# Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, CHHATRAPATI SAMBHAJINAGAR.



#### CIRCULAR NO.SU/Sci./College/NEP-2020/84/2024

It is hereby inform to all concerned that, In continuation circular No. SU. /Revised B.Sc. Structure/NEP-2020/70/2024/23856-64 dated 19.03.2024, recommended by the Board of Deans, the Academic Council at its meeting held on 08 April 2024 has accepted **the Revised B.Sc. Course**Structure as per direction by the State Government dated on 13 March 2024 under the Faculty of Science & Technology as per National Education Policy – 2020 and run at the Affiliated Colleges, Dr.Babasaheb Ambedkar Marathwada University as appended herewith.

This is effective from the Academic Year 2024-25 and onwards.

All concerned are requested to note the contents of this circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus, \*
Chhatrapati Sambhajinagar \*
-431 004. \*
REF.No. SU/Sci./2024/26490-98 \*
Date:- 20.05.2024. \*\*\*\*

Deputy Registrar, Academic Section.

#### Copy forwarded with compliments to :-

- 1] **The Principal of all concerned Colleges,** Dr. Babasaheb Ambedkar Marathwada University,
- 2] The Director, University Network & Information Centre, UNIC, with a request to upload this Circular on University Website. Copy to:-
- 1] The Director, Board of Examinations & Evaluation, Dr.Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar.
- 2] The Section Officer,[B.Sc.Unit] Examination Branch, Dr.Babasaheb Ambedkar Marathwada University,Chhatrapati Sambhajinagar.
- 3] The Programmer [Computer Unit-1] Examinations, Dr.Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar.
- 4] The Programmer [Computer Unit-2] Examinations, Dr.Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar.
- 5] The In-charge, [E-Suvidha Kendra], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar.
- 6] The Public Relation Officer, Dr.Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar.
- 7] The Record Keeper, Dr.Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar.

# Dr. Babasaheb Ambedkar Marathwada University Chhatrapati Sambhajinagar- 431001



## **B.Sc. Degree Programme**

(Three Year / Four Years (Hons) /Four Years (Hons with Research)

# **Course Structure**

(Revised)

( AS PER NEP-2020)

Subject (Major): .....

Effective from 2024-25



# Course Structure, Template of Curriculum And Coding Scheme

#### **PREFACE**

As we stand on the threshold of a new era in education, the dawn of the National Education Policy 2020 illuminates our path toward a holistic, inclusive, and progressive educational landscape. The Bachelor of Science (B. Sc.) curriculum outlined herein reflects the ethos and aspirations of this transformative policy, aiming to equip learners with the knowledge, skills, and values necessary to thrive in the dynamic world of the 21st century.

At its core, the National Education Policy 2020 envisions an educational framework that is learner-centric, multidisciplinary, and geared towards fostering creativity, critical thinking, and innovation. It emphasizes the integration of knowledge across disciplines, breaking down traditional silos to encourage holistic understanding and application of concepts. The Bachelor of Science (B. Sc.) curriculum embodies these principles by offering a diverse array of courses spanning various scientific domains, while also incorporating interdisciplinary studies to nurture well-rounded graduates capable of addressing complex challenges with agility and insight.

Furthermore, the curriculum is designed to promote experiential learning, research, and handson exploration, recognizing the importance of practical engagement in deepening understanding and cultivating real-world skills. Through laboratory work, field experiences, internships, and project-based learning opportunities, students will have the chance to apply theoretical knowledge in practical settings, develop problem-solving abilities, and cultivate a spirit of inquiry and discovery.

Integral to the National Education Policy 2020 is the commitment to inclusivity, equity, and access to quality education for all. The Bachelor of Science (B. Sc.) curriculum reflects this commitment by embracing diversity in perspectives, backgrounds, and experiences, and by fostering an inclusive learning environment where every student feels valued, supported, and empowered to succeed.

Moreover, the curriculum emphasizes the cultivation of ethical values, social responsibility, and global citizenship, instilling in students a sense of accountability towards society and the environment. By integrating courses on ethics, sustainability, and social sciences, the Bachelor of Science (B. Sc.) program aims to produce graduates who are not only proficient in their respective fields but also compassionate, ethical leaders committed to making a positive impact on the world.

As we embark on this journey of educational transformation guided by the National Education Policy 2020, the Bachelor of Science (B. Sc.) curriculum stands as a testament to our collective vision of a more equitable, inclusive, and enlightened society. It is our hope that through rigorous academics, innovative pedagogy, and unwavering dedication to excellence, we can inspire the next generation of scientists, scholars, and change-makers to realize their full potential and contribute meaningfully to the advancement of knowledge and the betterment of humanity.

# Structure of B. Sc. (Three / Four Years Honours / Honours with Research Degree) Programme with Multiple Entry and Exit Options

Subject (Major): .....

#### BSc First Year: 1st Semester

Course Type	Course Code	Examination Code	Course Name	Teaching ( Hrs / W		Credits A	ssigned	Total Credits
	i Stankaje Indiakasa	( To be given by respective BoS)		Theory	Practical	Theory	Practical	
Major ( Core) M1 Mandatory DSC	SUB/DSC/T /100		Theory Course	2		2	-27 - ya.	2+2 = 4
	SUB/DSC/P /126		Practical based on SUB/DSC/T/100		4		2	
Major ( Core) M2 Mandatory DSC	SUB/DSC/T /101		Theory Course	2		2		2+2 = 4
	SUB/DSC/P /127		Practical based on SUB/DSC/T/101	31997	4		2	
Major ( Core) M3 Mandatory DSC	SUB/DSC/T /102		Theory Course	2		2		2+2 = 4
	SUB/DSC/P /128		Practical based on SUB/DSC/T/102		4		2	
Generic / Open Elective ( GE/OE) (Choose any one from pool of courses) It should be chosen compulsorily from the faculty other than that of Major	SUB/GE/ OE/T/100		To be chosen from other faculty	2		2		2
SEC	SUB/SEC/T		Theory Course	1		1		
( Skill Enhancement Courses) (Choose any one from	/100 SUB/SEC/T /101		Theory Course	1		1	A 1 124	1+1=2
SUB/SEC/T/100 and SUB/SEC/T/101 and its corresponding	SUB/SEC/P /126		Practicals based on SUB/SEC/T/100		2	ing digital	1	
Practicals)	SUB/SEC/P /127		Practicals based on SUB/SEC/T/101		2		1	
	SUB/AEC/ T/100	tropic di dia	English ( Common for all the faculty)	2		2		
AEC, VEC, IKS	SUB/IKS/T /101		Choose any one from pool of courses	2		2	1 - 1 -	2+2 =4
OJT/ FP/CEP/CC/RP	SUB/CC/P/ 126		Health and Wellness ( Common for all the faculty)		4		2	2
				13	18	13	09	22

SUB/GE/ OE/T/100: This is a 2 credit theory course to be designed for other faculty

BSc First Year: 2<sup>nd</sup> Semester

Course Type	Course Code	Examination Code	Course Name	Teaching ( Hrs / W		Credits A	ssigned	Total Credits
	1. 1.	( To be given by respective BoS)	ALE THE TOTAL TOTA	Theory	Practical	Theory	Practi cal	
Major ( Core) M1 Mandatory DSC	SUB/ DSC/T/ 150		Theory Course	2		2		2+2 = 4
	SUB/DSC/P/ 176		Practical based on SUB/ DSC/T/150	-	4		2	
Major ( Core) M2 Mandatory DSC	SUB/DSC/T/ 151		Theory Course	2	E-1051	2		2+2 = 4
	SUB/DSC/P/ 177		Practical based on SUB/DSC/T/151		4		2	
Major ( Core) M3 Mandatory DSC	SUB/DSC/T/ 152	in AF in to	Theory Course	2	Thail	2		2+2 = 4
	SUB/DSC/P/ 178		Practical based on SUB/DSC/T/152		4		2	
Generic / Open Elective ( GE/OE) (Choose any one from pool of courses) It should be chosen compulsorily from the faculty other than that of Major	SUB/GE/OE/ T/ 150		To be chosen from other faculty	2		2		2
VSC ( Vocational Skill	SUB/VSC/T/ 150	Federal	Theory Course	1		1		1+1=
Courses) (Choose any one from	SUB/VSC/T/ 151		Theory Course	1		1		2
SUB/VSC/T/150 and SUB/VSC/T/151) and	SUB/VSC/P/ 176		Practicals based on SUB/VSC/T/150		2		1	
corresponding Practicals	SUB/VSC/P/ 177		Practicals based on SUB/VSC/T/151		2		1	
AEC, VEC, IKS	SUB/AEC/T/ 150	Fallscon Me	Modern Indian Language (MIL-1) ( Choose any one from pool of language courses )	2		2		2+2 =4
	SUB/VEC/T /151		Constitution of India ( Common for all the faculty)	2		2		
OJT/ FP/CEP/CC/RP	SUB/CC/P/ 176		Yoga Education / Sports and Fitness ( Common for all the faculty)		4		2	2
	Architecture	. arow sincipal	L. Barther Lawren	13	18	13	09	22

Exit Option : Award of UG Certificate in 3 Majors with 44 credits and an additional 4 credits of core NSQF course / Internship OR continue with Major and Minor

SUB/GE/OE/T/150: This is a 2 credit theory course to be designed for other faculty

Students will have to choose any three subjects as a Major 1, Major 2, Major 3, from Basket 1 under the Faculty of Science and Technology.

Students will be having three subject options of equal credits (instead of Major and / or minor verticals) in the first year. Students will have to select / declare choice of one subject as a major subject in the beginning of second year out of three major options M1, M2 and M3 (which were opted in the first year).

#### Detailed Illustration of Courses included in 1st and 2nd semester:

1) Major (Core) subject are mandatory.

SUB/DSC/T/100: This is a 2 credit theory course corresponding to Major (M1) (core) subject SUB/DSC/P/126: This is a 2 credit practical course based on SUB/DSC/T/100 SUB/DSC/T/101: This is a 2 credit theory course corresponding to Major (M2) (core) subject SUB/DSC/P/127: This is a 2 credit practical course based on SUB/DSC/T/101 SUB/DSC/T/102: This is a 2 credit theory course corresponding to Major (M3) (core) subject SUB/DSC/P/128: This is a 2 credit practical course based on SUB/DSC/T/102 SUB/DSC/T/150: This is a 2 credit theory course corresponding to Major (M1) (core) subject SUB/DSC/P/176: This is a 2 credit practical course based on SUB/DSC/T/150 SUB/DSC/T/151: This is a 2 credit theory course corresponding to Major (M2) (core) subject SUB/DSC/P/177: This is a 2 credit practical course based on SUB/DSC/T/151 SUB/DSC/T/152: This is a 2 credit theory course corresponding to Major (M3) (core) subject SUB/DSC/T/152: This is a 2 credit practical course based on SUB/DSC/T/152

2) Generic / Open Elective (GE/OE): (Needs to be chosen (any one) from pool of courses available at respective college). These courses should be chosen compulsorily from faculty other than that of Major.

SUB/GE/OE/T/100: This is a 2 credit theory course should be chosen compulsorily from faculty other than that of Major.

SUB/GE/OE/T/150: This is a 2 credit theory course should be chosen compulsorily from faculty other than that of Major.

3) SEC (Skill Enhancement Courses): Choose any one from pool of courses. These courses needs to be designed to enhance the technical skills of the students in specific area.

SUB/SEC/T/100: This is a 1 credit theory course to enhance the technical skills of the students in specific area.

SUB/SEC/P/126: This is a 1 credit practical course based on SUB/SEC/T/100

SUB/SEC/T/101: This is a 1 credit theory course to enhance the technical skills of the students in specific area.

SUB/SEC/P/127: This is a 1 credit practical course based on SUB/SEC/T/101

4) VSC (Vocational Skill Courses): Choose any one from pool of courses. These courses should be based on Hands on Training corresponding to Major (core) subject.

SUB/VSC/T/150: This is a 1 credit theory course based Hands on Training corresponding to Major (core) subject.

SUB/VSC/P/176: This is a 1 credit practical course based on SUB/VSC/T/150

SUB/VSC/T/151: This is a 1 credit theory course based Hands on Training corresponding to Major (core) subject.

SUB/VSC/P/177: This is a 1 credit practical course based on SUB/VSC/T/151

5) **AEC** (Ability Enhancement courses): The focus of these courses should be based on linguistic and communication skills. It will be common for all the faculty.

SUB/AEC/T/100: English

This is a 2 credit theory course based on linguistic proficiency. It will be common for all the faculty.

SUB/AEC/T/150: Modern Indian Language MIL-1 (Hindi/ Marathi/ Pali & Buddhism/ Sanskrit/ Urdu)

This is a 2 credit theory course based on linguistic proficiency. It will be common for all the faculty.

6) **IKS** (Indian Knowledge System): The courses related to traditional and ancient culture of India will be included in this section. The respective college will have to choose one of the courses from the pool of courses designed by the University.

SUB/IKS/T/101: To be chosen from the pool of courses designed by the University
This is a 2 credit theory course based on Indian Knowledge System. It will be common for all the faculty

7) VEC (Value Education Courses): The courses such as understanding India, Environmental Science / Education, Digital and Technological solutions etc will be part of Value Education Courses.

SUB/VEC/T/151: Constitution of India

This is a 2 credit theory course based on value education. It will be common for all the faculty

8) CC (Curricular Courses): The courses such as Health and wellness, Yoga education, Sports and Fitness, Cultural activities, NSS/NCC, Preforming Arts.

SUB/CC/P/126: Health and Wellness

This is a 2 credit practical course based on Co-curricular activities. It will be common for all the faculty

SUB/CC/P/176: Yoga education / Sports and Fitness

This is a 2 credit practical course based on Co-curricular activities, It will be common for all the faculty

#### BSc Second Year: 3rd Semester

Students will have to select / declare choice of **one major subject** and **one minor subject** from three major options M1, M2 and M3 (which were opted in the first year)

Course Type	Course Code	Examination Code	Course Name	Teaching ( Hrs / W		Credits A	ssigned	Total Credits
	1 200-2	( To be given by respective BoS)	A DESCRIPTION OF THE PARTY OF T	Theory	Practical	Theory	Practical	
Major ( Core) Mandatory DSC	SUB/DSC/T/ 200		Theory Course	2		2		2+2+2+2 = 08
	SUB/DSC/T/ 201		Theory Course	2		2		
	SUB/DSC/P/ 226		Practical based on SUB/DSC/T/ 200		4	6-8016	2	
	SUB/DSC/P/ 227		Practical based on SUB/DSC/T/ 201		4		2	
Minor (Choose any two from pool of courses) It is from different	SUB/Mn/T/ 200	7 10 15 15	To be chosen from other discipline of same faculty	2		2		2+2 = 04
discipline of the same faculty	SUB/Mn/T/ 201		To be chosen from other discipline of same faculty	2	¥	2		
Generic / Open Elective ( GE/OE) (Choose any one from pool of courses)	SUB/GE/OE/		To be chosen from other faculty	2		2		02
It should be chosen compulsorily from the faculty other than that of Major	T/200		, alloca or k	on a tree	1000			
VSC ( Vocational Skill	SUB/VSC/T/ 200		Theory Course	1		1		
Courses) (Choose any one from	SUB/VSC/T/ 201		Theory Course	1	111	1		1+1 =02
SUB/VSC/T/ 200 and SUB/VSC/T/ 201) and	SUB/VSC/P/ 226		Practicals based on SUB/VSC/T/ 200		2		1	
corresponding Practicals	SUB/VSC/P/ 227		Practicals based on SUB/VSC/T/ 201		2		1	
AEC, VEC, IKS	SUB/AEC/T/ 200		English ( Common for all the faculty)	2		2		2 + 2 = 04
	SUB/VEC/T/ 201		Environmental Studies	2	#   B] #   E	2		
OJT/ FP/CEP/CC/RP	SUB/CC/P/ 226		Cultural Activity / NSS,NCC ( Common for all the faculty)		4		2	02
				15	14	15	07	22

#### **Minor Courses for other Discipline**

 $SUB/Mn/T/\ 200$  : This is a 2 credit theory course to be designed for other discipline

SUB/Mn/T/201: This is a 2 credit theory course to be designed for other discipline

Generic /Open Elective Courses for other faculty

SUB/GE/OE/T/200: This is a 2 credit theory course to be designed for other faculty

#### BSc Second Year: 4th Semester

Course Type	Course Code	Examination Code ( To be	Course Name	Teaching ( Hrs / W		Credits A	ssigned	Total Credits
		given by respective BoS)		Theory	Practical	Theory	Practical	
Major ( Core) Mandatory DSC	SUB/DSC/T/ 250		Theory Course	2		2		2+2+2+2 = 08
	SUB/DSC/T/ 251		Theory Course	2		2		
	SUB/DSC/P/		Practical based on					
	276		SUB/DSC/T/ 250		4		2	10
	SUB/DSC/P/ 277		Practical based on SUB/DSC/T/ 251		4		2	
Minor (Choose any two from pool of courses)  It is from different discipline of the	SUB/Mn/T/ 250		To be chosen from other discipline of same faculty	2		2		2+2 = 04
same faculty	SUB/Mn/T/ 251		To be chosen from other discipline of same faculty	2		2		
Generic / Open Elective ( GE/OE) (Choose any one from pool of courses) It should be chosen compulsorily from the faculty other than that of Major	SUB/GE/OE/ T/250		To be chosen from other faculty	2		2		02
SEC ( Skill Enhancement	SUB/SEC/T/ 250		Theory Course	1		1		
Courses) (Choose any one from	SUB/SEC/T/ 251	n color the	Theory Course	1		1		1+1 =02
SUB/SEC/T/ 250 and SUB/SEC/T/ 251) and	SUB/SEC/P/ 276	7744774	Practicals based on SUB/SEC/T/ 250		2		1	
corresponding Practicals	SUB/SEC/P/ 277		Practicals based on SUB/SEC/T/ 251		2		1	
AEC, VEC, IKS	SUB/AEC/T/ 250		Modern Indian Language (MIL-2) ( Choose any one from pool of language courses )	2		2		02
OJT/ FP/CEP/CC/RP	SUB/FP/P/ 276		Field Project		4		2	2+2= 04
	SUB/CC/P/ 277		(Fine/ Applied/ Visual/ Performing Arts) ( Common for all the faculty)		4		2	
		Value of the latest terminal t	and the thirty j	. 13	18	13	09	22

Exit Option: Award of UG Diploma in major and minor with 88 credits and an additional 4 credits NSQF course (related to major / minor) / Internship during summer vacation OR Continue with Major and Minor

#### **Minor Courses for other Discipline**

SUB/Mn/T/ 250: This is a 2 credit theory course to be designed for other discipline

SUB/Mn/T/ 251: This is a 2 credit theory course to be designed for other discipline

#### Generic /Open Elective Courses for other faculty

SUB/GE/OE/T/250: This is a 2 credit theory course to be designed for other faculty

#### Detailed Illustration of Courses included in 3rd and 4th semester:

1) Major (Core) subject are mandatory.

SUB/DSC/T/200: This is a 2 credit theory course corresponding to Major (core) subject SUB/DSC/T/201: This is a 2 credit theory course corresponding to Major (core) subject SUB/DSC/P/226: This is a 2 credit practical course based on SUB/DSC/T/200 SUB/DSC/P/227: This is a 2 credit practical course based on SUB/DSC/T/201

SUB/DSC/T/250: This is a 2 credit theory course corresponding to Major (core) subject SUB/DSC/T/251: This is a 2 credit theory course corresponding to Major (core) subject SUB/DSC/P/276: This is a 2 credit practical course based on SUB/DSC/T/250 SUB/DSC/P/277: This is a 2 credit practical course based on SUB/DSC/T/251

2) Minor: It is from different discipline of the same faculty

 $SUB/Mn/T/200: This is a 2 credit theory from different discipline of the same faculty \\ SUB/Mn/T/201: This is a 2 credit theory from different discipline of the same faculty \\$ 

 $SUB/Mn/T/250: This is a 2\ credit\ theory\ from\ different\ discipline\ of\ the\ same\ faculty\\ SUB/Mn/T/251: This is a 2\ credit\ theory\ from\ different\ discipline\ of\ the\ same\ faculty$ 

3) Generic / Open Elective (GE/OE): (Needs to be chosen (any one) from pool of courses available at respective college). These courses should be chosen compulsorily from faculty other than that of Major.

SUB/GE/OE/T/200: This is a 2 credit theory course should be chosen compulsorily from faculty other than that of Major.

SUB/GE/OE/T/250: This is a 2 credit theory course should be chosen compulsorily from faculty other than that of Major.

4) VSC (Vocational Skill Courses): Choose any one from pool of courses. These courses should be based on Hands on Training corresponding to Major (core) subject.

SUB/VSC/T/200: This is a 1 credit theory course based Hands on Training corresponding to Major (core) subject.

SUB/VSC/T/201: This is a 1 credit theory course based Hands on Training corresponding to Major (core) subject.

SUB/VSC/P/226: This is a 1 credit practical course based on SUB/VSC/T/200 SUB/VSC/P/227: This is a 1 credit practical course based on SUB/VSC/T/201

5) SEC (Skill Enhancement Courses): Choose any one from pool of courses. These courses should be based on Hands on Training corresponding to Major (core) subject.

SUB/SEC/T/250: This is a 1 credit theory course to enhance the technical skills of the students in specific area.

SUB/SEC/T/251: This is a 1 credit theory course to enhance the technical skills of the students in specific area.

SUB/SEC/P/276: This is a 1 credit practical course based on SUB/SEC/T/250 SUB/SEC/P/277: This is a 1 credit practical course based on SUB/SEC/T/251

6) **AEC** (Ability Enhancement courses): The focus of these courses should be based on linguistic and communication skills.

SUB/AEC/T/200: English

This is a 2 credit theory course based on linguistic proficiency.

SUB/AEC/T/250: Modern Indian Language MIL-2 (Hindi/ Marathi/ Pali & Buddhism/ Sanskrit/ Urdu)

This is a 2 credit theory course based on linguistic proficiency. Students will have to choose one of the above mentioned languages.

7) VEC: Environmental Studies

SUB/VEC/T/201: Environmental Studies

This is 2-credit theory course based on Environmental Studies.

8) FP-1: Field Project:

SUB/FP/P/276: This is a 2 credit course, should be corresponding to Major (core) subject

9) CC (Curricular Courses): The courses such as Health and wellness, Yoga education, Sports and Fitness, Cultural activities, NSS/NCC, Preforming Arts.

SUB/CC/P/226: Cultural Activity / NSS, NCC

This is a 2 credit practical course based on Co-curricular activities. It will be common for all the faculty

SUB/CC/P/277: Fine/ Applied/ Visual/ Performing Arts

This is a 2 credit practical course based on Co-curricular activities. It will be common for all the faculty

#### BSc Third Year: 5th Semester

Course Type	Course Code	Examination Code ( To be	Course Name	Teaching ( Hrs / W		Credits A	ssigned	Total Credits
		given by respective BoS)		Theory	Practical	Theory	Practical	
Major ( Core) Mandatory DSC	SUB/DSC/T/ 300		Theory Course	2		2		2+2+2+ 2= 08
	SUB/DSC/T/ 301	-7/1/L-3(-) 2(08)	Theory Course	2		2		
	SUB/DSC/P/ 326		Practical based on SUB/DSC/T/ 300		4		2 2	
	SUB/DSC/P/ 327		Practical based on SUB/DSC/T/ 301	Links	4		2	
Discipline Specific Electives ( DSE)	SUB/DSE/T/ 300		Theory Course	2	1021 511	2		
(Choose any one from SUB/DSE/T/ 300 and	SUB/DSE/T/ 301		Theory Course	2		2		
SUB/DSE/T/ 301) and corresponding Practicals	SUB/DSE/P/ 326		Practical based on SUB/DSE/T/ 300		4		2	2+2=4
Tracticals	SUB/DSE/P/ 327		Practical based on SUB/DSE/T/ 301		4		2	
Minor (Choose any two from pool of courses)	SUB/Mn/T/ 300		To be chosen from other discipline of same faculty	2	214014	2		2+2=
It is from different discipline of the same faculty	SUB/Mn/T/ 301		To be chosen from other discipline of same faculty	2		2		04
VSC ( Vocational Skill	SUB/VSC/T/ 300		Theory Course	2		2		
Courses) (Choose any one	SUB/VSC/T/ 301		Theory Course	2		2		2+2 =04
from SUB/VSC/T/ 300 and	SUB/VSC/P/ 326		Practicals based on SUB/VSC/T/ 300	A TONO LIN	4	311224	2	1946
SUB/VSC/T/ 301) and corresponding Practicals	SUB/VSC/P/ 327		Practicals based on SUB/VSC/T/ 301		4	\$1 8 T	2	
OJT/ FP/CEP/CC/RP (Choose any one from pool of courses)	SUB/FP/CEP/ P/326		Field Project / community engagement and service		4		2	02
				12	20	12	10	22

#### **Minor Courses for other Discipline**

 $SUB/Mn/T/\,300$  : This is a 2 credit theory course to be designed for other discipline

SUB/DSE/T/ 301: This is a 2 credit theory course to be designed for other discipline

#### BSc Third Year: 6th Semester

Course Type	Course Code	Examination Code ( To be	Course Name	Teaching ( Hrs / W		Credits A	ssigned	Total Credits
		given by respective BoS)		Theory	Practical	Theory	Practical	
Major ( Core) Mandatory DSC	SUB/DSC/T/ 350	is it is	Theory Course	2		2		2+2+2+2- 2 = 10
	SUB/DSC/T/ 351	SECTION OF	Theory Course	2		2		
	SUB/DSC/P/ 376		Practical based on SUB/DSC/T/ 350		4		2	
	SUB/DSC/P/ 377	See Particles of	Practical based on SUB/DSC/T/ 351	Estua	4		2	
	SUB/DSC/T/ 352		IKS-2 (Indian Knowledge System related to Major)	2		2		
Discipline Specific Electives	SUB/DSE/T/ 350		Theory Course	2		2		
( DSE) (Choose any one	SUB/DSE/T/ 351		Theory Course	2		2		
from SUB/DSE/T/ 350	SUB/DSE/P/ 376		Practical based on SUB/DSE/T/ 350		4	- K T -	2	2+2=4
and SUB/DSE/T/ 351 ) and corresponding Practicals	SUB/DSE/P/ 377		Practical based on SUB/DSE/T/ 351		4		2	
Minor (Choose any one from pool of courses) It is from different	SUB/Mn/T/ 350		To be chosen from other discipline of same faculty	2		2		2+2 = 04
discipline of the same faculty	SUB/Mn/T/ 351		To be chosen from other discipline of same faculty	2		2		
OJT/ FP/CEP/CC/RP (Choose any one from pool of courses)	SUB/OJT/P/ 376		On Job Training		8		4	04
				12	20	12	10	22

Exit option: Award of UG degree in Major with 132 credits OR continue with Major and Minor

#### **Minor Courses for other Discipline**

SUB/Mn/T/ 350: This is a 2 credit theory course to be designed for other discipline

 $SUB/Mn/T/\,351$  . This is a 2 credit theory course to be designed for other discipline

#### Detailed Illustration of Courses included in 5th and 6th semester:

1) Major (Core) subject are mandatory.

 $SUB/DSC/T/300: This is a 2 credit theory course corresponding to Major (core) subject \\ SUB/DSC/T/301: This is a 2 credit theory course corresponding to Major (core) subject \\ SUB/DSC/P/326: This is a 2 credit practical course based on SUB/DSC/T/300$ 

SUB/DSC/P/327: This is a 2 credit practical course based on SUB/DSC/T/301

SUB/DSC/T/350: This is a 2 credit theory course corresponding to Major (core) subject SUB/DSC/T/351: This is a 2 credit theory course corresponding to Major (core) subject SUB/DSC/P/376: This is a 2 credit practical course based on SUB/DSC/T/350 SUB/DSC/P/377: This is a 2 credit practical course based on SUB/DSC/T/351 SUB/DSC/T/352 (IKS-2): This is a 2 credit theory course corresponding to Indian Knowledge System related to Major

 Discipline Specific Electives (DSE): (Needs to be chosen any one from pool of courses available at respective college). These courses should be chosen related to Major.

SUB/DSE/T/300: This is a 2 credit discipline specific course (elective) related to Major SUB/DSE/T/301: This is a 2 credit discipline specific course (elective) related to Major SUB/DSE/P/326: This is a 2 credit practical course based on SUB/DSE/T/300

SUB/DSE/P/320: This is a 2 credit practical course based on SUB/DSE/T/301

SUB/DSE/T/350: This is a 2 credit discipline specific course (elective) related to Major SUB/DSE/T/351: This is a 2 credit discipline specific course (elective) related to Major SUB/DSE/D/376. This is a 2 credit practical course based on SUB/DSE/T/350.

SUB/DSE/P/376: This is a 2 credit practical course based on SUB/DSE/T/350 SUB/DSE/P/377: This is a 2 credit practical course based on SUB/DSE/T/351

3) Minor: It is from different discipline of the same faculty

SUB/Mn/T/300: This is a 2 credit theory from different discipline of the same faculty SUB/Mn/T/301: This is a 2 credit theory from different discipline of the same faculty

SUB/Mn/T/350: This is a 2 credit theory from different discipline of the same faculty SUB/Mn/T/351: This is a 2 credit theory from different discipline of the same faculty

10) VSC (Vocational Skill Courses): Choose any one from pool of courses. These courses should be based on Hands on Training corresponding to Major (core) subject.

SUB/VSC/T/300: This is a 1 credit theory course based Hands on Training corresponding to Major (core) subject.

SUB/VSC/T/301: This is a 1 credit theory course based Hands on Training corresponding to Major (core) subject.

SUB/VSC/P/326: This is a 1 credit practical course based on SUB/VSC/T/300 SUB/VSC/P/327: This is a 1 credit practical course based on SUB/VSC/T/301

- 11) SUB/FP/CEP/P/326: Field Project / Community engagement and service: This is a 2 credit practical course related to Field Project / community engagement and service
- 12) SUB/OJT/P/376: This is a 4 credit practical course related to On job Training

## BSc Fourth Year (UG Honours Degree): 7th Semester

Course Type	Course Code	Examination Code ( To be	Course Name	Teaching ( Hrs / W		Credits A	ssigned	Total Credits
		given by respective BoS)		Theory	Practical	Theory	Practical	
Major (Core)	SUB/DSC/T/ 400		Theory Course	2		2		2+2+2+
Mandatory DSC	SUB/DSC/T/ 401	= 50-55	Theory Course	2		2		2 = 08
	SUB/DSC/P 426		Practical based on SUB/DSC/T/ 400		4	0-77	2	
	SUB/DSC/P 427		Practical based on SUB/DSC/T/ 401		4		2	
	SUB/DSC/T/ 402		Theory Course	2		2		
	SUB/DSC/T/ 403		Theory Course	2		2		2+2+
	SUB/DSC/P/ 428		Practical based on SUB/DSC/T/ 402 and SUB/DSC/T/ 403		4		2	2=06
Discipline Specific	SUB/DSE/T/ 400		Theory Course	2		2		
Electives (DSE)	SUB/DSE/T/ 401		Theory Course	2		2		
(Choose any one from SUB/DSE/T/ 400 and	SUB/DSE/P/ 426		Practical based on SUB/DSE/T/ 400		4		2	2+2=04
SUB/DSE/T/ 401) and corresponding Practicals	SUB/DSE/P/ 427		Practical based on SUB/DSE/T/ 401		4		2	
Research Methodology	SUB/RM/T/ 400		Research Methodology	4		4		04
	GALLEY AND THE PARTY	200000000000000000000000000000000000000	ALL PARTERS	14	16	14	08	22

# BSc Fourth Year (UG Honours Degree): 8th Semester

Course Type	Course Code	Examination Code ( To be	Course Name	Teaching ( Hrs / W		Credits A	ssigned	Total Credits
		given by respective BoS)	e den 192 alle den 1	Theory	Practical	Theory	Practical	
Major (Core)	SUB/DSC/T/ 450		Theory Course	2		2		
Mandatory DSC	SUB/DSC/T/ 451		Theory Course	2		2		
	SUB/DSC/P/ 476		Practical based on SUB/DSC/T/ 450		4	1 5 6	2	2+2+2+ 2=08
	SUB/DSC/P/ 477	4 14 11	Practical based on SUB/DSC/T/ 451		4	DATE:	2	
	SUB/DSC/T/ 452		Theory Course	2		2		
	SUB/DSC/T/ 453		Theory Course	2		2		
	SUB/DSC/P/ 478		Practical based on SUB/DSC/T/ 452 and SUB/DSC/T/ 453 and		4		2	2+2+ 2=06
Discipline Specific	SUB/DSE/T/ 450		Theory Course	2		2		7777
Electives (DSE)	SUB/DSE/T/ 451		Theory Course	2		2		
(Choose any one from SUB/DSE/T/ 450 and	SUB/DSE/P/ 476	e yang	Practical based on SUB/DSE/T/ 450	The sale	4	British .	2	2+2=04
SUB/DSE/T/ 451) and corresponding Practicals	SUB/DSE/P/ 477		Practical based on SUB/DSE/T/ 451		4		2	
OJT	SUB/OJT/P/ 476		On job training		8		4	04
				10	24	10	12	22

#### Detailed Illustration of Courses included in 7th and 8th semester:

1) Major (Core) subject are mandatory.

 $SUB/DSC/T/400: This is a 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/401: Thi$ 

SUB/DSC/P/426: This is a 2 credit practical course based on SUB/DSC/T/400 SUB/DSC/P/427: This is a 2 credit practical course based on SUB/DSC/T/401

SUB/DSC/T/402: This is a 2 credit theory course corresponding to Major (core) subject SUB/DSC/T/403: This is a 2 credit theory course corresponding to Major (core) subject

SUB/DSC/P/428: This is a 2 credit practical course based on SUB/DSC/T/402 and SUB/DSC/T/403

 $SUB/DSC/T/450: This is a 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/451: This is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\$ 

SUB/DSC/P/476: This is a 2 credit practical course based on SUB/DSC/T/450 SUB/DSC/P/477: This is a 2 credit practical course based on SUB/DSC/T/451

SUB/DSC/T/452: This is a 2 credit theory course corresponding to Major (core) subject SUB/DSC/T/453: This is a 2 credit theory course corresponding to Major (core) subject

SUB/DSC/P/478: This is a 2 credit practical course based on SUB/DSC/T/452 and SUB/DSC/T/453

 Discipline Specific Electives (DSE): (Needs to be chosen any one from pool of courses available at respective college). These courses should be chosen related to Major.

DSC/DSE/T/400: This is a 2 credit discipline specific course (elective) related to Major DSC/DSE/T/401: This is a 2 credit discipline specific course (elective) related to Major

DSC/DSE/P/426: This is a 2 credit practical course based on DSC/DSE/T/400 DSC/DSE/P/427: This is a 2 credit practical course based on DSC/DSE/T/401

**DSC/DSE/T/450**: This is a 2 credit discipline specific course (elective) related to Major **DSC/DSE/T/451**: This is a 2 credit discipline specific course (elective) related to Major

**DSC/DSE/P/476**: This is a 2 credit practical course based on DSC/DSE/T/450 **DSC/DSE/P/477**: This is a 2 credit practical course based on DSC/DSE/T/451

#### 3) Research Methodology

SUB/RM/T/400: This is a 4 credit theory course based on Research Methodology

#### 4) On Job Training

SUB/OJT/P/476: This is a 4 credit practical course based on On Job Training

## BSc Fourth Year (UG Honours with Research Degree) $:7^{\text{th}}$ Semester

Course Type	Course Code	Examination Code ( To be	Course Name	Teaching (Hrs/W	(Scheme (eek)	Credits A	Assigned	Total Credits
		given by respective BoS)		Theory	Practical	Theory	Practical	
Major ( Core) Mandatory DSC	SUB/DSC/T/ 400		Theory Course	2		2		
	SUB/DSC/T/ 401	5 5 70 m	Theory Course	2		2		2+2+2+2
	SUB/DSC/P/ 426	A Barbarrer	Practical based on SUB/DSC/T/ 400		4		2	+ 2 = 10
	SUB/DSC/P/ 427		Practical based on SUB/DSC/T/ 401		4		2	
	SUB/DSC/T/ 402		Theory Course	2		2		
Discipline Specific Electives ( DSE)	SUB/DSE/T / 400		Theory Course	2		2		
(Choose any one from SUB/DSE/T /	SUB/DSE/T / 401	Towns of the second	Theory Course	2	-	2		2+2=04
400 and SUB/DSE/T / 401)	SUB/DSE/P / 426	A I I I I I I I I I I I I I I I I I I I	Practical based on SUB/DSE/T / 400		4		2	
and corresponding Practicals	SUB/DSE/P / 427	= 4 =	Practical based on SUB/DSE/T / 401		4		2	
Research Methodology	SUB/RM/T/ 400	4	Research Methodology	4		4		04
Research Project	SUB/RP/P/ 426		Research Project-I	17.7	8		4	04
12.02				12	20	12	10	22

## BSc Fourth Year (UG Honours with Research Degree): 8th Semester

Course Type	Course Code	Examination Code ( To be	Course Name	Teaching ( Hrs / W		Credits A	ssigned	Total Credits
		given by respective BoS)		Theory	Practical	Theory	Practical	
Major ( Core) Mandatory DSC	SUB/ DSC/T/ 450		Theory Course	2	ALC: N	2		
	SUB/ DSC/T/ 451		Theory Course	2		2		2+2+2+2
	SUB/ DSC/P/ 476		Practical based on SUB/ DSC/T/ 450		4		2	+ 2 = 10
	SUB/ DSC/P/ 477		Practical based on SUB/ DSC/T/ 451		4		2	
	SUB/ DSC/T/ 452		Theory Course	2		2		
Discipline Specific Electives ( DSE)	SUB/DSE/T / 450		Theory Course	2		2		
(Choose any one from SUB/DSE/T /	SUB/DSE/T / 451		Theory Course	2		2		2+2=04
450 and SUB/DSE/T / 451)	SUB/DSE/P / 476		Practical based on SUB/DSE/T / 450		4		2	
and corresponding Practicals	SUB/DSE/P / 477		Practical based on SUB/DSE/T / 451		4		2	
Research Project	SUB/RP/P / 476		Research Project-II		16		8	08
			Research Degree in Ma	08	28	08	14	22

#### Detailed Illustration of Courses included in 7th and 8th semester:

1) Major (Core) subject are mandatory.

SUB/DSC/T/400 : This is a 2 credit theory course corresponding to Major (core) subject SUB/DSC/T/401 : This is a 2 credit theory course corresponding to Major (core) subject SUB/DSC/P/426 : This is a 2 credit practical course based on SUB/DSC/T/400 SUB/DSC/P/427 : This is a 2 credit practical course based on SUB/DSC/T/401

SUB/DSC/T/402: This is a 2 credit theory course corresponding to Major (core) subject

 $SUB/DSC/T/450\ : This is a 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\ SUB/DSC/T/451\ : This\ is\ a\ 2\ credit\ theory\ course\ corresponding\ to\ Major\ (\ core)\ subject\\$ 

SUB/DSC/P/476 : This is a 2 credit practical course based on SUB/DSC/T/450 SUB/DSC/P/477 : This is a 2 credit practical course based on SUB/DSC/T/451

SUB/DSC/T/452: This is a 2 credit theory course corresponding to Major (core) subject

 Discipline Specific Electives (DSE): (Needs to be chosen any one from pool of courses available at respective college). These courses should be chosen related to Major.

**DSC/DSE/T/400**: This is a 2 credit discipline specific course ( elective) related to Major **DSC/DSE/T/401**: This is a 2 credit discipline specific course ( elective) related to Major

DSC/DSE/P/426: This is a 2 credit practical course based on DSC/DSE/T/400 DSC/DSE/P/427: This is a 2 credit practical course based on DSC/DSE/T/401

**DSC/DSE/T/450**: This is a 2 credit discipline specific course ( elective) related to Major **DSC/DSE/T/451**: This is a 2 credit discipline specific course ( elective) related to Major

**DSC/DSE/P/476**: This is a 2 credit practical course based on DSC/DSE/T/450 **DSC/DSE/P/477**: This is a 2 credit practical course based on DSC/DSE/T/451

3) Research Methodology

SUB/RM/T/400: This is a 4 credit theory course based on Research Methodology

4) Research Project (RP):

SUB/RP/P/426: This is a 4 credit practical course based on Research Project-I

SUB/RP/P/476: This is a 8 credit practical course based on Research Project-II

### General Guidelines for Course Selection

- 1) The Major subject is the discipline or course of main focus, bachelors degree shall be awarded in that discipline / subject.
- 2) Students will have to choose any three subjects as a Major 1, Major 2, Major 3, from **Basket 1** under the Faculty of Science and Technology (based on the available options in the respective college).
- 3) Students will be having three subject options of equal credits (instead of Major and / or minor verticals) in the first year.
- 4) In the beginning of second year, students will have to select / declare choice of one major subject and one minor subject from three major options M1, M2 and M3 (which were opted in the first year)
- 5) Once the students finalize their Major Subject and Minor Subject in the beginning of the second year of the programme, they shall pursue their further education (remaining years of the degree programme) in that particular subject as their Major and Minor subjects. Therefore, from second year onwards curriculum of the Major and Minor subjects shall be different.
- 6) Students are required to select Minor subject from other discipline of the same faculty
- 7) Students are required to select Generic /Open Elective (vertical 3 in the credit framework) compulsorily from the faculty different than that of their Major / Minor subjects (from Basket 2 of other faculty).
- 8) Vocational Skill Courses and Skill Enhancement Courses (VSC and SEC) shall be related to the Major subject
- 9) Curriculum of Ability Enhancement Courses (AEC), Value Education Courses (VEC), Indian Knowledge System (IKS) (Basket 3), and Co-curricular Courses (CC) will be provided by the University separately.

#### Programme Educational Objectives (PEOs):

Programme Educational Objectives (PEOs) for the Bachelor of Science Curriculum under the National Education Policy 2020:

- Mastery of Discipline-Specific Knowledge: Graduates of the Bachelor of Science
  program will demonstrate a deep understanding of fundamental principles, theories, and
  methodologies in their chosen scientific discipline, enabling them to analyze complex
  problems, propose innovative solutions, and contribute to advancements in their field.
- Interdisciplinary Proficiency: Graduates will possess the ability to integrate knowledge
  and skills from multiple scientific disciplines, fostering a holistic approach to problemsolving and innovation. They will be equipped to address multifaceted challenges by
  drawing upon diverse perspectives and methodologies.
- 3. Critical Thinking and Analytical Skills: Graduates will develop strong critical thinking abilities, enabling them to evaluate information rigorously, analyze data effectively, and make informed decisions based on evidence. They will demonstrate proficiency in applying logical reasoning and scientific methods to solve problems and generate new knowledge.
- 4. Leadership and Innovation: Graduates will demonstrate leadership qualities and entrepreneurial mindset, capable of initiating and driving positive change in their organizations and communities. They will exhibit creativity, resilience, and adaptability, harnessing innovation to address complex challenges and seize opportunities for growth and advancement.
- 5. Global Citizenship and Cultural Sensitivity: Graduates will possess a global perspective and cultural sensitivity, recognizing the interconnectedness of diverse communities and the importance of collaboration across borders. They will engage in cross-cultural dialogue, embrace diversity, and contribute to the advancement of knowledge and understanding on a global scale.

These Programme Educational Objectives serve as guiding principles for the Bachelor of Science curriculum, reflecting our commitment to nurturing well-rounded graduates who are prepared to excel in their careers, contribute to society, and lead meaningful lives in a rapidly changing world.

#### Programme Outcomes (POs):

The National Education Policy (NEP) 2020 for India emphasizes several key aspects for Bachelor of Science (B.Sc.) programs, aiming to produce graduates who are not only well-versed in their respective disciplines but also equipped with skills necessary for holistic development and employability. While specific program outcomes may vary between institutions and disciplines within B.Sc. programs, here are some common outcomes aligned with NEP 2020:

- ➤ PO1. The citizenship and society: Apply broad understanding of ethical and professional skill in science subjects in the context of global, economic, environmental and societal realities while encompassing relevant contemporary issues.
- ➤ PO2. Environment and sustainability: Apply broad understanding of impact of science subjects in a global, economic, environmental and societal context and demonstrate the knowledge of, and need for sustainable development.
- ➤ PO3. Ethics: Apply ability to develop sustainable practical solutions for science subject related problems within positive professional and ethical boundaries.
- ➤ **PO4. Individual and team work:** Function effectively as a leader and as well as team member in diverse/ multidisciplinary environments.
- PO5. Communication: Communicate effectively on complex science subject related activities with the scientific community in particular and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- ➤ PO6. Project management and finance: Demonstrate knowledge and understanding of the first principles of science and apply these to one's own work as a member and leader in a team, to complete project in any environment.
- ➤ PO7. Life-long learning: Recognize the need for lifelong learning and have the ability to engage in independent and life-long learning in the broadest context of technological change.

These program outcomes align with the broader goals of NEP 2020 to transform higher education in India and prepare students for the challenges and opportunities of the 21st century. Board of Studies designing B.Sc. curricula are encouraged to incorporate these outcomes into their program objectives and learning outcomes.

#### **Programme Specific Outcomes (PSOs):**

(Programme specific outcomes are discipline / major specific. Different major will have different PSOs. Following is the example of PSOs for Electronics Major. Respective BoS is expected to draft PSOs related to their Major)

PSO1. **Domain knowledge:** Apply the knowledge of electronics fundamental, and advanced areas of Electronics to provide comprehensive solution of problems in complex electronics.

PSO2. **Problem Analysis:** Identify electronics related problems at varied complexity and analyze the same to formulate/ develop substantiated conclusion using first principles of Electronics

PSO3. **Design Development of solutions:** Design/ develop solutions for problems at varied complexity in various areas of Electronics to address changing challenges put forward by market demand/ stakeholder

PSO4. **Conduct Investigation of complex problems:** Use established knowledge and methods to design of experiments, analyze resulting data and interpret the same to provide valid conclusions.

PSO5. **Modern tools:** Create, select, and apply appropriate techniques, resources, and modern electronics and relevant IT tools including prediction and modeling to complex electronics technology related activities with clear understanding of the limitations.

## **Template of Course / Paper Contents:**

(Respective BoS is expected to use following template for syllabus of each course / paper)

T - 1 - 1 ' - 00	TALCALAN	20.11
Fotal Credits: 02 Maximum Marks: 50	Total Contact Ho	ours: 30 Hrs
Learning Objectives	s of the Course:	
	•••••	
v)		
Course Outcomes (	COs):	
ther completion of t	he course, students will be able to -	
,		
	•••••	
iii)		
iv)		
iv)		
iv)		Contact
iv) v)		Contact Hours
v)		Control of the contro
iv) v)		Control of the contro
v)		Hours
iv)		Hours 10 Hrs
v)		Hours
iv)		Hours 10 Hrs
iv)		Hours 10 Hrs
iv)		10 Hrs

3. ..

#### Reference Books:

- 1. Name Authors (as appear on the book), "Title of reference Book", Vol..., Edition, Name of Publisher, Year of Publications
- 2. ..
- 3. ..
- 4. ..

# <u>Basket 1</u>: List of Major subjects in Science (DSC) : Faculty of Science and Technology

Students willing to pursue their bachelors in the **Faculty of Science and Technology** shall choose any three subjects (from the following options) as Major 1, Major 2 and Major 3 (Based on the available options and resources in the respective college).

Please note that during 1<sup>st</sup> and 2<sup>nd</sup> Semester students shall choose any three subjects (from given 07 groups by choosing not more than one subject from any group) as Major 1, Major 2 and Major 3 (Based on the available options and resources in the respective college).

Group No.	Subjects
Group-1	Chemistry
Group-2	Biochemistry
Group-2	Physics
Group-3	Botany
Group-3	Mathematics
Group-4	Zoology
Group-4	Statistics
Group-5	Computer Science
Group-3	Biotechnology
Group-6	Microbiology
Group-o	Electronics
	Agrochemical & Fertilizer
	Analytical Chemistry
	Environmental Science
	Fishery Science
	Geology
	Horticulture
	Industrial Chemistry
	Polymer Chemistry
	Automobile Technology
	Bioinformatics
Group-7	Data Science
Group-7	Forensic Science
	Forensic Science & Cyber Securities
	Home Science
	Information Technology
	Networking And Multimedia
	Non-Conventional And Conventional Energy
	Refrigeration And Air Conditioning
	Workshop Technology
	Computer Application
	Dairy Science & Technology
	Instrumentation Practice

The students from Faculty of Science and Technology will be selecting GE/OE from the Basket 2 of either of other three faculty (i.e i) Faculty of Humanities, ii) Faculty of Commerce and Management iii) Faculty of Interdisciplinary Studies)

#### Basket 2: List of GE/OE Courses: for the students from other Faculty

Students from other three faculty i.e. i) Faculty of Humanities, ii) Faculty of Commerce and Management iii) Faculty of Interdisciplinary Studies may select any one GE/OE course from the following list in respective semester.

#### Basket 2 (for 1st Semester)

Semester	Sr No	BOS / Ad hoc Board proposing the course	Title of the Course
	1	BOS in Botany	Seed Preservation Techniques
	2	BOS in Chemistry	Herbal Chemistry –I Food Safety, Adulterations and Detection
			Plastic Waste Management
	3	BOS in Mathematics	<b>Business Mathematics-I</b>
	4	BOS in Physics	Everyday Physics Differential Equation Artificial Intelligence
1 <sup>st</sup> Semester	5	BOS in Zoology	Vector disease and Management
	6	BOS in Electronics	Electrical Equipment Maintenance-I
	7	BOS in Fishery Science	Endocrinology and Physiology of Fishes
	8	BOS in Microbiology	Microbial Biotechnology
	9	Ad Hoc Board in Statistics	Introduction to Statistics
	10	Ad hoc Board in Industrial Chemistry	<b>General Safety Aspects</b>
	11	Ad hoc Board in Dairy Science & Technology	Goat Farming
		Ad hoc Board in Biotechnology and Bioinformatics	Introduction to Biotechnology Overview of
			Bioinformatics
	13	Ad hoc Board in Biochemistry	Biochemistry of Health and Disease
	14	Ad hoc Board in Home Science	Principles Of Food Processing

	15	Ad Hoc Board in Agrochemical	Introduction to Fertilizers
		Fertilizers, Horticulture, Dry land Agriculture	Indoor Plants and Interior Scalping
	16	Ad hoc Board in Forensic Science	Criminalistics
			Introduction to Forensic Science
	17	Ad Hoc Board in Computer Science	Cyber Security
			Power Point Presentation and AI
Dr. Carlotte		the Continue National States of the Land	Fundamentals of
La			Information Technology
	18	Ad Hoc Board in Networking and Multimedia	Introduction to Google Workspace-Part1
	19	Ad Hoc Board in Environmental Science	Ecology and Ecosystem Management
		Ad hoc Board in Automobile Technology	Introduction of
		/ Workshop Technology / Refrigerator	Automobile
	20	and Air Conditioning	
	21	Ad hoc Board in Geology	Basic Earth Interior & Exterior

# Basket 2 ( for 2<sup>nd</sup> Semester)

Semester	Sr No	BOS / Ad hoc Board proposing the course	Title of the Course
ter togethromen	1	BOS in Botany	Pomology
	2	BOS in Chemistry	Herbal Chemistry -II
	e PAN PA		Dairy Chemistry
2 <sup>nd</sup> Semester			Basic concepts, applications, and Socioenvironmental impact of polymers
	3	BOS in Mathematics	Matrices
	4	BOS in Physics	Physics in Sports
			<b>Differential Calculus</b>
			<b>Semiconductor Devices</b>
	5	BOS in Zoology	Dairy Production Technology
	6	BOS in Electronics	Electrical Equipment Maintenance-II
h =	7	BOS in Fishery Science	Aquatic pollution
	8	BOS in Microbiology	Food Fermentation

31	9	Ad Hoc Board in Statistics	Demography and Vital Statistics
	10	Ad hoc Board in Industrial Chemistry	Industrial Safety Aspects
	11	Ad hoc Board in Dairy Science & Technology	Poultry Farming
	12	Ad hoc Board in Biotechnology and Bioinformatics	Agricultural Biotechnology
		Legislation in Companies with	Introduction to Bioinformatics Software
	13	Ad hoc Board in Biochemistry	<b>Nutrition Science</b>
Enchol III	14	Ad hoc Board in Home Science	<b>Home Based Catering</b>
(N)r. 42)	15	Ad Hoc Board in Agrochemical	Pest and Pesticides
in the second		Fertilizers, Horticulture, Dry land Agriculture	Landscaping and Garden Designing
	16	Ad hoc Board in Forensic Science	Forensic Handwriting Identification
	17	Ad Hoc Board in Computer Science	E-Commerce and E-Contracts
			Technical Writing using Word and AI
			Cyber Security
			E-Commerce
Sign Parity	18	Ad Hoc Board in Networking and Multimedia	Google workspace – part –II
	19	Ad Hoc Board in Environmental Science	Microbial Aspect of Environment
	20	Ad hoc Board in Automobile Technology / Workshop Technology / Refrigerator and Air Conditioning	Two wheeler servicing
Levignang Tevins	21	Ad hoc Board in Geology	Geological land form

## Basket 3: Indian Knowledge System (IKS)

This Basket will have list of Indian Knowledge System (IKS) courses which will be common for all the faculty (Available on university website)

# **Coding Scheme:**

Three letter SUB code is to be given as per the following  $\boldsymbol{Table}\ 1$ 

Table 1

SUB Code	Subject	
BOT	Botany	
CHE	Chemistry	
ANC	Analytical Chemistry	
POC	Polymer Chemistry	
MAT	Mathematics	
PHY	Physics	
NCC	Non-Conventional and Conventional Energy	
INP	Instrumentation Practice	
ZOO	Zoology	
ELE	Electronics	
FIS	Fishery Science	
MIC	Microbiology	
STA	Statistics	
INC	Industrial Chemistry	
DST	Dairy Science & Technology	
BIT	Biotechnology	
BII	Bioinformatics	
BIC	Biochemistry	
HOS	Home Science	
AGF	Agrochemical Fertilizers	
HOR	Horticulture	
FOS	Forensic Science	
FSC	Forensic Science & Cyber Security	
COS	Computer Science	
COA	Computer Application	
INT	Information Technology	
DAS	Data Science	
NEM	Networking and Multimedia	
ENS	Environmental Science	
AUT	Automobile Technology	
WOT	Workshop Technology	
REA	Refrigerator and Air Conditioning	
GEO	Geology	

Three digit codes for various papers /courses of all the semesters will be as below (Table 2 and Table 3). Course codes in the structure are given as per Table 2 and Table 3.

Table 2:

1st Sem	2 <sup>nd</sup> Sem	3 <sup>rd</sup> Sem	4th Sem
Codes will starts from 100 (All vertical codes will start from 100 to accommodate more number of courses)	Codes will starts from 150 (All vertical codes will start from 150 to accommodate more number of courses)	Codes will starts from 200 (All vertical codes will start from 200 to accommodate more number of courses)	Codes will starts from 250 (All vertical codes will start from 250 to accommodate more number of courses)
Major (DSC)	Major (DSC)	Major (DSC):	Major (DSC):
Theory: 100 onwards	Theory: 150 onwards	Theory: 200 onwards	Theory: 250 onwards
Practicals: 126 onwards	Practicals : 176 onwards onwards	Practicals : 226 onwards	Practicals : 276 onwards
Major(DSE):	Major(DSE) :	Major(DSE):	Major(DSE) :
Theory: 100 onwards	Theory: 150 onwards	Theory: 200 onwards	Theory: 250 onwards
Practicals: 126 onwards	Practicals: 176 onwards	Practicals: 226 onwards	Practicals: 276 onwards
Minor: 100 onwards	Minor: 150 onwards	Minor: 200 onwards	Minor: 250 onwards
GE/OE: 100 onwards	GE/OE: 150 onwards	GE/OE: 200 onwards	GE/OE: 250 onwards
SEC/VSC:	SEC/VSC:	SEC/VSC:	SEC/VSC:
Theory: 100 onwards	Theory: 150 onwards	Theory: 200 onwards	Theory: 250 onwards
Practicals: 126 onwards	Practicals: 176 onwards	Practicals: 226 onwards	Practicals: 276 onwards
AEC/VEC/IKS: 100	AEC/VEC/IKS: 150	AEC/VEC/IKS: 200	AEC/VEC/IKS: 250
onwards	onwards	onwards	onwards
OJT/FP/CEP/RP:	OJT/FP/CEP/RP:	OJT/FP/CEP/RP:	OJT/FP/CEP/RP:
Theory: 100 onwards	Theory: 150 onwards	Theory: 200 onwards	Theory: 250 onwards
Practicals: 126 onwards	Practicals: 176 onwards	Practicals: 226 onwards	Practicals: 276 onwards

Table 3:

5 <sup>th</sup> Sem	6th Sem	7th Sem	8th Sem
Codes will starts from 300 (All vertical codes will start from 300 to accommodate more number of courses)	Codes will starts from 350 (All vertical codes will start from 350 to accommodate more number of courses)	Codes will starts from 400 (All vertical codes will start from 400 to accommodate more number of courses)	Codes will starts from 450 (All vertical codes will start from 450 to accommodate more number of courses)
Major (DSC):	Major(DSC):	Major (DSC):	Major(DSC):
Theory: 300 onwards	Theory: 350 onwards	Theory: 400 onwards	Theory: 450 onwards
Practicals: 326 onwards	Practicals: 376 onwards	Practicals: 426 onwards	Practicals: 476 onwards
Major(DSE) :	Major(DSE):	Major(DSE) :	Major(DSE):
Theory: 300 onwards	Theory: 350 onwards	Theory: 400 onwards	Theory: 450 onwards
Practicals: 326 onwards	Practicals: 376 onwards	Practicals: 426 onwards	Practicals: 476 onwards
Minor: 300 onwards	Minor: 350 onwards	Minor: 400 onwards	Minor: 450 onwards
GE/OE: 300 onwards	GE/OE: 350 onwards	GE/OE: 400 onwards	GE/OE: 450 onwards
SEC/VSC:	SEC/VSC:	SEC/VSC:	SEC/VSC:
Theory: 300 onwards	Theory: 350 onwards	Theory: 400 onwards	Theory: 450 onwards
Practicals: 326 onwards	Practicals: 376 onwards	Practicals: 426 onwards	Practicals: 476 onwards
AEC/VEC/IKS: 300 onwards	AEC/VEC/IKS: 350 onwards	AEC/VEC/IKS: 400 onwards	AEC/VEC/IKS: 450 onwards
OJT/FP/CEP/RP:	OJT/FP/CEP/RP:	OJT/FP/CEP/RP:	OJT/FP/CEP/RP:
Theory: 300 onwards	Theory: 350 onwards	Theory: 400 onwards	Theory: 450 onwards
Practicals: 326 onwards	Practicals: 376 onwards	Practicals: 426 onwards	Practicals: 476 onwards

Please note that Table 4 onwards (along with Table 2 and Table 3) will be used to develop a 12 digit code for each paper / course for examination purpose.

**Table 4: Faculty Code** 

<b>Faculty Code</b>	Faculty (1)
Н	Faculty of Humanities
M	Faculty of Commerce and Management
S	Faculty of Science and Technology
I	Faculty of Interdisciplinary Studies

**Table 5: Vertical Code** 

Code	le   ABRIVATION   Specification/Course Type of Papers (		
A	MMC	Major Mandatory /Core Course (DSC)	
В	MEC	Major Electives Course (DSE)	
С	MS	Minor Subject	
D	GE/OE	Generic / Open Electives	
		Skill Enhancement Courses / Vocational Skill	
E	SEC/ VSC	Courses	
F	AEC	Ability Enhancement Courses	
G	VEC	Value Education Courses	
Н	GIKS	Indian Knowledge System (Generic)	
I	SIKS	Indian Knowledge System (Subject specific)	
J	OJT	On Job Training	
K	FP	Field Project	
L	CEP	Community engagement and service	
M	CC	Co-curricular Courses	
N	RM	Research Methodology	
O	RP	Research Project	

**Table 6: Affiliation of Programme Code** 

Affiliation of Programme Code	Affiliation of Programme (3)
D	University Department
C	Affiliated College
M	Model College

**Table 7: Programme Code** 

Programme Code	Programme Name (4-5)	
00	B.Sc.	
01	B.Sc. Computer Science	
02	B.Sc. Information Technology	
03	Bachelor of Computer Application	
04	B.Sc. Biotechnology	
05	B.Sc. Bioinformatics	
06	B.Sc. Forensic Science	
07	B.Sc. Forensic Science and Cyber Security	
08	B.Sc. Networking and Multimedia	
09	B.Sc. Home Science	
10	B.Sc. Automobile Technology	
11	B.Sc. Data Science	
12	B.Sc. Nonconventional and Conventional Energy	

Table 8: Subject Code

Subject Code	Subject (6-7)	
01	Botany	
02	Chemistry	
03	Analytical Chemistry	
04	Polymer Chemistry	
05	Mathematics	
06	Physics	
07	Non-Conventional and Conventional Energy	
08	Instrumentation Practice	
09	Zoology	
10	Electronics	
11	Fishery Science	
12	Microbiology	
13	Statistics	
14	Industrial Chemistry	
15	Dairy Science & Technology	
16	Biotechnology	
17	Bioinformatics	
18	Biochemistry	
19	Home Science	
20	Agrochemical Fertilizers	
21	Horticulture	
22	Forensic Science	
23	Forensic Science & Cyber Security	
24	Computer Science	
25	Computer Application	
26	Information Technology	

27	Data Science	
28	Networking and Multimedia	
29	Environmental Science	
30	Automobile Technology	
31	Workshop Technology	
32	Refrigerator and Air Conditioning	
33	Geology	- 1

Table 9: Paper / Course Code

Paper / Course Code	Course Name (8-10) ( As per Table 2 and Table 3)
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Table 10: Semester Code

Semester No	Semester Code (11)					
First Semester	1					
Second Semester	2					
Third Semester	3					
Fourth Semester	4					
Fifth Semester	5					
Sixth Semester	6					
Seventh Semester	7					
Eighth Semester	8					

Table 11: Theory / Practical Code

Theory / Practical ( Laboratory) CODE	T/P (12)				
T	Theory				
P	Practical ( Laboratory) / Project				
S	Seminar				

# Structure of 12 Digit examination code for each course / paper will be as below

#### (This kind of codes will be given to all the courses) for examination purpose

Faculty Code	Vertical Code ( Major/ Minor etc)	Affiliation Code	Programme Code	Subject	Subject Code		s / Cou	rse	Semester Code	Theory/ Practical/ Seminar code
1	2	3	4 5	6	7	8	9	10	11	12

#### Example:

- 1. Faculty Code (e,g. Science and Technology): S
- 2. Vertical Code (e.g. Major (DSC)): A
- 3. Affiliation Code (e.g. Affiliated College): C
- 4. Programme Code (e.g. B.Sc.): 03
- 5. Subject Code (e.g. Botany): 01
- 6. Paper / Course code (e.g. SUB/DSC/T/100): 100
- 7. Semester Code (1st Semester): 1
- 8. Theory / Practical / Seminar Code (Theory): T

#### For above example 12 digit examination code will be as below

Faculty Vertical Code Code (Major/Minor etc) Affiliation Code Code 1 2 3	Code	Programme Code		Subject Code		Papers / Course code			Semester Code	Theory/ Practical/ Seminar code
	4	5	6	7	8	9	10	11	12	
A	C	0	3	0	1	1	0	0	1	T
	( Major/ Minor etc)	( Major/ Minor etc) 2 3	( Major/ Minor etc) 2 3 4	(Major/ Minor etc) 2 3 4 5	( Major/ Minor etc) 2 3 4 5 6	( Major/ Minor etc) 2 3 4 5 6 7	( Major/ Minor etc) 2 3 4 5 6 7 8	(Major/ Minor etc)  2 3 4 5 6 7 8 9	(Major/ Minor etc)  2 3 4 5 6 7 8 9 10	(Major/ Minor etc)  2 3 4 5 6 7 8 9 10 11

Therefore, a 12 digit examination code will be as below

#### SAC03011001T

This kind of codes can be given to all the courses / papers in the structure by respective BoS.

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