

KAZI NAZRUL UNIVERSITY		FACULTY OF SCIENCE		DEGREE PROGRAMME: 3 YEARS DEGREE WITH PHYSICS/4 YEARS DEGREE WITH PHYSICS HONOURS/ 4 YEARS DEGREE WITH PHYSICS HONOURS WITH RESEARCH			WITH EFFECT FROM THE ACADEMIC SESSION: 2023-24								
Abbreviated Degree	Abbreviated Degree Programme	Semester	Course Name	Course Type	Course Code	Course Details	L - T - P	Course Credit	Sem Credit	CA Marks		ESE Marks		Total Marks	Sem Marks
										Practical	Theoretical	Practical	Theoretical		
		I	PHYSICS MAJOR	MAJOR	BSCPHYMJ101	Mechanics and General properties of Matter	3 - 0 - 4	5	20	30	15	20	35	100	350
			MINOR COURSE- Choose from the Pool of Minor Courses offered in 1st Semester by the other Disciplines	MINOR	See Pool	Mechanics and General properties of Matter	3 - 0 - 4	5		30	15	20	35	100	
			Choose from the Pool of Multidisciplinary Courses offered in 1st Semester	MD	See Pool	MDC-1	3 - 0 - 0	3			15		35	50	
			English/MIL Communication	AEC	See Pool	AEC-1	4 - 0 - 0	4			15		35	50	
			From Major	SEC	BSCPHYSE101	SEC-1	0 - 0 - 6	3		15		35		50	
		II	PHYSICS MAJOR	MAJOR	BSCPHYMJ201	Electricity and magnetism	3 - 0 - 4	5	20	30	15	20	35	100	350
			MINOR COURSE- Minor Course opted for in the 1st semester should be continued in the 2nd semester with syllabus content of 2nd semester	MINOR	Corresponding Course Code of Minor opted in 1st Semester	Electricity and magnetism	3 - 0 - 4	5		30	15	20	35	100	
			Choose from the Pool of Multidisciplinary Courses offered in 2nd Semester	MD	See Pool	MDC-2	3 - 0 - 0	3			15		35	50	
			Environment Studies	VAC	VAC-201	VAC-1	4 - 0 - 0	4			15		35	50	
			From Major	SEC	BSCPHYSE201	SEC-2	0 - 0 - 6	3		15		35		50	
Student exiting the programmes after securing 40 credits will be awarded UG Certificate in the relevant Discipline/Subject provided they secure 4 credits in work based vocational courses offered during summer term or internship / Apprenticeship. In addition to 6 credits from skill-based courses earned during first and second semester															
		III	PHYSICS MAJOR	MAJOR	BSCPHYMJ301	Mathematical Methods in Physics	4 - 1 - 0	5	22		30		70	100	400
			PHYSICS MAJOR	MAJOR	BSCPHYMJ302	Optics	3 - 0 - 4	5		30	15	20	35	100	
			MINOR COURSE- Choose from the Pool of Minor Courses offered in 3rd Semester by the other Disciplines	MINOR	See Pool	Fundamentals of Optics	4 - 1 - 0	5			30		70	100	
			Choose from the Pool of Multi-Disciplinary Courses offered in 3rd Semester	MD	See Pool	MD-3	2 - 1 - 0	3			15		35	50	
			English Communication	AE	See Pool	AECC-2	4 - 0 - 0	4			15		35	50	
		IV	PHYSICS MAJOR	MAJOR	BSCPHYMJ401	Classical Mechanics and special theory of relativity	4 - 1 - 0	5	22		30		70	100	400
			PHYSICS MAJOR	MAJOR	BSCPHYMJ402	Heat and Thermal Physics	3 - 0 - 4	5		30	15	20	35	100	
			MINOR COURSE- Choose from the Pool of Minor Courses offered in 4th Semester by the other Disciplines	MINOR	See Pool	Fundamentals of Thermal Physics	4 - 1 - 0	5			30		70	100	
			From Major	SEC	BSCPHYSE-401	SEC-3	0 - 0 - 6	3		15		35		50	
			VALUE ADDED COURSE- Choose from the Pool of VAC offered in 4th Semester	(Any One)	VA	See Pool	VAC-2	See Pool		4	See Pool				

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PHYSICS

Students exiting the programmes after securing 80 credits will be awarded UG Diploma in the relevant Discipline/Subject provided they secure additional 4 credits in skill based vocational courses offered during first year or second year summer term															
V	PHYSICS MAJOR		MAJOR	BSCPHYMJ501	Analog Electronics	3 - 0 - 4	5	20	30	15	20	35	100	400	
	PHYSICS MAJOR		MAJOR	BSCPHYMJ502	Quantum mechanics-I	3 - 0 - 4	5		30	15	20	35	100		
	PHYSICS MAJOR		MAJOR	BSCPHYMJ503	EM theory and its applications	4 - 1 - 0	5			30		70	100		
	MINOR COURSE- Choose from the Pool of Minor Courses offered in 5th Semester by the other Disciplines		MINOR	See Pool	Basic Electronics	4 - 1 - 0	5			30		70	100		
VI	PHYSICS MAJOR		MAJOR	BSCPHYMJ601	Nuclear and Particle Physics	4 - 1 - 0	5	22		30		70	100	450	
	PHYSICS MAJOR		MAJOR	BSCPHYMJ602	Digital Electronics	3 - 0 - 4	5		30	15	20	35	100		
	PHYSICS MAJOR		MAJOR	BSCPHYMJ603	Thermodynamics and Statistical Mechanics	4 - 1 - 0	5			30		70	100		
	PHYSICS MAJOR		MAJOR	BSCPHYMJ603	Condensed Matter I and Atomic and Molecular Physics	4 - 1 - 0	5			30		70	100		
	Summer Internship		SI	BSCPHYSI601	SI-1	0 - 0 - 4	2		15		35		50		
Total Credit and Marks			TOTAL CREDIT					126	TOTAL MARKS					2350	
Students who want to undertake 3-year UG programme will be awarded UG Degree in the relevant Discipline / Subject upon securing 126 credits															
4 YEARS DEGREE WITH HONOURS	VII	PHYSICS MAJOR		MAJOR	BSCPHYMJ-701	Statistical Mechanics-II	4 - 1 - 0	5	25		30		70	100	
		PHYSICS MAJOR		MAJOR	BSCPHYMJ-702	Quantum mechanics-II	4 - 1 - 0	5			30		70	100	
		PHYSICS MAJOR		MAJOR	BSCPHYMJ-703	Condensed matter physics-II	4 - 1 - 0	5			30		70	100	
		PHYSICS MAJOR		MAJOR	BSCPHYMJ-704	Indian Knowledge System (choose from pool)	4 - 1 - 0	5			30		70	100	
		MINOR COURSE- Choose from the Pool of Minor Courses offered in 7th Semester by the other Disciplines		MINOR	See Pool	Modern Physics I	4 - 1 - 0	5			30		70	100	
	VIII	PHYSICS MAJOR	Atleast 4 Major papers from the pool will be provided	MAJOR	BSCPHYMJ-801	MJC-18	4 - 1 - 0	5	22		30		70	100	
		PHYSICS MAJOR		MAJOR	BSCPHYMJ-802	MJC-19	3 - 1 - 0	4			30		70	100	
		PHYSICS MAJOR		MAJOR	BSCPHYMJ-803	MJC-20	3 - 1 - 0	4			30		70	100	
		PHYSICS MAJOR		MAJOR	BSCPHYMJ-804	MJC-21	3 - 1 - 0	4			30		70	100	
		MINOR COURSE- Choose from the Pool of Minor Courses offered in 8th Semester by the other Disciplines		MINOR	See Pool	Modern Physics II	4 - 1 - 0	5			30		70	100	
Total Credit and Marks			TOTAL CREDIT					173	TOTAL MARKS					3350	

Students will be awarded UG Degree (Honours) in the relevant Discipline / Subject provided they secure 173 credits															
4 YEARS DEGREE WITH HONOURS WITH RESEARCH	VII	PHYSICS MAJOR		MAJOR	BSCPHYMJ-701	Statistical Mechanics-II	4 - 1 - 0	5	25		30		70	100	500
		PHYSICS MAJOR		MAJOR	BSCPHYMJ-702	Quantum mechanics-II	4 - 1 - 0	5			30		70	100	
		PHYSICS MAJOR		MAJOR	BSCPHYMJ-703	Condensed matter physics-II	4 - 1 - 0	5			30		70	100	
		PHYSICS MAJOR		MAJOR	BSCPHYMJ-704	Indian Knowledge System (choose from pool)	4 - 1 - 0	5			30		70	100	
		MINOR COURSE- Choose from the Pool of Minor Courses offered in 7th Semester by the other Disciplines		MINOR	See Pool	Modern Physics I	4 - 1 - 0	5			30		70	100	
	VIII	PHYSICS MAJOR		MAJOR	BSCPHYMJ-801	MJC-18	4 - 1 - 0	5	22		30		70	100	500
		RESEARCH PROJECT / DISSERTATION		RP	BSCPHYRP-801	RP-1	0 - 0 - 24	12			180		120	300	
		MINOR COURSE- Choose from the Pool of Minor Courses offered in 8th Semester by the other Disciplines		MINOR	See Pool	Modern Physics II	4 - 1 - 0	5			30		70	100	
	Total Credit and Marks			TOTAL CREDIT					173	TOTAL MARKS					3350
	Students will be awarded UG Degree (Honours) with Research in the relevant Discipline / Subject provided they secure 173 credits														
Abbreviations: MJC= Major (Core); AE= Ability Enhancement; AECC= Ability Enhancement Compulsory Course; MNC= Minor (Core); SE= Skill Enhancement; SEC= Skill Enhancement Course; MD= Multidisciplinary Course; SI - Summer Internship; RP= Research Project; VAC= Value Added Course; CA= Continuous Assessment, ESE= End Semester Examination, L= Lecture Hour; T= Tutorial Hour and P= Practical Hour/ Field Work and NA= Not Applicable															
Note: Minor Courses (MNC) : Student of a particular UG Course will choose from the Pool of Minor Courses offered by disciplines other than the major discipline opted by the student. The student is required to opt the same Minor Course (designed for 2nd semester) which he had opted in 1st semester ie. the student will continue studying the same minor course, opted in the 1st semester. Explanation: If a student of PHYSICS Major, opts for a Minor Course offered by Chemistry in 1st semester then that student is required to continue with the corresponding Minor Course offered by Chemistry for 2nd semester as Minor Course in the 2nd semester.															

SEMESTER-VIII	POOL (Any four):	
	MJC-18	1. Laser and non-linear optics (4-1-0)
	MJC-19	2. Nano-materials and applications (4-1-0)
		3. Advanced electronics (3-0-4)
	MJC-20	4. Astrophysics (4-1-0)
		5. GTR and Cosmology (4-1-0)
	MJC-21	6. Communication System (3-0-4)
		7. Bio-Physics (3-0-4)
		8. Plasma Physics (3-0-4)
		9. Microwave devices and applications (3-0-4)
		10. Computational Physics (3-0-4)
		11. Particle Physics and Phenomenology (4-1-0)
		12. Quantum Field Theory (4-1-0)
		13. Medical Physics (4-1-0)

SEC
1. Computer oriented Numerical Analysis
2. Programming in C language/ Fortran/Python/Scilab
3. Electrical Circuits and network skill
4. Basic Instrumentation skills.
5. Scientific writing and documentation.

Semester wise Pool of Multidisciplinary Courses offered by this Discipline for other Disciplines

Discipline	Semester	Course Name		Course Type	Course Code	Course Details	L - T - P	Course Credit	Sem Credit	CA Marks		ESE Marks		Total Marks	Sem Marks
										Practical	Theoretical	Practical	Theoretical		
MULTI DISCIPLINARY	I	(Any One)	Physical Science((From Physics)		MDC101	MD-1	3 - 0 - 0	3	NA		15		35	50	
			E-Commerce(From BBA)		MDC102		3 - 0 - 0				15		35		
			Human Rights(From Political Science)		MDC103		3 - 0 - 0				15		35		
			Disaster Management (From Geography)		MDC104		3 - 0 - 0				15		35		
			Fitness And Wellness (From Physical Education)		MDC105		3 - 0 - 0				15		35		
			Application Of Bio-Science (From Zoology)		MDC106		3 - 0 - 0				15		35		
			Film Appreciation (From English)		MDC107		3 - 0 - 0				15		35		
			Accounting For All (From Commerce)		MDC108		3 - 0 - 0				15		35		
			History Of Ancient Bengal (From History)		MDC109		3 - 0 - 0				15		35		
			Bangla Sahitya O Sanskriti(From Bengali)		MDC110		3 - 0 - 0				15		35		
			Money And Banking (From Economics)		MDC111		3 - 0 - 0				15		35		
			Patrakarita (From Hindi)		MDC112		3 - 0 - 0				15		35		
			Business Mathematics (Mathematics)		MDC113		3 - 0 - 0				15		35		
			Indian Society (From Sociology)		MDC114		3 - 0 - 0				15		35		
			Yoga For Daily Life (Philosophy)		MDC115		3 - 0 - 0				15		35		
			Electronic Measurements (Electronics)		MDC116		3 - 0 - 0				15		35		
			Information And Communication Technology From Computer Sc)		MDC117		3 - 0 - 0				15		35		
			Introduction To Local Flora (Dept Of Botany)		MDC118		3 - 0 - 0				15		35		
			Information And Media Literacy		MDC119		3 - 0 - 0				15		35		
	II	(Any One)	Mathematical Science (From Mathematics)		MDC201	MD-2	3 - 0 - 0	3	NA		15		35	50	
			Business Environment (From BBA)		MDC202		3 - 0 - 0				15		35		
			Basic Statistics (Statistics)		MDC203		3 - 0 - 0				15		35		
			Cultural History of Bengal (From History)		MDC204		3 - 0 - 0				15		35		
			Personal Finance (From Commerce)		MDC205		3 - 0 - 0				15		35		
			Nutrition And Public Health (From Nutrition)		MDC206		3 - 0 - 0				15		35		
			Educational Philosophy (From Education)		MDC207		3 - 0 - 0				15		35		
			Stress Management (From Psychology)		MDC208		3 - 0 - 0				15		35		
			Social Media and Cyber Awareness (From Computer Science)		MDC209		3 - 0 - 0				15		35		
			Adhunik Bangla Sahitya (From Bengali)		MDC210		3 - 0 - 0				15		35		
			Nazrul Sangeet (Nazrul Sangeet)		MDC211		3 - 0 - 0				15		35		
			E-Waste Management (Electronics)		MDC212		3 - 0 - 0				15		35		
			Chemical Science (Chemistry)		MDC213		3 - 0 - 0				15		35		
			Critical Survey of Sanskrit Language (Sanskrit)		MDC214		3 - 0 - 0				15		35		
			Asnaf- E -Adab (Dept of Urdu)		MDC215		3 - 0 - 0				15		35		
			Anuvad Vigyan (Deptt. Of Hindi)		MDC216		3 - 0 - 0				15		35		
			Herbal Home Remedies (Dept of Botany)		MDC217		3 - 0 - 0				15		35		
			III		(Any One)		Bharatavarsha—A Land of Rare Natural Endowments (From Geography)				MDC301	MD-3	3 - 0 - 0		
	The Vedangas and Other Streams of Indian Knowledge System (From Sanskrit)	MDC302		3 - 0 - 0			15		35						
	Indian Astronomy (From Physics)	MDC303		3 - 0 - 0			15		35						
	Indian Health Sciences (From Zoology)	MDC304		3 - 0 - 0			15		35						
	Indian Mathematics (From Mathematics)	MDC305		3 - 0 - 0			15		35						
	Indian Education (From Education)	MDC306		3 - 0 - 0			15		35						
Indian Polity and Economy (From Political Sc)	MDC307	3 - 0 - 0				15		35							
Methodology Of Indian Knowledge System (Philosophy)	MDC308	3 - 0 - 0		15		35									

Pool of Communication Courses offered as Ability Enhancement Courses in the SEMESTER-I															
Discipline	Semester	Course Name		Course Type	Course Code	Course Details	L - T - P	Course Credit	Sem Credit	CA Marks		ESE Marks		Total Marks	Sem Marks
										Practical	Theoretical	Practical	Theoretical		
English/MIL Communication	I	English Communication	(Any One)	AE	AECE101	AEC-1	4 - 0 - 0	4	NA		15		35	50	NA
		Bengali Communication			AECB101		4 - 0 - 0				15		35		
		Hindi Communication			AECH101		4 - 0 - 0				15		35		
		Urdu Communication			AECU101		4 - 0 - 0				15		35		
Pool of Value Added Courses offered in the SEMESTER-IV															
Discipline	Semester	Course Name		Course Type	Course Code	Course Details	L - T - P	Course Credit	Sem Credit	CA Marks		ESE Marks		Total Marks	Sem Marks
										Practical	Theoretical	Practical	Theoretical		
VALUE ADDED	IV	Yoga And Health (From Physiology)	(Any One)		VAC401	VAC-2	4 - 0 - 0	4	NA		15		35	50	NA
		Social Values and Ethics (From Philosophy)			VAC402		4 - 0 - 0				15		35		
		Digital And Technological Solutions (From Computer Science)			VAC403		4 - 0 - 0				15		35		
		Understanding India (From History)			VAC404		4 - 0 - 0				15		35		
		Sustainable Development: Issues And Challenges (From Economics)			VAC405		4 - 0 - 0				15		35		
		Goods And Services Tax (From Commerce)			VAC406		4 - 0 - 0				15		35		
		Basics of Indian Constitution (From Political Science)			VAC407		4 - 0 - 0				15		35		