

4Year B.Sc. (Honours) (Major in Physics) {2025 Pattern}

Minutes of the PAC Meeting held on 06.06.2024

Date: 06th June, 2024

Time: 10.30 pm to 04.30 pm

The PAC Meeting for 4 Year B.Sc. (Honours) (Major in Physics) {2025 Pattern} programme as per NEP 2020 of **School of Sciences** was held offline & online on **Thursday, 06-06-2024 at 10:30 AM** at school meeting hall. Following members and invitees were present,

Sr. No.	Name of PAC Members	Designation
1.	Dr. Chetana Kamlaskar	(Chairperson) and Member
2.	Dr. Sanjay J. Dhoble	Member
3.	Dr. Pallavi Chetan Dixit	Member
4.	Dr. Sanjay Subhash Latthe	Member
5.	Mr. Nandkishor Sangle	Academic Coordinator (Physics Programme) and Invitee
6.	Ms. Tejaswi Kadam	Invitee
7.	Dr. Bharat More	Invitee
8.	Dr. Jagruti Chavan	Invitee
9.	Dr. Dnyaneshwar Bhusanur	Invitee
10.	Mr. Ravindra Bharsat	Invitee
11.	Ms. Minakshi Kadel	Invitee

Dr. Sunanda More, (**Member**) PAC member was not able to attend the PAC Meeting due to some unavoidable circumstances.

Dr. Chetana Kamlaskar, Director of the School of Sciences and Chairperson of the PAC, first welcomed the PAC members and introduced the purpose of the meeting. During the meeting, the following items were discussed for the collective decision on the proposed Programme content of each course in the 4 Year B.Sc. (Honours) (Major in Physics) {2025 Pattern} programme.

SN	Details of Items	Resolution																																		
1	Agenda 1: To finalize and approve proposed BSc (Honours) (Major in Physics) programme - credit distribution details, second and third year (semester 03 to 06) detailed syllabus related to Major, Minor courses of Physics, and their evaluation pattern for all first, second and third year courses at semester 01 to 06	The PAC members unanimously finalized and approved the proposed programme structure and credit distribution details, syllabus details for all courses at semester 03 to 06 and evaluation pattern for all first, second- and third-year courses at semester 01 to 06 of the following 02 programmes as per NEP2020 guidelines, with few suggestions about courses in programme structure: i) 4 Year B.Sc. (Honours) (Major in Physics and Minor in Chemistry) ii) 4 Year B.Sc. (Honours) (Major in Physics and Minor in Mathematics)																																		
For Major in Physics programmes, the following suggestions are given by the PAC members: 1. For the First year (Semester 01 & 02) of proposed B.Sc. (Major in Physics) programme, PAC members suggested the following changes, align course content and logical sequence of existing 4 Year B.Sc. (Honours) (Major in Physics) programme:																																				
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Code	Name	Suggestions Given by PAC		
Semester 02				
PHY103	Electricity & Magnetism	- It has been advised to maintain the logical sequence of the course content as given below. 02-04→ 02-01 02-01→ 02-02 02-02→ 02-03 02-03→ 02-04 - PAC Suggested the some changes in content to better align with current academic standards as given below.		
		Credit No.-Unit No	Original Content	Suggested Content
		Credit 02-Unit-03	Capacitance of an Isolated spherical conductor. Parallel plate, spherical and cylindrical condenser,	Polar and non-polar molecules, Effect of electric field on polar and non-polar dielectric, atomic dipole moment and polarizability, Parallel plate capacitor partially filled with dielectric. Energy stored and end energy density in parallel plate capacitor.
PHY104	Lab Activities on PHY103	PAC members suggested two more Lab activities • Study of LR Circuit • Study of LCR Circuit		

2. For the second year (Semester 03 & 04) of proposed B.Sc. (Honours) (Major and minor) programme, PAC members suggested the following changes in courses content and align logical sequence of existing 4 Year B.Sc. (Honours) (Major in Physics) programme:

Semester 03				
PHY201	Thermodynamics & Statistical Mechanics	Credit 01-Unit-02: Scale of temperature (Celsius, Kelvin, Fahrenheit and Rankine) and their inter relation		
PHY202	Mathematical Methods in Physics	PAC members Suggested the some changes in syllabus to better align with current academic standards and industry expectations, ensuring that it appropriately challenges students while supporting their continued growth and development.		
		UN	Old Unit	Suggested Unit
		01-01	Calculus of functions of more than one variable	Coordinate system
		01-02	Frobenius Method	General Curvilinear co-ordinate system

		01-03	Special Functions	Vector Operators in Curvilinear co-ordinate system
		01-04	Some Special Integrals	Fourier series
		02-01	Laplace Transform	Calculus of functions of more than one variable
		02-02	Properties of Laplace Transform	Frobenius Method
		02-03	Inverse Laplace Transform	Special Functions
		02-04	Applications of Laplace Transform	Some Special Integrals

3. For the Third year (Semester 05 & 06) of proposed **B.Sc.** (Honours) programme, PAC members suggested the following changes courses content and align logical sequence of existing 4 Year B.Sc. (Honours) (Major in Physics) programme:

Semester 04											
PHY204	Optics	It has been advised to maintain the logical sequence of the course content as given below. 02-04→ 02-01 02-01→ 02-02 02-02→ 02-03 02-03→ 02-04 PAC Suggested the some changes in content to better align with current academic standards as given below. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Credit No.- Unit No</th><th>Original Content</th><th>Suggested Content</th></tr> </thead> <tbody> <tr> <td>Credit 03- Unit-04</td><td>Resolving Power of Optical Instruments</td><td>Rayleigh criterion of resolution, resolving power of an optical instrument: and Rayleigh criteria of resolution.</td></tr> <tr> <td>Credit 04- Unit-04</td><td>Fiber Optics: Optical Fibre</td><td>Fiber Optics: Total internal reflection, Optical Fibre,</td></tr> </tbody> </table>	Credit No.- Unit No	Original Content	Suggested Content	Credit 03- Unit-04	Resolving Power of Optical Instruments	Rayleigh criterion of resolution, resolving power of an optical instrument: and Rayleigh criteria of resolution.	Credit 04- Unit-04	Fiber Optics: Optical Fibre	Fiber Optics: Total internal reflection, Optical Fibre,
Credit No.- Unit No	Original Content	Suggested Content									
Credit 03- Unit-04	Resolving Power of Optical Instruments	Rayleigh criterion of resolution, resolving power of an optical instrument: and Rayleigh criteria of resolution.									
Credit 04- Unit-04	Fiber Optics: Optical Fibre	Fiber Optics: Total internal reflection, Optical Fibre,									

Semester 05		
PHY301	Classical Mechanics & Quantum Mechanics	- It has been advised to maintain the logical sequence of the course content as given below. 03-02→ 03-04 04-03→ 04-01 03-03→ 03-02 04-01→ 04-02 03-04→ 03-03 04-02→ 04-03 - PAC members advised to Revise name of unit 04-01- Stationary state Problems
PHY302	Solid State Physics	PAC Suggested the some changes in content to better align with current academic standards as given below.

		<table><tr><td>Credit No.- Unit No</td><td>Original Content</td><td>Suggested Content</td></tr><tr><td>Credit 01- Unit 01</td><td>Unit Cell. Miller Indices</td><td>Unit Cell. Lattice Translation Vectors. Lattice with a Basis – Central and Non-Central Elements. Bravais Lattice in two and three dimensions, Miller Indices</td></tr><tr><td>Credit 02- Unit-02</td><td>Kronig Penny model</td><td>Origin of band structure, Kronig Penny model</td></tr><tr><td>Credit 02- Unit-03</td><td>Introduction to Superconductiv ity,</td><td>Introduction to Superconductivity, critical temp. for superconductor.</td></tr></table>	Credit No.- Unit No	Original Content	Suggested Content	Credit 01- Unit 01	Unit Cell. Miller Indices	Unit Cell. Lattice Translation Vectors. Lattice with a Basis – Central and Non-Central Elements. Bravais Lattice in two and three dimensions, Miller Indices	Credit 02- Unit-02	Kronig Penny model	Origin of band structure, Kronig Penny model	Credit 02- Unit-03	Introduction to Superconductiv ity,	Introduction to Superconductivity, critical temp. for superconductor.
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Credit 02- Unit-03	Introduction to Superconductiv ity,	Introduction to Superconductivity, critical temp. for superconductor.												
PHY303	Lab Activities on PHY301 & PHY302	• PAC members advised to Correct 150°C instead of 1000 C.												
PHY304	Astronomy & Astrophysics	• It has been advised to maintain the logical sequence of the course content as given below. <table><tr><td>01-03→ 02-01</td></tr><tr><td>04-02→ 04-01</td></tr></table>	01-03→ 02-01	04-02→ 04-01										
01-03→ 02-01														
04-02→ 04-01														
PHY305	Semiconductor Technology	• PAC members have advised to maintain the logical sequence of the course content as given below. <table><tr><td>02-01→ 01-02</td><td>01-03→ 02-01</td></tr><tr><td>02-02→ 01-03</td><td>01-04→ 02-02</td></tr><tr><td>01-02→ 01-04</td><td></td></tr></table> • PAC members advised to revise name of unit 04-01- Power Devices.	02-01→ 01-02	01-03→ 02-01	02-02→ 01-03	01-04→ 02-02	01-02→ 01-04							
02-01→ 01-02	01-03→ 02-01													
02-02→ 01-03	01-04→ 02-02													
01-02→ 01-04														

Semester 06								
PHY307	Nuclear Physics & Radiation Safety	• PAC members have advised to maintain the logical sequence of the course content as given below. <table><tr><td>03-04→ 03-01</td><td>03-01→ 03-04</td></tr><tr><td>03-03→ 03-02</td><td>03-02→ 04-01</td></tr><tr><td>04-01→ 03-03</td><td></td></tr></table> • 03-02: Added Radiation Dosimetry	03-04→ 03-01	03-01→ 03-04	03-03→ 03-02	03-02→ 04-01	04-01→ 03-03	
03-04→ 03-01	03-01→ 03-04							
03-03→ 03-02	03-02→ 04-01							
04-01→ 03-03								
PHY310	Earth Physics	• PAC members have advised to replace the name of course as Geophysics instead of Earth Physics. • PAC members also suggested the some changes in course syllabus to better align with current academic standards, Research and industry expectations, ensuring that it appropriately challenges students while supporting their continued growth and development. • With due respect to PAC member’s decision related to proposed course content, PHY310: Earth Physics						

			course was replaced with PHY310: Instrumentation course, as measurement of physics parameters, Magnetic and Electrical Quantities content were not covered at UG level. Hence, this course was included in the attached syllabus.				
	PHY311	Energy Storage Devices	• PAC members have advised to maintain the logical sequence of the course content as given below. <table><tr><td>03-01→ 03-04</td><td>03-04→ 04-01</td></tr><tr><td>04-01→ 03-01</td><td></td></tr></table>	03-01→ 03-04	03-04→ 04-01	04-01→ 03-01	
03-01→ 03-04	03-04→ 04-01						
04-01→ 03-01							
	PHY312	Embedded System	• 04-04: PAC members have advised to add content as ‘Future trends in embedded system’. • The title of the course was changed as ‘Microcontroller and Embedded System’ with updated content.				
4. It is also suggested that course content of major shall be used for providing Physics as Minor in other programmes offered by this school.(Appendix III)							
Action Taken: Programme structure and credit distribution have been modified accordingly. Refer Appendix I for modified programme structure and credit distribution, Appendix II for Updated syllabus.							
2	Agenda 2: Finalization and approval of Syllabus of Elective courses (DSE), OE/VSC courses etc. related to Physics		1. The PAC members unanimously finalized and approved the syllabus of the proposed Major in Physics courses with few suggestions, which were retained after the finalization of the programme structure. • PAC members suggested the some changes in course content of PHY310: Geophysics (Title renamed instead of Earth Physics) for better align with current academic standards, Research and industry expectations, ensuring that it appropriately challenges students while supporting their continued growth and development. 2. The selection of Elective courses (DSE) related to Physics have been discussed and approved after fruitful deliberations among all PAC members. 3. The OE/VSC courses etc. related to Physics have been discussed and in which some courses are suggested which will be open for all faculties. The detail discussion regarding OE/VSC will be finalised in next PAC meeting. • The PAC members Suggested OE course title are given below: - i. PHY-XXX: Physics in Daily Life ii. PHY-XXX: Renewable Energy for daily Life iii. PHY-XXX: LED Light Repairing and Maintenance iv. PHY-XXX: Maintenance and Repairing of Physics Lab equipment				

		v. PHY-XXX: Home appliances Repairing and Maintenance
	Action Taken: Syllabus has been updated as per the modified programme structure. Refer Appendix II for updated syllabus.	
	Agenda 3: Framing guidelines for OJT/FP and RP Courses	The PAC members agreed to guide time to time regarding the OJT/FP and RP courses. A booklet of OJT/FP will be proposed by School of Sciences for all UG courses, which will be finalized in due course of time. It was also resolved to authorize the Director of this School to enrich and update the OJT, Field Project (FP), and Research Project (RP) guidelines from time to time as per the University Policy decisions/norms.
4	Agenda 4: Identification of Writers/Editors for SLM development task	The PAC members unanimously gave their consent for the writing/editing of the Self Learning Material (SLM) for the 4 Year B.Sc. (Honours) (Major in Physics) programme. For a few courses, the PAC members have given their consent for SLM development. They also agreed to recommend experts for the new courses, in due course of time. It was also resolved to authorize the Director of this School to enrich and update the list of writers/editors for the Self Learning Material (SLM) development task from time to time as per the University Policy decisions/norms.
5	Timely subjects if any:	--

Meeting ends with vote of thanks by **Dr. Chetana Kamlaskar**.

Thanks...



(Dr. Chetana Kamlaskar)

Chairperson, PAC B.Sc. (Physics)

Credit Distribution:

Physics: Major, Minor, OE, VSC and IKS Courses

Level	Sem	Major				Minor	OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem	
		Mandatory		Electives												
4.5	I	PHY101: Mechanics (T)	4	-		-	OE101: Foundation (T)	2	VSC101: Basic Instrumentation Skills (TW)	2	AEC101: English Communication-1 (T)	2	CC101: Yoga (TW)	2	22	
		PHY102: Lab Activity on PHY101 (P)	2				OE102: (T)	2	SEC101: Fundamental Statistics using MS Excel (TW)	2	VEC101: Value Education (T)	2				IKS101: Generic IKS (T)
	II	PHY103: Electricity & Magnetism (T)	4	-	PHY103: Electricity & Magnetism (T)	2	OE103: Foundation (T)	2	VSC102: Lab Activities on PHY103(P)	2	AEC102: English Communication-2 (T)	2				CC102: Photography & Bird Watching (TW)
		PHY104: Lab Activity on PHY103 (P)	2				OE104: (T)	2	SEC102: Solar Panel System (TW)	2	VEC102: Environmental Education (T)	2				
Cum. Cr.		12		00		02		08		08		10		04		44
5.0	III	PHY201: Thermodynamics & Statistical Mechanics (T)	4	-		PHY201: Thermodynamics & Statistical Mechanics (T)	4	OE 201: (T)	2	VSC201: Lab Activities on PHY201 (P)	2	AEC201: Modern Indian Language- 1 (T)	2	FP201: Field Project (TW)	2	22
		PHY202: Ancient Indian Physics (T) (IKS)	2											CC201: Astronomy for Beginners (TW)	2	
		PHY203: Lab Activity on PHY201 (P)	2													
	IV	PHY204: Wave Motion & Optics (T)	4	-	PHY204: Wave Motion & Optics (T)	4	Code: IPR(T)	2	SEC201: Financial & Investment Skills (TW)	2	AEC202:Modern Indian Language- 2 (T)	2	CEP201: Bee Keeping (TW)	2	22	
		PHY205: Mathematical Methods in Physics (T)	2										CC202: Applied Arts (TW)	2		
		PHY206: Lab Activity on PHY204 (P)	2													
Cum. Cr.		28		00		10		12		12		14		12		88

Level	Sem	Major				Minor			OE	VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem	
		Mandatory		Electives													
5-5	V	PHY301: Classical & Quantum Mechanics (T)	4	PHY304: Astronomy & Astrophysics (T) OR PHY305: Semiconductor Technology (T) OR PHY306: Electronics (T)	4	PHY301: Classical & Quantum Mechanics (T)	4	-	-	VSC301: Lab Activity on PHY301 (P)	2	-	-	FP/ CEP301: Awareness of Sustainable Development Goals (TW)	2	22	
		PHY302: Solid State Physics (T)	2														
		PHY303: Lab Activity on PHY301 & PHY302 (P)	4														
	VI	PHY307: Nuclear Physics & Radiation Safety (T)	4	PHY310: Instrumentation (T) OR PHY311: Energy Storage Devices (T) OR PHY312: Embedded System (T)	4	PHY307: Nuclear Physics & Radiation Safety (T)	4	-	-	-	-	-	PHYOJT301 : OJT (TW)	4	22		
		PHY308: Electromagnetic Theory (T)	2														
		PHY 309: Lab Activity on PHY307 & PHY308 (P)	4														
Cum. Cr.		48		08		18		12		14		14		18		132	

Level	Sem	Major				Minor		OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP,CC, RP		Cum. Cr. / Sem	
		Mandatory		Electives													
6.0	VII	PHY401: Classical Mechanics (T)		4	PHY406:Experimental Techniques in Physics (T) OR PHY407: Physics of LASERs (T)		4	RES405: Research Methodology (T)		4	-		-		-	2	22
		PHY402: Electronic Devices (T)		4													
		PHY403: Mathematical Methods in Physics (T)		2													
		PHY404: Physics – I (P)		4													
	VIII	PHY409:Atomic & Molecular Physics (T)		4	PHY415: Fundamental of Material Science (T) OR PHY416: Medical Physics (T)		4	-							PHY413: OJT (TW)	4	22
		PHY410: Electrodynamics (T)		4													
		PHY411: Quantum Mechanics-I (T)		2													
		PHY412: Physics – II (Computational Methods using ‘C’) (P)		4													
Cum. Cr.		76		16		22		12		14		14		22		176	

Appendix I Programme Structure: 4 Year B.Sc. (Honours) (Major in Physics and Minor in Mathematics) {2025 Pattern}

Level	Sem	Major				Minor	OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem	
		Mandatory		Electives												
4.5	I	PHY101: Mechanics (T)	4	-		-		2	2	VSC101: Basic Instrumentation Skills (TW)	2	AEC101: English Communication-1 (T)	2	CC101: Yoga(TW)	2	22
		PHY102: Lab Activity on PHY101 (P)	2							2	2	SEC101: Fundamental Statistics using MS Excel (TW)	2			
	PHY103: Electricity & Magnetism (T)			4	-		MAT101: Fundamentals of Mathematics (T)	2	2			2	VSC102: Practical Based on MAT101 (P)			
	PHY104: Lab Activity on PHY103 (P)	2	SEC102: Solar Panel System (TW)	2						VEC102: Environmental Education (T)	2					
Cum. Cr.		12		00		02		08		08		10		04		44
Exit option: Award of UG Certificate in PHYSICS as Major with 44 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor																
5.0	III	PHY201: Thermodynamics & Statistical Mechanics (T)	4	-		MAT103: Calculus (T)	4	OE 201: (T)	2	VSC201: Practical Based on MAT103 (P)	2	AEC201: Modern Indian Language- 1 (T)	2	FP201: Field Project (TW)	2	22
		PHY202: Ancient Indian Physics (T) IKS	2											CC201: Astronomy for Beginners (TW)	2	
		PHY203: Lab Activity on PHY201 (P)	2													
	IV	PHY204: Wave Motion & Optics (T)	4	-		MAT201: Linear Algebra (T)	4	Code: IPR(T)	2	SEC201: Financial & Investment Skills (TW)	2	AEC202:Modern Indian Language- 2 (T)	2	CEP201: Bee Keeping (TW)	2	22
		PHY205: Mathematical Methods in Physics (T)	2											CC202: Applied Arts (TW)	2	
		PHY206: Lab Activity on PHY204 (P)	2													
Cum. Cr.		28		00		10		12		12		14		12		88
Exit option: Award of UG Diploma in PHYSICS as Major and MATHEMATICS as Minor with 88 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor																

Level	Sem	Major				Minor	OE		VSC, SEC (VSEC)	AEC, VEC, IKS		OJT, FP, CEP, CC, RP	Cum. Cr. / Sem			
		Mandatory		Electives												
5-5	V	PHY301: Classical & Quantum Mechanics (T)	4	PHY304: Astronomy & Astrophysics (T) OR PHY305: Semiconductor Technology (T) OR PHY306: Electronics (T)	4	MAT301:Differential Equations (T)	4	-	-	VSC301: Programming in MATLAB (P)	2	-	-	FP/ CEP301: Awareness of Sustainable Development Goals (TW)	2	22
		PHY302: Solid State Physics (T)	2													
		PHY303: Lab Activity on PHY301 & PHY302 (P)	4													
	VI	PHY307: Nuclear Physics & Radiation Safety (T)	4	PHY310: Instrumentation (T) OR PHY311: Energy Storage Devices (T) OR PHY312: Embedded System (T)	4	MATXXX: Numerical Analysis (T)	4	-	-	-	-	-	PHYOJT301 : OJT (TW)	4	22	
		PHY308: Electromagnetic Theory (T)	2													
		PHY 309: Lab Activity on PHY307 & PHY308 (P)	4													
Cum. Cr.		48		08		18		12		14		14		18		132
Exit option: Award of UG Degree in PHYSICS as Major with 132 credits OR Continue with Major and Minor																

Level	Sem	Major				Minor		OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP,CC, RP		Cum. Cr. / Sem		
		Mandatory		Electives														
6.0	VII	PHY401: Classical Mechanics (T)		4	PHY406:Experimental Techniques in Physics (T) OR PHY407: Physics of LASERs (T)		4	RES405: Research Methodology (T)		4	-	-	-	-	2	22		
		PHY402: Electronic Devices (T)		4														
		PHY403: Mathematical Methods in Physics (T)		2														
		PHY404: Physics – I (P)		4														
	VIII	PHY409:Atomic & Molecular Physics (T)		4	PHY415: Fundamental of Material Science (T) OR PHY416: Medical Physics (T)		4	-						PHY413: OJT (TW)	4	22		
		PHY410: Electrodynamics (T)		4														
		PHY411: Quantum Mechanics-I (T)		2														
		PHY412: Physics – II (Computational Methods using ‘C’) (P)		4														
Cum. Cr.		76			16			22		12		14		14		22		176
Four Year UG Honours Degree in PHYSICS as Major and MATHEMATICS as Minor with 176 credits																		

Appendix I Programme Structure: 4 Year B.Sc. (Honours) (Major in Physics and Minor in Chemistry){2025 Pattern}

Level	Sem	Major				Minor	OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem			
		Mandatory		Electives														
4.5	I	PHY101: Mechanics (T)	4	-		-		2	2	VSC101: Basic Instrumentation Skills (TW)	2	AEC101: English Communication-1 (T)	2	CC101: Yoga(TW)	2	22		
		PHY102: Lab Activity on PHY101 (P)	2							2	2	VEC101: Value Education (T)	2				IKS101: Generic IKS (T)	2
	II	PHY103: Electricity & Magnetism (T)	4	-		CHE103: Physical & Organic Chemistry-I (T)	2	2	2	VSC102 Physical & Organic Chemistry-I (P)	2	AEC102: English Communication-2 (T)	2	CC102: Photography & Bird Watching (TW)	2	22		
		PHY104: Lab Activity on PHY103 (P)	2							2	2	VEC102: Environmental Education (T)	2					
Cum. Cr.		12		00		02		08		08		10		04		44		
Exit option: Award of UG Certificate in PHYSICS as Major with 44 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor																		
5.0	III	PHY201: Thermodynamics & Statistical Mechanics (T)	4	-		CHE201: Physical & Organic Chemistry-II (T)	4	OE 201: (T)	2	VSC201: Physical & Organic Chemistry-II (P)	2	AEC201: Modern Indian Language- 1 (T)	2	FP201: Field Project (TW)	2	22		
		PHY202: Ancient Indian Physics (T) IKS	2											CC201: Astronomy for Beginners (TW)	2			
		PHY203: Lab Activity on PHY201 (P)	2															
	IV	PHY204: Wave Motion & Optics (T)	4	-		CHE204:Basic Analytical Chemistry (T)	4	Code: IPR(T)	2	SEC201: Financial & Investment Skills (TW)	2	AEC202:Modern Indian Language- 2 (T)	2	CEP201: Bee Keeping (TW)	2	22		
		PHY205: Mathematical Methods in Physics (T)	2											CC202: Applied Arts (TW)	2			
		PHY206: Lab Activity on PHY204 (P)	2															
Cum. Cr.		28		00		10		12		12		14		12		88		
Exit option: Award of UG Diploma in PHYSICS as Major and CHEMISTRY as Minor with 88 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor																		

Level	Sem	Major				Minor	OE		VSC, SEC (VSEC)	AEC, VEC, IKS			OJT, FP, CEP, CC, RP		Cum. Cr. / Sem	
		Mandatory		Electives												
5-5	V	PHY301: Classical & Quantum Mechanics (T)	4	PHY304: Astronomy & Astrophysics (T) OR PHY305: Semiconductor Technology (T) OR PHY306: Electronics (T)	4	CHE206:Physical & Inorganic Chemistry(T)	4	-	-	VSC301: Physical & Inorganic Chemistry (P)	2	-	-	FP/ CEP301: Awareness of Sustainable Development Goals (TW)	2	22
		PHY302: Solid State Physics (T)	2													
		PHY303: Lab Activity on PHY301 & PHY302 (P)	4													
	VI	PHY307: Nuclear Physics & Radiation Safety (T)	4	PHY310: Instrumentation (T) OR PHY311: Energy Storage Devices (T) OR PHY312: Embedded System (T)	4	CHE306: Green Chemistry (T)	4	-	-	-	-	-	PHYOJT301 : OJT (TW)	4	22	
		PHY308: Electromagnetic Theory (T)	2													
		PHY 309: Lab Activity on PHY307 & PHY308 (P)	4													
Cum. Cr.		48		08		18		12		14		14		18		132
Exit option: Award of UG Degree in PHYSICS as Major with 132 credits OR Continue with Major and Minor																

Level	Sem	Major				Minor		OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP,CC, RP		Cum. Cr. / Sem		
		Mandatory		Electives														
6.0	VII	PHY401: Classical Mechanics (T)		4	PHY406:Experimental Techniques in Physics (T) OR PHY407: Physics of LASERs (T)		4	RES405: Research Methodology (T)		4	-	-	-	-	2	22		
		PHY402: Electronic Devices (T)		4														
		PHY403: Mathematical Methods in Physics (T)		2														
		PHY404: Physics – I (P)		4														
	VIII	PHY409:Atomic & Molecular Physics (T)		4	PHY415: Fundamental of Material Science (T) OR PHY416: Medical Physics (T)		4	-						PHY413: OJT (TW)	4	22		
		PHY410: Electrodynamics (T)		4														
		PHY411: Quantum Mechanics-I (T)		2														
		PHY412: Physics – II (Computational Methods using ‘C’) (P)		4														
Cum. Cr.		76			16			22		12		14		14		22		176
Four Year UG Honours Degree in PHYSICS as Major and CHEMISTRY as Minor with 176 credits																		

APPENDIX II:

SYLLABUS OF B.Sc. (HONOURS) (PHYSICS AS MAJOR)

Refer the syllabus file attached with this mail separately

APPENDIX III: SYLLABUS OF B.Sc. (HONOURS) (PHYSICS AS MINOR)

Refer the syllabus file attached with this mail separately