expected to function as prosthetic knee joint with a specially designed prosthesis so that the patient can lead active lifestyle as majority of them belong to late juvenile or adolescent age group.

Due to their high energy level these patients, who have undergone Rotationplasty are able to participate in sports activities like running, cycling, jumping etc. as their ankle joint is preserved and it functions as a "new knee joint" with the weight distributed evenly on the foot and the ischial tuberosity.

In the Western countries materials like Carbon Fibre and Epoxy Resin combination laminates are used to produce prostheses designed for sports activities. These prostheses are very costly and cannot be afforded by a vast majority of Indian patients. So the department of Prosthetics & Orthotics decided to develop a Low Cost Prosthesis for Sports for Rotationplasty at the Institute by using low cost materials like Spring Steel. This prosthesis was made using the machinery and equipments available at the Institute itself.

4). Study on the Efficacy of Custom Moulded Insoles in Reducing Peak Plantar Pressure and Improving the Gait Parameters in Diabetic Patients:

The number of diabetic persons in India is rapidly on the rise. This has led to many people having insensate feet and in many people this may lead to diabetic neuropathy which if not treated properly may lead to amputations. Insensate feet may lead to development of pressure ulcers due to improper distribution of pressure on their feet which needs to be redistributed and this can be achieved by providing them with appropriate modifications in their footwear.

The department has procured last year a Pedobarometer, Foot casting & Insole Molding Apparatus and Insole Heating Device. This setup is being regularly used for designing of insoles used in footwear for the patients suffering from diabetes and other diseases which may lead to insensate feet in patients. The quality of insoles made with the machine helps to evenly distribute the body weight on the foot than the conventionally made insoles.

A study was conducted by the department to check the efficacy of custom moulded insoles in reducing peak plantar pressure and improving the gait parameters in diabetic patients using custom moulded insoles. 30 patients were inducted as a part of the study and custom moulded insoles were fabricated for these patients using the above mentioned setup. It was found that these custom moulded insoles were efficient in reducing the peak plantar pressure in diabetic patients and improving their gait parameters.

5.) Casting Frame for Compression Release and Stabilized (CRS) Socket :

Standard sockets for trans-radial prosthesis only emphasize on containment and control of soft tissues of the remaining stump but they do not provide a control over the underlying bone (radius). In the Prosthetics & Orthotics department we have made an attempt to fabricate trans-radial sockets using the concept of Compression Release and Stabilized Socket which focuses on controlling the bone lying below the soft tissues of the stump. In a compression/release stabilized (CRS) socket, three or more longitudinal depressions compress and displace tissue between the socket wall and the bone to reduce lost motion when the bone is moved with respect to the socket. Release areas between depressions are opened to accommodate displaced tissue. The CRS socket provides better control of the stump within the socket, and had less slippage.

An attempt was made to design and fabricate a Casting frame for these CRS sockets at the Institute and was fairly successful.

6.) Comparative analysis between Thermoplastic Sockets and Carbon-Epoxy Composite Sockets for Lower Limb Endoskeletal Prostheses.

The major contribution towards successful fitment of prosthesis may be obtained by comprehensive understanding of the biomechanical structure of socket and its material, weight, thickness in particular to fulfill the desirable load distribution on soft tissues and bones of residual limb.

Conventionally the sockets for exoskeletal prostheses are made out of Polyester Resin and Fibre Glass composites using lamination process. When the similar type of sockets were used for endoskeletal prostheses, breakages were observed at the interface between socket and socket adapter. The strength of laminated sockets is influenced more by construction material and fabrication technology.

It has been reported that the basic factors which should be considered in developing countries when selecting socket materials are function, durability, stability, cost, availability, sustainability, climatic conditions, and ease of maintenance. In a survey of ten years (1994-2004) follow up and repair records of Trans Tibial Amputation fitted in one of the National Institutes in India, it was observed that 66% of total replacement/repair of prosthesis occurred due to socket breakage, material failure and deformation.

Lower limb socket fabrication technology has undergone a sea change with the introduction of endoskeletal prostheses. At present these sockets are made using Poly-Propylene Co-Polymer (PPCP) sheets of 15mm thickness by vacuum forming in this Institute. Whereas Carbon-Epoxy composites are also widely used in the field of Prosthetics & Orthotics for making strong and lightweight prosthetic sockets.

The ideal material for making prosthetic sockets should have the following properties:

- 1) Lightweight,
- 2) Strong under strain,
- 3) Strong under pressure,
- 4) Durable to resist fracture under impact,
- 5) Capable of resisting stress in all planes,
- 6) Cost effective and
- 7) Easy to apply.

Need for Study:

All over the world an attempt is being made to make thin walled, lightweight prosthetic sockets making use of Carbon fibre-Epoxy composites by lamination process to enhance the performance of amputees with prosthesis.

Studies have been conducted to find out the strength of various combinations of composite materials for use in fabrication of prosthetic sockets via the use of uniform specimens of different materials (13).

There also have been studies which have conducted Finite Element Analysis (FEA) using 3D models of prosthetic sockets made by scanning actual sockets using a 3D Laser Scanner and Computer Aided Designing (CAD) software (14). These 3D models have been analysed using various methods to understand their behaviour under different loading conditions.

However no studies have been conducted to find out the actual strength, durability, weight of the prosthesis, energy consumption, gait analysis and comfort with the prosthesis using Thermoplastic sockets made by vacuum forming and sockets made using Carbon Epoxy composites fabricated by lamination technique.

Hence it is proposed to perform the comparative analysis between Thermoplastic Sockets made of PPCP using vacuum forming technique and laminated sockets made out of Carbon-Epoxy composites with respect to the parameters of the study mentioned below for use with Endoskeletal prostheses and validate the selection of a proper material for prosthetic sockets.

Research Question: Is the socket made by using Carbon-Epoxy composites functionally superior in terms of strength, durability and is light in weight in comparison with thermoplastic sockets and made from Polypropylene Co-Polymer (PPCP) having thickness of 15mm?


Lecturer (P&O)


Lecturer & HOD (P&O)

Director

Annexure PART III (5)

List of Research Publications by the Faculty from Dept. Of Prosthetics & Orthotics (BPO)

Sr. No	Name of the Research Publication	Name of the Journal	Name of 1 st Author	Name of 2 nd Author	Name of 3 rd Author	Publication Year
1	Scoliosis Management by Milwaukee Brace: A Successful Orthotic Approach	Journal of Orthotic & Prosthetic Association of India	Ms. Sangeeta Nayak	Mr. Lukesh Bhuyar	Mr. A. G. Indalkar	2015
2	Review of Literature in P & O Field	Pre-Eminence : An International Peer Reviewed Research Journal, ISSN: 2249-7927, Vol.6, No.2/Jan-June 2016	Mr. Mohit Gupta	Mr. Girish Gupta		2016
3	Role of Assistive Technology at Developing Countries	Pre-Eminence : An International Peer Reviewed Research Journal, ISSN: 2249-7927, Vol.6, No.2/July-Dec 2016	Mr. Mohit Gupta	Mr. Shivam Gupta		2016
4	Performance Study of Quadrilateral Socket versus Anatomic Socket	Journal of Orthotic & Prosthetic Association of India	Mr. A.G. Indalkar	Mr. Jitendra Narayan		2019
5	Comparative Analysis between Rotationplasty Prosthesis made with Foot in Full Plantar Flexion and Foot in 10 degrees Short of Full Plantar Flexion	Journal of Orthotic & Prosthetic Association of India	Mr. A.G. Indalkar	Mr. L.R. Bhuyar		2019
6	Prosthetic Fimment Outcomes in Patient with Rotationplasty- A Case Series	International Journal of Healthcare and Biomedical Research	Mr. L. R. Bhuyar	Mr. A. G. Indalkar	Dr. Mahesh Choudhary	2020

7	Cost Effective Transradial Assistive Prosthetic Hand	International Journal of Science and Research	Mr. L. R. Bhuyar	Mr. A. G. Indalkar	Ms. V. C. Pawar	2020
8	Transibial Prosthesis with Provision for Squatting	Patent CBR No. 22028	Mr. A. G. Indalkar	Mrs. V. K. Pai	Mr. L. R. Bhuyar	2020
9	Anatomical Motion Prosthetic Knee Joint (AMPKJ)	Patent CBR No. 26522	Mr. L. R. Bhuyar	Mr. Ageel Maner	Mr. A. G. Indalkar	2020
10	Anatomical Motion Knee Joint-A New Design Concept of Prosthetic Knee Joint for Disarticulation (KD)	International Organization of Scientific Research (IOSR)	Mr. L. R. Bhuyar	Mr. A. G. Indalkar	Mr. Ageel Maner	2020
11	Dual Mode Powered Wheelchair for Locomotor Disabled	Patent CBR No. 1591	Dr. Mahesh Choudhary	Mr. L.R.Bhuyar	Mrs. Vishakha Meshram	2021
12	Orthotic Management of Patient with Arthrogryposis Multiple Congenita – A Case Study	International Journal of Science and Research	Mrs. Urmila Naukudkar	Mr. Devidas Thakre		2022
13	Effectiveness of Custom Moulded Insoles in Reducing Peak Plantar Pressure and Improving Gait Parameters in Patients with Diabetic Neuropathy	International Journal of Healthcare and Biomedical Research	Mrs. Urmila Naukudkar	Ms. Carina Castello		2022
14	Non-Invasive Pin-less Halo Orthosis : Neuropathy	International Journal of Novel Research and Development	Mr. A. G. Indalkar	Mr. L.R. Bhuyar	Ms. Durgeshwari Kadam	2022
15	Dynamic Progressive Orthosis for Elbow Flexion Contractures	International Journal of Novel Research and Development	Mr. L.R.Bhuyar	Mr. Rushikesh Lipare		2022

16	Comparative Analysis of Solid AFO vis-a-vis Articulated AFO using Flexible Ankle Hinges in Children with Cerebral Palsy Spastic Diplegia with Age Group 5-12 years in Terms of Gait Parameters	International Journal of Health Science and Research	Mr. H.S. Dongare	Mr. Kishan Singh	Mr. L.R. Bhuyar	2022
17	Ambulating the "Different": A Prosthetic Approach Towards Conservative Management of Congenital Anomalies	International Journal of Novel Research and Development	Mr. L.R. Bhuyar	Ms. Garima Sharma		2022
18	Prosthetic Design for Rotationplasty	Patent CBR No. 747	Mr. A.G. Indalkar	Mr. L.R. Bhuyar		2022
19	A Study of Self Esteem and Behavioural Changes Seen in Old vs New Amputees Using Lower Limb Prosthesis	International Journal of Novel Research and Development	Mr. L.R. Bhuyar	Ms. Garima Sharma	Ms. Janvi Pandya Mr. Hritik Pawar	2022
20	3-D Printed Body Powered Cosmo-Functional Partial Finger Prosthesis with DIP and PIP Flexion, Facilitated by the Flexion of MTP Joint with the help of Linkage	International Journal of Innovative Research and Technology	Mr. L.R. Bhuyar	Mr. Neville Joshi		2022
21	Studies on Physiological Changes and Difference in Quality of Life in Dogs Fitted with Artificial	International Journal of Novel Research and Development	Mr. J.G. Bapat Mr. G.U. Yadav	Mr. D.U. Lokhande	Mr. A.G. Indalkar Mr. L.R. Bhuyar	2022

	Limb Prostheses					
22	Studies on Designing and Development of Stump-Socket Prostheses in Dogs with Partially Amputated Limb	International Journal of Novel Research and Development	Mr. J.G.Bapat Mr. G.U.Yadav	Mr. D.U. Lokhande	Mr. A.G.Indalkar Mr. L.R.Bhuyar	2022
23	Comparison Between Weight Activated and Polycentric Knee Joints on the Gait Performance of Transfemoral Amputees	International Journal of Science and Research	Mr. Makarand N Saraf	Ms. Sangeeta Nayak	Mr. R. Ravindran	2022

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Annexure – Part III (5)

LIST OF ONGOING AND COMPLETED PROJECTS OF BPO STUDENTS

<u>Sr. No</u>	<u>Title of the Project Work</u>	<u>Name of the Student</u>	<u>Name of the Guide</u>	<u>Academic Year</u>
1	Pneumatically Modified TLSO System For Idiopathic Scoliosis	Mr. Ajith Kumar V	Mrs. Urmila Naukudkar	2021-2022
2	Orthotic Brace For Humeral Fracture	Mr. Anand Kumar Kishor	Mr. Lukesh Bhuyar	2021-2022
3	Static Progressive Orthosis	Ms. Aisha Ansari	Mr. Lukesh Bhuyar	2021-2022
4	Partial Hand Prosthesis	Ms. Apoorva Singh	Mr. Makarand Saraf	2021-2022
5	Syme's Prosthesis With Stove Pipe Design	Mr. Hammad Ansari	Mr. Makarand Saraf	2021-2022
6	Elbow Joint for Elbow Disarticulation Prosthesis	Ms. Bhoorniksha Rathore	Mr. Makarand Saraf	2021-2022
7	Hydraulic Control At Ankle Of Trans Tibial Prosthesis	Mr. Dipin Raj R.S	Mr. Devidas Thakre	2021-2022
8	Footwear For Diabetic Ulcers	Ms. Meera Gupta	Mr. Deepak Prabhu	2021-2022
9	Modified Leaf Spring AFO	Ms. Anjali Jamkar	Mr. Devidas Thakre	2021-2022
10	Post- Operative Hinged Elbow Brace	Ms. Sanika Karande	Mr. Lukesh Bhuyar	2021-2022
11	Articulating Prosthetic Foot	Mr. Katyayan Sharma	Mr. Devidas Thakre	2021-2022
12	Articulating AFO For Cerebral Palsy	Ms. Kasturi Kaware	Mrs. Urmila Naukudkar	2021-2022
13	Adjustable KAFO	Ms. Riyanka Sah	Mr. H.S Dongre	2021-2022
14	Articulated Floor Reaction Orthosis For Children With Crouch Gait Pattern In Cerebral Palsy	Ms. Komal Shrivastava	Mrs. Urmila Naukudkar	2021-2022
15	Hinged Convertible AFO	Ms. Neha Mathpati	Mrs. Vaishali	2021-2022
16	Foot Imprinter	Ms. Anjali Maurya	Mr. Manoj Tiwari	2021-2022

17	Split Hook Terminal Device	Ms. Vaishanvi Mulmandkar	Mr. Kishan Singh Meena	2021-2022
18	Modified AFO For Foot Ulcer	Ms. Sayali Narkhede	Mrs. Urmila Naukudkar	2021-2022
19	Dynamic Orthotic Device For Foot Drop	Mr. Viraj Patil	Mr. H.S Dongre	2021-2022
20	Transfer Device For Spinal Cord Injury	Mr. Hritik Pawar	Mr. Manoj Tiwari	2021-2022
21	Detachable KAFO With Knuckle Joint	Ms. Komal Phad	Ms. Vaishali	2021-2022
22	Pressure Relieving AFO For Diabetic Foot	Ms. Rukmini Sonewad	Ms Vaishali	2021-2022
23	Comparative Study Between Pre-peg Carbon Fibre AFO and Thermoplastic AFO	Mr. Shail Chavda	Mr. Makarand N Saraf	2020-2021
24	Cosmetic Flexion Contracture Elbow Orthosis	Mr. Rushikesh Lipare	Mr. Lukesh Bhuyar	2020-2021
25	Prosthetic Socket Fabrication from Natural Fibre Reinforced Polymer Composite.	Mr. Bhagirath Jana	Mr. Makarand Saraf	2020-2021
26	A device for the management of mild foot drop	Mr. Rushikesh Chavan	Mrs. Urmila Naukudkar	2020-2021
27	Multipurpose Dorsiflexion Assist Device for Foot Deformity.	Mr. Shivam Gupta	Mr. D.P.Prabhu	2020-2021
28	AFO for Prevention of Plantar Flexion Contracture	Ms. Samyaka Bavaskar	Mr. Devidas Thakre	2020-2021
29	Weight Relieving KAFO for Tibial Fractures	Ms. Janvi Pandya	Mrs. Urmila Naukudkar	2020-2021
30	AK Socketless Socket.	Ms. Snehal Changule	Mr. Makarand Saraf	2020-2021
31	Shock Absorbing Elbow Crutch	Ms. Yukta Panchal	Mr. Manoj Kumar Tiwari	2020-2021
32	Anti -Spasticity Ball Splint for Hand and Wrist Stabilization	Ms. Himani Umale	Mr. H.S.Dongare	2020-2021
33	Gait Initiation and Termination	Ms. Nikita Bagle	Mr. Mohit Gupta	2020-2021
34	Partial Finger Prosthesis	Mr. Neville Joshi	Mr. H.S.Dongare	2020-2021

35	Universally Sustainable Assistive Mobility for Disabled in Developing Country like India - REDO TRICYCLE.	Ms. Mansi Pathak	Mr. Manoj Kumar Tiwari	2020-2021
36	Ankle Foot Orthosis Dorsiflexion Assist for Foot Drop	Mr. Shekhar Gupta	Mr. Devidas Thakre	2020-2021
37	Non-Invasive HALO Brace	Ms. Durgeshwari Kadam	Mr. Lukesh Bhuyar	2020-2021
38	Low Cost Motorized Wheelchair for the Differently Abled & Elderly	Mr. Sushil Dantala	Mr. A.G. Indalkar	2019-2020
39	Tremor Stabilizing Splint for Resting Hand Tremors	Ms. Binish Shawl	Mr. Devidas Thakre	2019-2020
40	Adjustable Ankle Joint for Rehabilitation of Neurological Conditions	Ms. Mrunali Kalkotwar	Mr. Devidas Thakre	2019-2020
41	Anatomical Motion Knee Joint: A New Design Concept of Prosthetic Knee Joint for Knee Disarticulation Amputation Prosthesis	Mr. Aqeel Maner	Mr. Lukesh Bhuyar	2019-2020
42	Socket Extractor Tool with Laser Line Apparatus	Mr. Vivek Sharma	Mrs. Urmila Naukudkar	2019-2020
43	Universal Transtibial Prosthetic System for All Activity Levels	Mr. Yogesh Zodge	Mr. Makarand Saraf	2019-2020
44	Knee Orthosis with Genucentric Knee Joint	Ms. Priyanka Patil	Mrs. Urmila Naukudkar	2019-2020
45	Dynamic Torticollis Orthosis	Mr. Niramal Prasad	Mr. Lukesh Bhuyar	2019-2020
46	Functional Dynamic Hand Splint	Ms. Riddhi Shah	Mr. Lukesh Bhuyar	2019-2020
47	Ulnar Deviation Splint with Dial Lock	Ms. Kaveri Hiwale	Mr. Devidas Thakre	2019-2020
48	Low Cost Electric Hand	Mr. Amal Ramanan	Mr. D.P. Prabhu	2019-2020
49	Off Loading Knee Brace	Ms. Rajshri Bhende	Mrs. Urmila Naukudkar	2019-2020
50	Ischial Containment Casting Frame for Unilateral Trans-Femoral Amputee	Ms. Shrutika Ranadive	Mr. Makarand Saraf	2019-2020
51	Pneumatic Foot Prosthesis	Ms. Shreya Singh	Mr. Mohit Gupta	2019-2020

52	Cost Effective Transradial Prosthesis	Ms. Vaishnavi Pawar	Mr. Lukesh Bhuyar	2019-2020
53	Neurophysiologic Ankle Foot Orthosis	Ms. Vaibhavi Sawant	Mr. Devidas Thakre	2019-2020
54	Custom Moulded Sitting Support Orthosis	Ms. Rohini Karande	Mr. Kishan Singh	2019-2020
55	Snapper Cane	Mr. Hridaynath Yadav	Mr. Mohit Gupta	2019-2020
56	Mechanical Dynamic Supination Splint	Ms. Komal Kadolkar	Mr. H.S.Dongare	2019-2020
57	Designing a Dynamic Club Foot Splint for Infants	Ms. Tara Vishwakarma	Mr. H.S.Dongare	2019-2020
58	Spring Loaded Knee Support for Osteo-Arthritis	Ms. Shivani Mule	Mr. Devidas Thakre	2019-2020
59	Wrist Orthosis for Treating Carpal Tunnel Syndrome	Ms. Pratibha Narawade	Mrs. Urmila Naukudkar	2019-2020
60	Adjustable Above Knee Socket for Volume Fluctuation Control	Ms. Neha Tomar	Mr. D.P.Prabhu	2019-2020
61	Crutches Replaces to Prosthesis	Mr. Vaibhav Thakre	Mr. Makarand Saraf	2019-2020
62	Paediatric Posterior Walker	Ms. Vaibhavi Pawar	Mr. Devidas Thakre	2019-2020



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Annexure – PART III (5)

LIST OF CONFERENCES/SEMINARS/WORKSHOPS ATTENDED BY BPO STUDENTS

Sr. No	Conference/Seminar/Workshop	Names of Attendees	Location/Dates
1.	Current Rehabilitation Methods for Cerebral Palsy	Bhagirath Jana Shail Chavda Janvi Pandya	Organized by 29 th October International Committee of the Red Cross (ICRC), Human Study, Germany; International Society for Prosthetics & Orthotics (ISPO) and Orthotics & Prosthetics Association of India (OPAI) from 29 th October 2021 to 2 nd December 2021
2.	Grippy : Affordable Semi-Bionic Hand that Feels like a Real Hand	Aasawari Choudhary Krutika Satpute Nikhil Dongre Shivani Mangaker Riya Amburle Samruddhi Swami Abhishek Pawar Pallavi Tudamwar Payal Sharma Aditi Agare	Online Webinar conducted by Indian Association of Assistive Technologists on 27 th November 2021
3.	Hand Splinting and Rehabilitation	Aasawari Choudhary Krutika Satpute Nikhil Dongre Shivani Mangaker Riya Amburle Samruddhi Swami Abhishek Pawar Pallavi Tudamwar Payal Sharma	Online Webinar conducted by Indian Association of Assistive Technologists on 29 th January 2022
4.	Initiative in Outer Mobility	Aasawari Choudhary Nikhil Dongre Pooja Suthar Krunal Choudhary Daksh Tiwari Shrutika Waghmode Shivani Pawar	Online Webinar conducted by Indian Association of Assistive Technologists on 26 th February 2022

	<p>Shivani Mangekar Aditi Agare Riya Amburle Pallavi Tudamwar Payal Sharma Krutika Satpute Dnyanada Shitole Mehala Devi Ritika Rajak</p>	<p>28-30 March 2022, Panjim Convention Centre, Goa</p>
<p>5. XXXVI National Conference Of The Orthotics And Prosthetics Association Of India</p>	<p>Bhagirath Jana Shekhar Gupta Neville Joshi Mansi Pathak</p>	
<p>6. Online Webinar on Evidence Based Approach On Prosthetics Management of Rotation - Plasty by Indian Association of Assistive Technologists</p>	<p>Ajith Kumar Anand Kumar Katayan Sharma Sanika Karande Komal Shrivastava Hitik Pawar Vaishnavi Mulmandkar Sayali Narkhede Viraj Patil Anjali Jamaker</p>	<p>Online Webinar 28 May 2022</p>

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