

Kanya Maha Vidyalaya, Jalandhar City

(An Autonomous College)



Minutes of 10th Meeting of Board of Studies PG Department of Physics

Date: 20-04-2024

Time: 11:45 AM

Via Zoom video conferencing

Kanya Maha Vidyalaya, Jalandhar
PG Department of Physics
Proceedings of the Meeting of Board of Studies held on 20-04-2024

KANYA MAHA VIDYALAYA, JALANDHAR
(UGC Autonomous College)

Proceedings of the Tenth Meeting of Board of Studies P.G. Department of Physics

The tenth meeting of the board of studies of the Department of Physics was held on 20th April, 2024 at 11:45 am in online mode via Zoom.

Date: Saturday, 20-04-2024

Time: 11:45 am

Venue: Online meeting via Zoom

The following members have attended meeting and detailed minutes are listed below:

Members of BOS:

1.	Dr. Neetu Verma, Head, Department of Physics, Kanya Maha Vidyalaya, Jalandhar	Chairperson	Present
2.	Dr. Atul Khanna, Professor, Dept. of Physics, Guru Nanak Dev University, Amritsar (University Nominee)	Member	Present
3.	Dr. Rohit Mehra, Professor, Dept. of Physics, NIT, Jalandhar (Outside Parent University Nominee)	Member	Absent
4.	Dr. Hitesh, Professor, Dept. of Physics, IKGPTU, Kapurthalla (Outside Parent University Nominee)	Member	Present
5.	Dr. Sachin Tyagi, Principal Scientist, Manufacturing Science and Instrumentation (MSI), CSIR-CSIO, Chandigarh (Industry Expert)	Member	Present
6.	Dr. Shivani Singla, Assistant Professor, Chandigarh University (Alumni)	Member	Present
7.	Dr. Sonik Bhatia, Assistant Professor, Department of Physics, Kanya Maha Vidyalaya, Jalandhar	Member	Present
8.	Dr. Sangeeta Prasher, Assistant Professor, Department of Physics, Kanya Maha Vidyalaya, Jalandhar	Member	Present
9.	Dr. Gopi Shrama, Associate Professor, Department of Physics, Kanya Maha Vidyalaya, Jalandhar	Member	Present
10.	Dr. Harleen Singh, Assistant Professor, Department of Physics, Kanya Maha Vidyalaya, Jalandhar	Member	Present
11.	Dr. Surbhi, Assistant Professor, Department of Physics, Kanya Maha Vidyalaya, Jalandhar	Member	Present

The Chairperson Dr. Neetu Verma welcomed the members of Board of Studies. She apprised the members about the major reforms like implementation of NEP, under which all the classes will be taken into Credit Based Continuous Evaluation System. Current session includes Credits based assessment for B.Sc sem 1-4 whereas continuous assessment system will remain same for B.Sc sem 5 & 6.

After a brief overview, she took up the agenda items for deliberation one by one with the permission of committee members.

Item: Phy 10: 2024: 1 To confirm the Proceedings of Ninth Board of Studies meeting held on 8th July 2023 (**Annexure A**)

The chairperson sent the proceedings of the previous Board of Studies meeting held on 8th July 2023 through email to all the members and proceedings were approved by all the members. The Chairperson however again put up the summary of the proceedings for approval of the house and they approved it through the Zoom meeting.

(attached herewith as Annexure A).

The house approved the Item: Phy 10: 2024: 1

Item: Phy 10: 2024: 2 To discuss Action Taken Report of Ninth Board of Studies meeting held on 8th July 2023

Sr.No.	Agenda Item	Decision taken in Meeting	Action Taken
<u>Item: Phy 9: 2023: 3</u>	To discuss the syllabus and course outcomes of Physics in B.Sc. Non-Medical and Computer Science , Semester 1 & 2 under Credit Based Continuous Evaluation Grading system (CBCEGS) with 20% internal assessment for the session 2023-24.	The proposed syllabus and course outcomes of Physics in B.Sc. Non-Medical and Computer Science, Semester 1 st and 2nd under Credit Based Continuous Evaluation Grading system (CBCEGS) for the session 2023-24 was discussed by Board members and they approved the syllabus with some changes.	The approved syllabus along with changes is implemented
<u>Item: Phy 9: 2023: 4</u>	To discuss the syllabus and course outcomes of Physics in B.Sc. Non-Medical and Computer Science , Semester 3 to 6 under continuous evaluation system with 20% internal assessment for the session 2023-24.	The proposed syllabus and course outcomes of Physics in B.Sc. Non-Medical and Computer Science, Semester 3 to 6 under continuous evaluation system for the session 2023-24 was discussed by Board members and they approved the Syllabus with some changes.	The approved syllabus along with suggested changes is implemented
<u>Item: Phy 9: 2023: 5</u>	To discuss the syllabus and course outcomes of Physics in B.Sc. (Hons.) Physics , Semester 5 to 6 under continuous evaluation system with 20% internal assessment for the session 2023-24.	The Board of Study members discussed the syllabus and course outcomes of Physics B.Sc. (Hons.) Physics, Semester 5 to 6 under continuous evaluation system for the session 2023-24 and they approved it during the Zoom meeting.	The approved syllabus along with suggested changes is implemented for the semester 5 and 6.

<u>Item: Phy 9:</u> <u>2023: 6</u>	To discuss the syllabus and course outcomes of M.Sc. Physics , Semester 1 st and 2 nd under Credit Based Continuous Evaluation Grading system (CBCEGS) with 20% internal assessment for the batch 2023-25.	The syllabus Programme and course outcomes of M.Sc. Physics, Semester 1 st and 2 nd under Credit Based Continuous Evaluation Grading system (CBCEGS) for the session 2023-24, was discussed by the members and they approved it without any change.	The approved syllabus is implemented
<u>Item: Phy</u> <u>9:2023:7</u>	To discuss the syllabus and course outcomes of M.Sc. Physics , Semester 3 rd to 4 th under Credit Based Continuous Evaluation Grading system (CBCEGS) with 20% internal assessment for the session 2023-24.	The syllabus Programme and course outcomes of M.Sc. Physics, Semester 3 rd and 4 th under Credit Based Continuous Evaluation Grading system (CBCEGS) for the session 2023-24, was discussed by the members and they approved it without any change.	The approved syllabus is implemented
<u>Item: Phy 9:</u> <u>2022:8</u>	To discuss the syllabus and course outcomes of B.Sc. Home Science Semester 3 and 4 under continuous evaluation system with 20% internal assessment for the session 2023-24.	The syllabus and course outcomes of B.Sc. Home Science Semester 3 and 4 under continuous evaluation system for the session 2023-24, was discussed by the members and they approved it without any change.	The approved syllabus is implemented.
<u>Item: Phy 9:</u> <u>2023:9</u>	To discuss the syllabus and course outcomes of the Physics for M.Sc. (FYIP) Mathematics , Semester 1 and 2 under Credit Based Continuous Evaluation Grading system (CBCEGS) with 20% internal assessment for the session 2023-24.	The syllabus and course outcomes of M.Sc. (FYIP) Mathematics, Semester 1 and 2 under Credit Based Continuous Evaluation Grading system (CBCEGS) for the session 2023-24, was discussed by the members and they approved it without any change.	The approved syllabus is implemented.

<u>Item: Phy 9: 2023:10</u>	To approve the Examiners and Evaluators for Physics papers in B.Sc. Non-Medical and Computer Science , Semester 3rd to 6th	The syllabus and course outcomes of B.Sc. Non-Medical and Computer Science , Semester 3rd to 6th under Continuous Evaluation system (CES) for the session 2023-24, was discussed by the members and they approved it without any change.	List of approved Examiners was sent to the COE Office.
<u>Item: Phy 9: 2023: 11</u>	To approve the Examiners and Evaluators for Physics papers in B.Sc. (Hons.) Physics , Semester 1 to 6.	The chairperson discussed the Examiners and Evaluators for Physics papers in B.Sc. (Hons.) Physics , Semester 1 to 6 with the members and they approved it.	List of approved Examiners was sent to the COE Office.
<u>Item: Phy 9: 2023:12</u>	To approve the Examiners and Evaluators for Physics papers in M.Sc. Physics , Semester 1 st to 4 th	The chairperson discussed the Examiners and Evaluators for Physics papers in M.Sc. Physics , Semester 1 st to 4 th with the members and they approved it.	List of approved Examiners was sent to the COE Office.
<u>Item: Phy 9: 2023:13</u>	To approve the Examiners and Evaluators for Physics papers in B.Sc. Home Science Semester 3 and 4.	The chairperson discussed the Examiners and Evaluators for Physics papers in B.Sc. Home Science , Semester 3 rd and 4 th with the members and they approved it.	List of approved Examiners was sent to the COE Office.
<u>Item: Phy 9: 2023:14</u>	To approve the Examiners and Evaluators for Physics papers in M.Sc. (FYIP) Mathematics , Semester 1 and 2	The chairperson discussed the Examiners and Evaluators for Physics papers in M.Sc. (FYIP) Mathematics , Semester 1 and 2 with the members and they approved it.	List of approved Examiners was sent to the COE Office.

<u>Item: Phy 9:</u> <u>2023: 15</u>	To discuss the inputs to upgrade the teaching methodologies during session 2022-23.	The house appreciated the activities held and approved the teaching methodologies and various activities held in the department to enhance the teaching learning process.	The teaching methodologies adopted are attached herewith as annexure B.
<u>Item: Phy 9:</u> <u>2023: 16</u>	To discuss research inputs and plans of the department for session 2022-23.	The research inputs and plans were appreciated by the house. The house highly appreciated the research work of the department including CURIE grant and major research project procured by the department from Department of Science and Technology (DST) Govt. of India.	Progress report comprising research made by staff and students is attached herewith annexure C.
<u>Item: Phy 9:</u> <u>2023: 17</u>	To analyse the results of the department.	CO attainment of each course taught in the department for the odd semester was discussed with the members of the board of studies.	Teaching methodologies were changed including group discussion and participation in national conferences to get better CO attainment results.
<u>Item: Phy 9:</u> <u>2023: 18</u> <u>(by email)</u>	To propose internship of final semester students of B.Sc. Non med/ C.Sc. as an optional course	The Proposal was approved by the members of Board of Studies.	Students are applying for the same.

The house approved the Item: Phy 10: 2024: 2

Item: Phy 10: 2024: 3(a) To discuss the Programme outcomes, syllabus and course outcomes of Physics in **B.Sc. Non-Medical and Computer Science**, Semester 1 and 2 under **Credit Based Continuous Evaluation Grading system (CBCEGS)** as per NEP-2020 with **20% internal assessment** for the session 2024-25. **(Annexure B(i))**

The syllabus of B.Sc. Non-Medical and Computer Science, Semester 1 and 2 has been changed as per NEP-2020 keeping in view the changes incorporated by the parent university under **Credit Based Continuous Evaluation Grading system (CBCEGS)** for session 2024-25. The syllabus and course outcomes are approved by the members of BoS. The scheme and curricular of Semester-I and II and provided below:

Semester -I									
Program Name	Course Code	Course Type	Total Marks	Marks					
				Course Name	Credits	Ext.			
					L-T-P	L	P	CA	EXAM TIME In Hrs
Bachelor of Science (Non-Medical)	BSNL-1395	DSC	100	Electricity and Magnetism	4-0-0	80		20	3
Bachelor of Science (Computer Science)	BSNP-1395 BCSP-1395		50	Electricity and Magnetism Lab	0-0-2		40	10	3

Semester -II									
Program Name	Course Code	Course Type	Total Marks	Marks					
				Course Name	Credits	Ext.			
					L-T-P	L	P	CA	EXAM TIME In Hrs
Bachelor of Science (Non-Medical)	BSNL-2395	DSC	100	Mechanics	4-0-0	80		20	3
Bachelor of Science (Computer Science)	BSNP-2395 BCSP-2395		50	Mechanics Lab	0-0-2		40	10	3

Item: Phy 10: 2024: 3(b) To discuss the syllabus, Program Outcomes and course outcomes of Physics in **B.Sc. Non-Medical and Computer Science**, Semester 3rd and 4th under **Credit Based Continuous Evaluation Grading system (CBCEGS) with 20% internal assessment** for the session 2024-25.

The syllabus and course outcomes of the courses of physics for B.Sc. Non-Medical (NM)/Computer Science (CS) semesters 3 and 4 under Credit-based continuous evaluation grading system was discussed. Syllabus, program outcomes and course outcomes of content were approved by Board members.

Semester -III										
Course Name	Program Name	Course Code	Course Type	Total Marks	Marks					
					Paper	Credits	Ext.			
						L-T-P	L	P		
Physics	Bachelor of Science (Non-Medical) Bachelor of Science (Computer Science)	BSNM-3395(I) BCSM-3395(I)	C	75	Statistical Physics and Thermodynamics	3-0-0	60		15	3
		BSNM-3395(II) BCSM-3395(II)		50	Optics and Laser	2-0-0	40		10	3
		BSNM-3395(P) BCSM-3395(P)		50	Physics Lab	0-0-2		40	10	3
				175		5-0-2			35	

Semester -IV										
Course Name	Program Name	Course Code	Course Type	Total Marks	Marks					
					Paper	Credits	Ext.			
						L-T-P	L	P	CA	EXAM TIME In Hrs

Physics	Bachelor of Science (Non-Medical) Bachelor of Science (Computer Science)	BSNM-4395(I) BCSM-4395(I)	C	75	Quantum Mechanics	3-0-0	60		15	3
		BSNM-4395(II) BCSM-4395(II)		50	Atomic and Molecular Spectra	2-0-0	40		10	3
		BSNM-4395(P) BCSM-4395(P)		50	Physics Lab	0-0-2		40	10	3
				175		5-0-2			35	

(Approved syllabus attached herewith as Annexure B(ii))

The house approved the Item: Phy 10: 2024: 3

Item: Phy 10: 2024: 4 To discuss the syllabus, program outcomes and course outcomes of Physics in **B.Sc. Non-Medical and Computer Science**, Semester 5 and 6 under **continuous evaluation system** with 20% internal assessment for the session 2024-25. (Annexure C)

The proposed syllabus, program outcomes and course outcomes of Physics in **B.Sc. Non-Medical and Computer Science**, Semester 5th & 6th under continuous evaluation system for the session 2024-25 was discussed by Board members and they approved the Syllabus.

(Approved syllabus attached herewith as Annexure C)

The house approved the Item: Phy 10: 2024: 4

Item: Phy 10: 2024: 5 To discuss the syllabus and course outcomes of Physics in **M.Sc (FYIP) Physics**, Semester 1 & 2 under **Credit Based Continuous Evaluation Grading system (CBCEGS)** as per NEP-2020 with 20% internal assessment for the session 2024-25. (Annexure D)

The proposed syllabus, program outcomes and course outcomes of Physics in **Master of Science (FYIP) Physics**, Semester 1 and 2 under **Credit based continuous evaluation system** for the session 2024-25 was discussed by Board members and they approved the Syllabus.

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF FIVE YEAR INTEGRATED PROGRAMME

Master of Science (FYIP) Physics

Session-2024-25

Semester-I									
Sr. No.	Course Code	Course Type	Course Title	Credits	Max Marks				Examination time in Hours)
					Total	Ext		CA	
				L-T-P		L	P		
1.	FPHL-1421 FPHL-1031 FPHL-1431	C	Punjabi (Compulsory) ¹ Basic Punjabi ² Punjab History and Culture	4-0-0	100	80	-	20	3
2.	FPHL-1102	AEC	Communicative English-I	4-0-0	100	80	-	20	3
3.	FPHL-1393	DSC	Mechanics	4-0-0	100	80	-	20	3
4.	FPHL-1394	DSC	Thermal Physics	4-0-0	100	80	-	20	3
5.	FPHL-1335	C	Mathematics-I	4-0-0	100	80	-	20	3
6.	FPHL-1086	C	Organic Chemistry	3-0-0	75	60	-	15	3
7.	FPHP-1397	DSC	Physics Lab-I	0-0-3	75	-	60	15	3
8.	FPHP-1088	C	Qualitative Organic Analysis	0-0-1	25	-	20	5	3
9.	VACFF-1492	VAC	*Foundation Course	2-0-0	50	40		10	1

¹ Special paper in lieu of Punjabi (Compulsory) for those who have not studied Punjabi upto 8th/ 10th Class. .

² Special paper in lieu of Punjabi (Compulsory) for those students who are not domicile of Punjab.

*credits/ grade points of these courses will not be added in SGPA/ CGPA of the semester/ Programme and only grades will be provided.

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF FIVE YEAR INTEGRATED PROGRAMME

Master of Science (FYIP) Physics

Session-2024-25

Semester II

Sr. No.	Course Code	Course Type	Course Title	Credits	Max Marks				Examina tion time in Hours)
					Total	Ext		CA	
				L-T-P		L	P		
1	FPHL-1421 FPHL-1031 FPHL-1431	C	Punjabi(Compulsory)-II ¹ Basic Punjabi ² Punjab History and Culture	4-0-0	50	40	-	10	3
2	FPHM-2102	AEC	Communicative English-II	3-0-1	50	25	15	10	3
3	FPHL-2393	DSC	Electricity and Magnetism	4-0-0	100	80	-	20	3
4	FPHL-2394	DSC	Waves and Oscillations	4-0-0	100	80	-	20	3
5	FPHL- 2335	C	Mathematics-II	4-0-0	100	80	-	20	3
6	FPHL-2086	C	Inorganic Chemistry	3-0-0	75	60	-	15	3
7	FPHP-2397	DSC	Physics Lab-II	0-0-3	75	60	-	15	3
8	FPHP-2088	C	Inorganic Chemistry Lab	0-0-1	25	-	20	5	3
9.	VACD-1161	VAC	*Drug Abuse: Problem Management & Prevention (Compulsory)	2-0-0	50	40	-	10	3

¹ Special paper in lieu of Punjabi (Compulsory) for those who have not studied Punjabi upto 8th/ 10th Class. .

² Special paper in lieu of Punjabi (Compulsory) for those students who are not domicile of Punjab.

*credits/ grade points of these courses will not be added in SGPA/ CGPA of the semester/ Programme and only grades will be provided.

(Approved syllabus attached herewith as Annexure D)

The house approved the Item: Phy 10: 2024: 5

Item: Phy 10: 2024:6 To discuss the syllabus and course outcomes of M.Sc. Physics, Semester 1st to 4th under Credit Based Continuous Evaluation Grading system (CBCEGS) with 20% internal assessment for the session 2024-25. (Annexure E)

The syllabus and course outcomes of M.Sc. Physics, Semester 1st to 4th under Credit Based Continuous Evaluation Grading system (CBCEGS) with 20% internal assessment for the session 2024-25, was discussed by the members and they approved it with minor changes in the content as follows:

Kanya Maha Vidyalaya, Jalandhar (Autonomous)
SCHEME AND CURRICULUM OF EXAMINATIONS OF TWO-YEAR DEGREE PROGRAMME
(Under Credit Based Continuous Evaluation Grading System) (CBCEGS)

Master of Science (Physics)

Session 2024-25

SEMESTER-I										
Course Code	Course Title	Course Type	Hours/ Week	Credits L-T-P	Total Credits	Marks				Exam time (in Hours)
						Total	Ext.		C A	
L	P									
MPHL-1391	Analog and Digital Electronics	C	4	4-0-0	4	100	80	-	20	3
MPHL-1392	Mathematical Physics	C	4	4-0-0	4	100	80	-	20	3
MPHL-1393	Classical Mechanics	C	4	4-0-0	4	100	80	-	20	3
MPHL-1394	Computational Techniques	C	4	4-0-0	4	100	80	-	20	3
MPHP-1395	Electronics Lab	C	6	0-0-3	3	100	-	80	20	3
MPHP-1396	Computer Lab	C	6	0-0-3	3	100	-	80	20	3
Student may opt any one of the following Interdisciplinary courses		IDE			4	100	80		20	3
Total				22		600				
IDEC-1101	Communication Skills									
IDEM-1362	Basics of Music (Vocal)									
IDEH-1313	Human Rights and Constitutional Duties									
IDEI-1124	Basics of Computer Applications									
IDEW-1275	Indian Heritage: Contribution to the world									
(Credits of these courses will not be added to SGPA)										
Master of Science (Physics) SEMESTER-II										
Course Code	Course Title	Course Type	Hours Per Week	Hours Per Week L-T-P	Total Credits	Total	Ext.		C A	Exam time (in Hours)
							L	P		
MPHL-2391	Quantum Mechanics-I	C	4	4-0-0	4	100	80	-	20	3
MPHL-2392	Electrodynamics-I	C	4	4-0-0	4	100	80	-	20	3
MPHL-2393	Condensed Matter Physics-I	C	4	4-0-0	4	100	80	-	20	3
MPHL-2394	Atomic and Molecular Spectroscopy	C	4	4-0-0	4	100	80	-	20	3
MPHP-2395	Condensed Matter Physics Lab -I	C	6	0-0-3	3	100	-	80	20	3
MPHP-2396	Spectroscopy Lab	C	6	0-0-3	3	100	-	80	20	3
Total				22		600				

Master of Science (Physics) SEMESTER-III										
Course Code	Course Name	Course Type	Hours Per Week	Credits L-T-P	Total Credits	Marks				Exam time (in Hours)
						Total	Ext.		CA	
							L	P		
MPHL-3391	Quantum Mechanics-II	C	4	4-0-0	4	100	80	-	20	3
MPHL-3392	Electrodynamics-II	C	4	4-0-0	4	100	80	-	20	3
MPHL-3393	Condensed Matter Physics-II	C	4	4-0-0	4	100	80	-	20	3
MPHL-3394	Nuclear Physics	C	4	4-0-0	4	100	80	-	20	3
MPHP-3395	Condensed Matter Physics Lab-II	C	6	0-0-3	3	100	-	80	20	3
MPHP-3396	Nuclear Physics Lab	C	6	0-0-3	3	100	-	80	20	3
Student may opt any one of the following Interdisciplinary courses		IDE			4	100	80		20	3
Total				28	22	600				
IDEC-3101	Communication Skills									
IDEM-3362	Basics of Music (Vocal)									
IDEH-3313	Human Rights and Constitutional Duties									
IDEI-3124	Basics of Computer Applications									
IDEW-3275	Indian Heritage: Contribution to the world									
(Credits of these courses will not be added to SGPA)										
Master of Science (Physics) SEMESTER-IV										
Course Code	Course Name	Course Type	Hours Per Week	Credits L-T-P	Total Credits	Total	Ext.		CA	Exam time (in Hours)
							L	P		
MPHL-4391	Particle Physics	C	4	4-0-0	4	100	80	-	20	3
MPHL-4392	Statistical Mechanics	C	4	4-0-0	4	100	80	-	20	3
MPHL-4393 (OPT-)	Student may choose any two subjects from the following list of options	C	4	4	4	100	80	-	20	3
MPHL-4394 (OPT-)		C	4	4	4	100	80	-	20	3
MPHD-4395	Assignment/ Project	C		0-0-6	6	100		80	20	3
Total					24	22	500			

OPT-I Photonics
 OPT-II Radiation Physics
 OPT-III Reactor Physics
 OPT-IV Nanotechnology
 OPT-V Material Science
 OPT-VI Space Science

Syllabus Changes in Master of Science (Physics) Semester-II

Sem	Name of the course and course Code	Unit	2023-24	2024-25
II	Course code: MPHL-2394: Atomic and Molecular Spectroscopy	UNIT III	Microwave Oven	Deleted
		UNIT IV	Pure Rotational Spectra of linear and polyatomic molecules	Pure Rotational Spectra

(Approved syllabus attached herewith as Annexure E)

The house approved the Item: Phy 10: 2024: 6

Item: Phy 10: 2024:7 To discuss the syllabus and course outcomes of **B.Sc. Home Science**, Semester 3rd to 4th under **Credit Based Continuous Evaluation Grading system (CBCEGS)** with **20% internal assessment** for the session 2024-25. **(Annexure F)**

In the current session of B.Sc. Home Science program sem 3 & 4, the Credit Based Continuous Evaluation Grading System (CBCEGS) was proposed. The syllabus and course outcomes of **B.Sc. Home Science**, Semester 3rd to 4th under **Credit Based Continuous Evaluation Grading system (CBCEGS)** for the session 2024-25 was discussed by the members and they approved it.

Semester-III								
Course Code	Course Title	Course Type	L-T-P	Marks				Examination Time (in hours)
				Total	Ext.		C A	
					L	P		
BHSM-3393	Basic Physics	C	3-0-1	100	60	20	20	3+3
Semester-IV								
BHSM-4396	Applied Physics	C	3-0-1	100	60	20	20	3+3

(Approved syllabus attached herewith as Annexure F)

The house approved the Item: Phy 10: 2024: 7

Item: Phy 10: 2024:8 To discuss the syllabus and course outcomes of course of Physics for **M.Sc. (FYIP) Mathematics**, Semester 1 and 2 under **Credit Based Continuous Evaluation Grading system (CBCEGS)** as per NEP-2020 with **20% internal assessment** for the session 2024-25. **(Annexure G)*(Changes in syllabus as per Annexure G1)**

Proposed syllabus and course outcomes of Physics Master of Science (FYIP) Mathematics Sem I & II under credit based system was discussed by the Board of Members and they approved the syllabus with following changes, keeping the credits the same for each paper.

Master of Science (FYIP) Mathematics Semester-I&II
(Session 2024-25)

Semester-I					
Course Code	Course Name	Course Type	Credits L-T-P	Marks	Examination time (in Hours)

				Total	Ext.		C	
					L	P		
FMAM-1396	Mechanics-I	C	3-0-1	100	60	20	20	3+3
Semester-II								
FMAM-2396	Mechanics-II	C	3-0-1	100	60	20	20	3+3

MASTER OF SCIENCE (FYIP) MATHEMATICS (SEMESTER-I)
(SESSION 2024-25)
Syllabus Changes

Change of Content:

Sem	Name of the course and course Code	Unit	2023-24	2024-25
I	Course code: : MECHANICS-I COURSE CODE: FMAM-1396	UNIT I	Inertial Cartesian and spherical polar co-ordinate systems: area, volume, displacement, velocity and acceleration in these systems, solid angles and frames of reference, Galilean transformation, Galilean Invariance of space & time intervals; fictitious forces. Effect of rotation of earth on 'g'. Effects of centrifugal and Coriolis forces produced as a result of earth's rotation.	Reference frames, Inertial frames, Displacement, velocity & acceleration in Cartesian, Plane polar, and Spherical polar coordinate systems, Area and volume in these coordinate systems. Solid angle. Review of Newton's Laws of Motion, Momentum of variable-mass system: motion of the rocket.
		UNIT II	Internal forces and momentum conservation. Centre of mass. Elastic collisions in laboratory and center of mass systems; velocities, angles, energies in these systems and their relationships. Conservation of angular momentum and examples -shape of the galaxy, angular momentum of 34 solar system. Torques due to internal forces, angular momentum about centre of mass. Crosssection of elastic scattering and impact parameter, Rutherford scattering	Elastic and inelastic collisions in laboratory and centre of mass systems; velocities, angles, energies in these systems and their relationships. Rotational motion of the rigid body, Torques due to internal forces, angular momentum about the centre of mass, Principal axes and inertia tensor, Kinetic energy of rotation, Euler's equations,
		UNIT III	Forces in nature (qualitative). Central forces, Potential energy and force between a point mass and spherical shell, a point mass and solid sphere, gravitational and	Forces in nature (Qualitative). Conservative forces. Central Forces. Motion of a particle under a central force field, Two-body

			electrostatic self energy. Two body problems and the concept of reduced mass. Motion of a body under central force; differential equation of the orbit, equation of orbit in inverse-square force field. Kepler's laws and their derivation.	problem and its reduction to one-body problem and its solution, Reduced mass, Equation of motion of a reduced mass under central force and energy. Differential equation of the orbit, Equation of orbit under inverse square force field, turning points, Kepler's Laws.
		UNIT IV	Equation of motion of a rigid body, Rotational motion of a rigid body in general and that of plane lamina. Rotation of angular momentum vector about a fixed axis. Angular momentum and kinetic energy of a rigid body about the principal axis, Euler's equations.	Galilean transformations; Galilean invariance of space & time intervals, Newton's laws of motion and conservation laws. Non-inertial frames, Fictitious forces. Effect of rotation of the earth on 'g'. Effects of centrifugal and Coriolis forces produced as a result of earth's rotation. Foucault's pendulum and its equation of motion.

MASTER OF SCIENCE (FYIP) MATHEMATICS (SEMESTER-II)

Syllabus Changes

Change of Content:

Sem	Name of the course and course Code	Unit	2023-24	2024-25
II	Course Title: Modern Physics Course Code: FMAM-2396 CHANGED TO Course code: : MECHANICS-I I COURSE CODE: FMAM-2396	UNIT I	Dual Nature of Matter and Radiation: De Broglie's hypothesis, electron diffraction experiments of Davisson and Germer, Wave group and particle velocities, Heisenberg's uncertainty principle, principle of the electron microscope, Diffraction of X-rays from crystals, Planck's quantum hypothesis, Bragg's law of determination of structure of simple crystals.	Concept of stationary universal frame of reference and ether, Michelson-Morley experiment, postulate of special theory of relativity, Lorentz's transformations, relativity of simultaneity, length contraction, time dilation relativistic addition of velocities, variation of mass with velocity and mass energy equivalence.
		UNIT II	Radioisotopes and their Application: Radioactive decay laws, Uranium and Carbon dating, introduction to α , β and γ decays, Radioisotopes, their	The statistical basis of thermodynamics: Probability and thermodynamic probability; principle of equal a priori probabilities, probability distribution, its narrowing with

			production and separation, mass spectrograph, uses of radioisotopes in medicine, agriculture and geology Radiation doses and their units, Biological effects of radiation.	increasing n, average properties, fluctuations, micro and macro states, accessible and inaccessible states.
		UNIT III	Nuclear detection: Principle, construction and application of gas-filled detectors Ionization detector, proportional counter, Geiger Muller detector, Cloud chamber, Scintillation counter and photographic emulsions as detectors.	Phase space, division of phase space into cells, beta parameter and its identification with (kT)-1, probability and entropy, Boltzmann's entropy relation, Distinguishable and indistinguishable particles, Maxwell- Boltzmann statistics, application of M-B statistics to mono atomic gas, principle of equipartition of energy.
		UNIT IV	Elementary particles and cosmic rays, Classification of elementary particles and their properties, conservation laws. Antiparticles, Origin and general characterization of cosmic rays (Primary and Secondary)	Bose-Einstein statistics, deduction of Planck's radiation law, derivation of Wien's displacement law and Stefan's law, Fermi-Dirac statistics and its application to electron gas, comparison of three types of statistics.

(Approved syllabus attached herewith as Annexure G)*(Changes in syllabus as per Annexure G1)

The house approved the Item: Phy 10: 2024: 8

Item: Phy 10: 2024:9 To discuss the syllabus and course outcomes of 1 year **Certificate course in Household Physics under Absolute Marks Grading System (AMGS). (Annexure H).**

Under the Absolute Marks Grading System (AMGS), a new one-year certificate program in household physics has been proposed. Chairperson discussed the credits and course content with BOS members. It was approved with minor suggestions. BOS members recommended improving the practical training elements to give participants real-world experience and successfully reinforce theoretical ideas. Examine the use of multiple-choice questions (MCQs) to effectively and thoroughly gauge students' comprehension.

Suggestions were implemented by increasing practical content and marks.

Semester-I

Course Code	Course Title	Credit	Course Type	Max Marks			Examination Time (In Hours)
				Total	Ext.		
					L	P	
CPHM-1391	Household Physics	2	C	50	30	20	3 Hours

C- Compulsory

Duration- 30 hours

Eligibility- 10+2

Semester-II

Semester II							
Course Code	Course Title	Credit	Course Type	Max Marks			Examination Time (In Hours)
				Total	Ext.		
					L	P	
CPHM-2391	Household Physics	2	C	50	30	20	3 Hours

C- Compulsory

Duration- 30 hours

Eligibility- 10+2

(Approved syllabus attached herewith as Annexure H)

The house approved the Item: Phy 10: 2024: 9

Item: Phy 10: 2024:10 To approve the Examiners and Evaluators for Physics papers in **B.Sc. Non-Medical and Computer Science**, Semester 1st to 6th. **(Annexure I)**

The chairperson discussed the Examiners and Evaluators for Physics papers in **B.Sc. Non-Medical and Computer Science**, Semester 1st to 6th with the members and they approved it. **(Lists attached herewith as Annexure I)**

The house approved the Item: Phy 10: 2024: 10

Item: Phy 9: 2023:11 To approve the Examiners and Evaluators for Physics papers in **M.Sc. (FYIP) Physics**, Semester 1 and 2. **(Annexure J)**

The chairperson discussed the Examiners and Evaluators for Physics papers in **M.Sc. (FYIP) Physics**, Semester 1 and 2. with the members and they approved it. **(Lists attached herewith as Annexure J)**

The house approved the Item: Phy 10: 2024: 11

Item: Phy 9: 2023:12 To approve the Examiners and Evaluators for Physics papers in **M.Sc. Physics**, Semester 1st to 4th **(Annexure K)**

The chairperson discussed the Examiners and Evaluators for Physics papers in **M.Sc. Physics**, Semester 1st to 4th with the members and they approved it. **(Lists attached herewith as Annexure K)**

The house approved the Item: Phy 10: 2024: 12

Item: Phy 9: 2023:13 To approve the Examiners and Evaluators for Physics papers in **B.Sc. Home Science** Semester 3 and 4. **(Annexure L)**

The chairperson discussed the Examiners and Evaluators for Physics papers in **B.Sc. Home Science**, Semester 3rd and 4th with the members and they approved it. **(Lists attached herewith as Annexure L)**

The house approved the Item: Phy 10: 2024: 13

Item: Phy 9: 2023:14 To approve the Examiners and Evaluators for Physics papers in **course of Physics in M.Sc. (FYIP) Mathematics, Semester 1 and 2 (Annexure M)**

The chairperson discussed the Examiners and Evaluators for Physics papers in **course of Physics in M.Sc. (FYIP) Mathematics, Semester 1 and 2** with the members and they approved it. **(Lists attached herewith as Annexure M)**

The house approved the Item: Phy 10: 2024: 14

Item: Phy 9: 2023: 15 To discuss ways of improving teaching methodologies for the 2024-25 academic session by evaluating different teaching approaches and activities. **(Annexure N)**

The Chairperson addressed the assembly about the student's achievements, departmental activities, workshops, seminar and more. Dr. Sachin Tyagi and the other experts from BOS expressed their admiration for the teaching culture at KMV. They proposed prioritizing industry handholding, fostering collaboration, facilitating summer internships, and offering training opportunities.

(Lists attached herewith as Annexure N)

Item: Phy 9: 2023: 16 To discuss research inputs and plans of the department for session 2023-24. **(Annexure O)**

The Chairperson informed the assembly about the research accomplishments of the departmental faculty in the current session, encompassing research publications, patents granted, invited talks, published books, awards, and more. The experts from BOS recognized and appreciated the research endeavors of the department faculty, despite limited infrastructure. It is remarkable that at present three research fellows are working in the department under the government sponsored projects.

(Lists attached herewith as Annexure O)

Item: Phy 10: 2024: 17 To discuss the syllabus and course outcomes of Physics (**Vibrations and Waves**) as Skill Enhancement Course in **B.Sc. Non-Medical and Computer Science**, Semester 2 under **Credit Based Continuous Evaluation Grading system (CBCEGS) as per NEP-2020 with 20% internal assessment** for the session 2024-25 (Annexure Q).

Proposed syllabus and course outcomes of Physics (**Vibrations and Waves**) as Skill Enhancement Course in **B.Sc. Non-Medical and Computer Science**, Semester 2 was discussed by the Board of Members and they approved the syllabus with following changes, keeping the credits the same for each paper.

Item: Phy 9:2023: 18 To analyse the results of the department. **(Annexure P)**

Chairperson discussed the results and attainment of Programme Specific and Course outcomes. by mapping. **(Lists attached herewith as Annexure P)**

(Chairperson)

Dr. Neetu Verma

Head

Department of Physics