

	Dr. N.G.P. ARTS AND SCIENCE COLLEGE (An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore) Approved by Government of Tamil Nadu and Accredited by NAAC A++ Grade (3 rd Cycle- 3.64 CGPA) Dr. N.G.P.-Kalapatti Road, Coimbatore-641048, Tamil Nadu, India Web: www.drngpasc.ac.in Email: info@drngpasc.ac.in Phone: +91-422-2369100	BoS
		16th

Board of Studies Meeting
Department of Medical Physics

The minutes of the 16th meeting of Board of Studies held on 17.10.2023 at 10.30 a.m. at the department, Room No.1517 in B1 Block.

Members Present:

S. No.	Name	Category
1.	Mr. D. Sivakumar	Chairman
2.	Prof. Dr. J. Velmurugan	University Nominee
3.	Mr. Prabakar Victor	Subject Expert
4.	Dr. A. Saravana Kumar	Subject Expert
5.	Mr. S. Antovaz	Industrial Expert
6.	Mr. S. Sankar	Meritorious Alumni
7.	Dr. R. Subramaniam	Co-opted Member
8.	Mr. T. Velmurugan	Co-opted Member
9.	Dr. K. Girija	Co-opted Member
10.	Dr. R. Sowrirajan	Co-opted Member
11.	Mrs. K. Indhumathi	Member
12.	Mrs. G. Daisy	Member
13.	Mr. R. Isaivaannan	Student Representative PG

The HoD and Chairman of the department of Medical Physics welcomed and introduced all the members and appreciated them for their continuous support, contribution for the development of academic standard and enrichment of the syllabus.

The items of the agenda were taken one by one for discussion and the following resolutions were passed.



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Item 16.1

To review and approve the minutes of the previous meeting held on **14.06.2023**

The chairman of the Board presented the minutes of the previous meeting held on 14.06.2023 and requested the members to approve. After brief discussion the following resolution was passed

Resolution:

Resolved to approve the minutes of the previous meeting held on 14.06.2023

Item 16.1 (a) : To consider and approve the syllabi for II semester for the students admitted during the academic year 2023-2024.

The chairman presented the detailed scheme and syllabus for the II semester for the students admitted from the academic year 2023-2024 onwards. The details of changes made also presented as follows.

Changes Made:

Course	Code	Reason
Core Practical -II : Radiation Measuring and Monitoring Instrumentation	232MP2A2CP	Mr. Antovaz suggested to include the following experiment of Calibration of TL phosphor and TL reader & its use in Dose distribution response instead of Radiation exposure: Effect of distance, Shielding and time which is incorporated in other experiments.

New Courses Introduced:

Course	Code	Reason
-	-	-

Courses Removed

Course	Code	Reason
-	-	-

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the II semester for the students admitted from the academic year 2023-24 onwards.



Item 16.1 (b) : To consider and approve the changes, if any, in the syllabi for IV semester for the Students admitted during the academic year 2022-2023.

The Chairman presented the detailed syllabus for the IV semester for the students admitted from the academic year 2022-2023 onwards. The details of changes made also presented as follows.

Changes Made:

Course	Code	Reason
Core Paper : Radiation Hazards, Evaluation and Control	222MP2A4CA	Dr. J. Velmurugan suggested to include “Radiation Safety in Radiation Oncology” by K N Govind Rajan, as a reference book.

New Courses Introduced:

Course	Code	Reason
Professional Ethics and Legal Aspects	222MP2A4CB	The Medical Physics professional’s knowledge, skills and attitudes pertaining to professional ethics.
Advances in Medical Physics	222MP2A4DC	To learn about new advances in dosimetry, artificial intelligence (AI) radiology and radiotherapy

Courses Removed

Course	Code	Reason
-	-	-

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the IV semester for the students admitted from the academic year 2022-23 onwards,

Item 16.2 : To approve the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023-2024.

The Chairman presented the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023-2024.

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Resolution:

Resolved to approve the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023-2024.

Item 16.3 : To consider and approve any other item brought forward by the Chairman and the members of the board.

No other item was brought forward.

Finally the Chairman thanked all the members for their cooperation and contribution in enriching the syllabus with active participation in the meeting and sought the same spirit in the future also. The meeting was closed with formal vote of thanks proposed by Mrs. K. Indhumathi, Medical Physics BoS Member.

Date: 17/10/2023


 17/10/23
 (Mr. D. Sivakumar)

BoS Chairman/HoD
Department of Medical Physics
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048



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Syllabus (New Paper)

Faculty: BAS

Board: Medical Physics

Programme: II PG

Semester: IV

Course Code / Name: 222MP2A4CB / Professional Ethics and Legal Aspects (Core)

Unit	Content
I	Unit -1 Introduction Fundamental Principles of Ethics in Healthcare - Value Systems in Medical Ethics and Guiding Principles - Beneficence and Non-Maleficence - Autonomy and Dignity – Justice - Prudence and Precaution - Honesty and Transparency - Accountability and Liability- Inclusiveness.
II	Unit-II Ethics in Medical Physics Practice Workplace Ethics - Scientific Integrity - Medical Ethics - Education in Professional Ethics for Medical Physicists-Ethical values in medical radiological protection - Ethics of clinical research - Cancer clinical trials - Ethics of publication and plagiarism - Professionalism-
III	Unit-III Ethical Dilemmas, Ethical Principles and Solutions Ethical Dilemma - Diagnostic Radiology – Nuclear Medicine – Radiation Therapy – Radiation Safety and Protection - Professional Matters - Reviewing Practice from an Ethical Perspective - Evaluation method of ethical values of scenarios
IV	Unit-IV The Practical Implementation of Biomedical Ethics Professional oaths and codes of ethics - Role of international, national and institutional ethics committees - Clinical practice developments - Patient's Rights - General ethical issues - Ethical review procedures - Informed consent, incapacity, shared decision-making - financial influences, Patient-centred care - Privacy, confidentiality, and stewardship of health information.
V	Unit - V Legal Aspects in Radiation Oncology Special aspects of medical use of radiation - Roles and Responsibilities of Clinically Qualified Medical Physicists -Legal issues in Medical Practice - Roles and responsibilities of EC.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

<input checked="" type="checkbox"/>	Skill Development	<input checked="" type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input type="checkbox"/>	Innovations
<input checked="" type="checkbox"/>	Intellectual Property Rights	<input checked="" type="checkbox"/>	Gender Sensitization
<input checked="" type="checkbox"/>	Social Awareness/ Environment	<input checked="" type="checkbox"/>	Constitutional Rights/ Human Values/ Ethics





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Syllabus (New Paper)

Faculty: BAS

Programme: II PG

Course Code / Name: 222MP2A4DC / Advances in Medical Physics (DSE)

Board: Medical Physics

Semester: IV

Unit	Content
I	Unit I Microdosimetry Microdosimetric quantities - Solid state based microdosimetric techniques - Gas based Microdosimetry- Biological effects of Microdosimetry, Evaluation of Monte Carlo techniques for Microdosimetry, Microdosimetry in targeted radionuclide therapy and radiotherapy - Cellular dosimetry of targeted Radionuclides, Microdosimetry of radon progeny, Dose-response relationship, Micro and Nanodosimetric calculations, Relationship of absorbed dose, Specific energy and track structures.
II	Unit II Nanodosimetry and its Applications Definition- Nanodosimetric quantities - charge counting Nanodosimetry: Electron based Nanodosimetry and ion based nanodosimetry- History- evaluation of positive ion detector for nanodosimetry, Biological effects of nanodosimetry, - structure- optimization- current scenario - Future developments- Radiation detector- Radiation protection- Radiation biology- Radiation protection- Gamma spectrometry- Gas sensor- Oncology.
III	Unit III Artificial Intelligence in Medical Imaging Applying Artificial Intelligence (AI) in Medical Imaging: Computer Aided Detection (CAD), Principles of Computer Aided Image Analysis in Medical Imaging, Machine Learning (ML), and Deep Learning (DL), Content- Based Image Retrieval (CBIR), Radiomics and Radiogenomics- AI in various Medical Imaging Modalities: Limitations of Human Observers, Computer Vision (CV) and AI, Detection of micro calcifications and breast masses, Present Status and Future Directions.
IV	Unit IV Artificial Intelligence in Ultrasound and Nuclear Medicine AI in Medical Ultrasound: DL Architectures, Applications of DL in Medical US Image Analysis, Future Perspectives- AI in Nuclear Medicine Imaging: Define a Radiomics Diagnostic Algorithm, Applications of AI in Nuclear Medicine, Future Scenarios- Salient features of AI in Medical Imaging: Opportunities and Applications, Challenges, Pitfalls Guidelines for Success, Regulatory and Ethical Issues.
V	Unit V Artificial Intelligence (AI) in Radiotherapy (RT) Importance of AI in Radiotherapy - AI Tools for Automated Treatment Planning (ATP) Present ATP Techniques, AI Challenges in ATP - AI in Intensity Modulated Radiotherapy (IMRT), AI for Auto-segmentation of OAR in IMRT, Future Directions - AI in Brachytherapy: AI in Radiotherapy Quality Assurance(QA), QA of ML Algorithms in Radiotherapy, Challenges Associated with AI for Quality Assurance in RT, Future Directions to Improve AI based Quality Assurance in RT- AI in Radiation Biology- AI in Radiation Protection/Safety: Problems Associated with AI based systems for Radiation Protection, Benefits and Future Directions. Radiomics in Radiotherapy - Challenges for Medical Physicists - AI Considerations for RT Curriculum Development.





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PERCENTAGE OF SYLLABUS REVISED: 100 %

COURSE FOCUSES ON:

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<input checked="" type="checkbox"/>	Employability	<input checked="" type="checkbox"/>	Innovations
<input checked="" type="checkbox"/>	Intellectual Property Rights	<input checked="" type="checkbox"/>	Gender Sensitization
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Syllabus Revision (Core Practical)

Faculty: Basic and Applied Sciences

Board: Medical Physics

Programme: I PG

Semester: II

Course Code / Name: 232MP2A2CP / Radiation Measuring and Monitoring Instrumentation

Experiments	Existing	Changes
1	Statistics of Radioactive Counting.	-
2	Determination of plateau and resolving time of a G.M counter and its application in estimating the shelf ratio and activity of a beta source	-
3	Production and attenuation of Bremsstrahlung.	-
4	Radiation exposure: Effect of distance, Shielding and time.	Calibration of TL phosphor and TL reader & its use in Dose distribution response
5	Determine the range of beta particles	-
6	Backscattering of beta particles.	-
7	Absorption and backscattering of Gamma rays- Determination of HVT and TVT	-
8	Determination of Wedge and Tray factor for a standard field size of Nominal energy	-
9	Quality Assurance of a diagnostic X-ray machine	-
10	Radiation protection survey of Diagnostic Radiology installation	-
11	Leakage Level measurement of a diagnostic x-ray machine.	-
12	Study of Voltage-Current Characteristics of an Ion Chamber	-
13	Cross Calibration of Ion Chambers	-
14	Dose output measurement of high energy photon beams used in radiotherapy department using TRS-398 protocol.	-
15	Dose output measurement of high energy electron beams used in radiotherapy department using TRS 398 protocol	-
16	Head Leakage and Collimator leakage level Measurement of linear accelerator machine (IEC).	-





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PERCENTAGE OF SYLLABUS REVISED: 5 %

COURSE FOCUSES ON

<input checked="" type="checkbox"/>	Skill Development	<input type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input type="checkbox"/>	Innovations
<input type="checkbox"/>	Intellectual Property Rights	<input type="checkbox"/>	Gender Sensitization
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ATTENDANCE OF THE SIXTEENTH BOARD OF STUDIES MEETING

Faculty : Basic and Applied Sciences

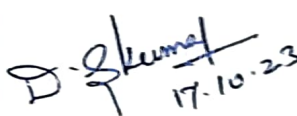

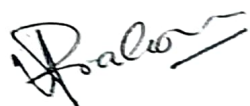


Board: Medical Physics

Venue : B1 Block, 1517

Date : 17/10/2023

Time : 10.30 a.m.

The following members were present for the board of studies meeting.

S. No.	Name	Designation	Signature*
1.	Mr. D. Sivakumar Assistant Professor & Head Department of Medical Physics Dr.N.G.P. ASC	Chairman	 17.10.23
2.	Dr. J. Velmurugan PhD Professor and Head Department of Medical Physics Anna University Chennai - 25	VC nominee	
3.	Mr. Prabakar Victor M.Sc., RSO Assistant Professor of Radiological Physics Coimbatore Medical College and Hospital Trichy Road, Coimbatore - 641018	Subject Expert	
4.	Dr. A. Saravana Kumar PhD Head - Medical Physics PSG Institute of Medical Sciences and Research, Peelamedu Coimbatore - 641004	Subject Expert	
5.	Mr. S. Antovaz M.Sc., RSO Chief Medical Physicist Cum RSO Department of Radiation Oncology Kovai Medical Centre & Hospital Coimbatore-641014	Industrial Expert	



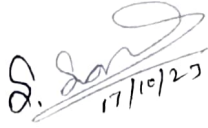
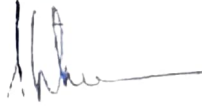

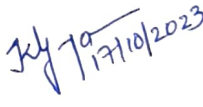






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6.	Mr. S. Sankar M.Sc., RSO Medical Physicist Department of Radiation Oncology Sri Ramakrishna Hospital Siddhapudur, Coimbatore – 641 044	Alumni	 17/10/23
7.	Dr. R. Subramanian M.D. Head, Department of Radiation Oncology Kovai Medical Centre & Hospital Coimbatore - 641014	Co-opted Member	
8	Mr. T. Velmurugan M.Sc. RSO Senior Medical Physicist Department of Radiation Oncology, KMCH Coimbatore - 641014	Co-opted Member	
9	Dr. K. Girija PhD Assistant Professor & Head Department of Physics Dr.N.G.P. ASC	Co-opted Member	 17/10/2023
10.	Dr. R. Sowrirajan PhD Assistant Professor & Head, Department of Mathematics, Dr.N.G.P. ASC	Co-opted Member	
10.	Mrs. K. Indhumathi Assistant Professor Department of Medical Physics Dr.N.G.P. ASC	Internal Member	 17/10/23
11.	Mrs. G. Daisy Assistant Professor Department of Medical Physics Dr.N.G.P. ASC	Internal Member	 17/10/23
12	Mr. R. Isaivannan II M.Sc. Medical Physics Dr. N.G.P. ASC	Student Representative	 17/10/23

Date: 17/10/2023



Dr. NGPASC
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17/10/23
(Mr. D. Sivakumar)

BoS Chairman/HoD
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