

CHOICE BASED CREDIT SYSTEM

(CBCS)

Guru Jambheshwar University of Science and Technology, Hisar

Scheme and Syllabi
for
(Third Semester Onwards)

Undergraduate Course:

B. SC. PHYSICAL SCIENCES

(PHYSICS/GEOGRAPHY, CHEMISTRY/
ELECTRONICS/ COMPUTER SCIENCE/ COMPUTER
APPLICATIONS, MATHEMATICS)

Under
The Faculty of Physical Sciences and Technology



w.e.f. Academic Session 2018-19

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(Exam-I + Exam-II)

CREDIT BASED CREDIT SYSTEM (CBCS)

Chaudhary Charan Singh University of Science and Technology, Hisar

Scheme and Syllabi
for

Undergraduate Course:
B.Sc. PHYSICAL SCIENCE (PHYSICS,
COMPUTER SCIENCE & MATHEMATICS)

Under
The Faculty of Physical Sciences and Technology



W.e.f. Academic Session 2018-19

CHOICE BASED CREDIT SYSTEM (CBCS)

Guru Jambheshwar University of Science and Technology, Hisar

Scheme and Syllabi
for

CCsL- 104

Core Course-III: COMPUTER FUNDAMENTALS

(Credits: 02, 30 Hrs (2Hrs /week))

Marks for Major Test (External): 80

Marks for Internal Exam: 20

Time: 3 Hours

Expt. secor is required to set nine questions in all. Question no. 1 is compulsory and is based on the entire syllabus consisting of eight to ten short answer type questions each of 2 marks. The remaining eight questions are to be set uniformly having two questions from each unit. The student is required to attempt five questions in all selecting one question from each unit and Quest. no. 1 is compulsory.

UNIT I

Computer Fundamentals:

Introduction to Computers, Characteristics and Limitations of Computers, Evolution of Computers, Classification of Computers, Computer Languages, Computer Programs, structured Programming Concepts

Basic Computer Organization:

Units of a computer, CPU, ALU, Memory Hierarchy, Registers, I/O devices, Mother Board.

UNIT II

Word Processing:

Introduction to MS-Word, Creating & Editing; Formatting Document, Page, Table; Bookmark, Mail Merge, Macros.

Spread Sheets

Introduction to MS-Excel, Creating & Editing Worksheet, Formatting data, Formulas and Functions, Charts, Pivot Tables.

Power Point Presentations:

Creating, Manipulating & Enhancing Slides, Organizational Charts, Animations & Sounds, Inserting Animated Pictures.

UNIT III

Operating Systems:

Introduction to Operating System; Functions of Operating System, Services; Properties; Batch Processing, Multiplexing, Multiprogramming, Interactivity, Distributed environment, Spooling.

Types of Operating system:

Single user and Multiuser, Batch OS, Multiprogramming OS, Multitasking OS, Real-Time

Credit Distribution for B.Sc. programme under Choice Based Credit System (CBCS)

		Core Courses (CC)	Discipline Specific courses(DSC)	Skill Enhancement Courses(SEC)	Total Credits (CC+DSC)	Theory + Practical+SEC
Theory (T): Practical(P)						
	Physics (T)	16	08	2	24	38
	Physics (P)	08	04		12	
	Geography(T)	16	08	2	24	38
	Geography(P)	08	04		10	
	Chemistry(T)	16	08	2	24	38
	Chemistry(P)	08	04		10	
	Electronics(T)	16	08	2	24	38
	Electronics(P)	08	04		10	
	Computer Science(T)	16	08	2	24	38
	Computer Science(P)	08	04		10	
	Computer Applications(T)	16	08	2	24	38
	Computer Applications(P)	06	04		10	
	Mathematics(T)	32	24	2	56	64
	Mathematics(P)	06	--		06	
Language skills		08	--	--	08	08
Awareness program		02	--	--	02	02
Total	PCM/GCsM/PEM/PCsM/ PCaM(T)	60	40	06	100	140
	PCM/GCsM/PEM/PCsM/ PCaM(P)	18	08		26	

Total Credits required to pass the course -140+10=150

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Semester wise Distribution of Credits

		I Sem.	II Sem.	III Sem.	IV Sem.	V Sem.	VI Sem.	Total credits
Language Skills								4
English(4)		2	2	--	--	--	--	4
Hindi(4)		--	--	2	2	--	--	
Awareness program								2
Env.Science(2)		2	--	--	--	--	--	
Subjects								24
Physics (38)	Theory	4	4	4	4	4	4	12
	Practical	2	2	2	2	2	2	2
	SEC	--	--	--	2	--	--	24
Chemistry(38)	Theory	4	4	4	4	4	4	12
	Practical	2	2	2	2	2	2	2
	SEC	--	--	--	--	2	--	2
Mathematics(64)	Theory	8	8	8	8	12	12	56
	Practical	1.5	1.5	1.5	1.5	--	--	6
	SEC	--	--	--	--	--	2	2
Geography(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	--	--	2
Electronics(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	2	--	2
Computer Science(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	--	--	2
Computer applications(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	--	--	2
PCM/GCsM/PEM/PCsM/PCaM	Theory	16	16	16	16	20	20	104
	Practical	5.5	5.5	5.5	5.5	4	4	30
	SEC	--	--	--	2	2	2	06
Total credits/semester (three Subjects)		21.5	21.5	21.5	23.5	22	22	140

Sum
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Aravinda

Note:

- (1) The subject combinations under B.Sc. (Physical Sciences) are :
 - (i) B.Sc. (Physical Sciences: Physics, Chemistry, Mathematics) ✓
 - (ii) B.Sc. (Physical Sciences: Geography, Computer Science, Mathematics)
 - (iii) B.Sc. (Physical Sciences: Physics, Electronics, Mathematics)
 - (iv) B.Sc. (Physical Sciences: Physics, Computer Science, Mathematics) ✓
 - (v) B.Sc. (Physical Sciences: Physics, Computer Applications, Mathematics)
- (2) The scheme and syllabus of Mathematics papers is also implemented to BA (with Mathematics) Courses. However, the marking scheme in case of BA courses (Mathematics Subject) will be same as decided by the concerned Board of Studies/Faculty of Humanities and Social Sciences.
- (3) For the students of B.Sc. Geography, the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Physics is to be replaced by the respective papers of the Geography; for Computer Science, the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Chemistry is to be replaced by respective papers of the Computer Sciences; for Electronics the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Chemistry is to be replaced by respective papers of the Electronics and similarly for Computer Applications, the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Chemistry is to be replaced by respective papers of the Computer Applications as decided by the respective Board of studies/Faculty of Engineering and Technology.
- (4) Definition of Credit:
1 credit=1 Hr. Lecture (L) per week
1 credit= 2 Hrs. Practical (P) per week ✓
2 Hrs. = 3 periods of approx. 40/45 minutes ✓
- (5) Practical examinations (both odd and even semester's practicals of 100 marks each) to be held annually with even semesters. The marks of Odd semester practicals may be reflected in the DMC of Even semester with code and nomenclature, to be shown separately for each semester.
- (6) The distribution of internal assessment marks of 20 is based on the marks obtained by the student in one Minor test of 12 marks to be conducted preferably in the month of November for Odd Semester and in the month of April for Even Semester. A student is required to pass the individual paper with 35% marks overall including internal assessment based on minor test. He may not be given any additional chance for minor test. However, the student also needs to pass the external examination individually with 35% marks. There will be maximum 4 marks for attendance (1 mark for attendance of 71-75%, 2 marks for attendance of 76-80%, 3 marks for attendance of 81-85% and 4 marks for attendance above 85%). The remaining 4 marks are for Extra-curricular activities including assignments.
- (7) The Batches of 20 or more can be opted for various courses as per requirement for all practical purposes by the college/institution. The evaluation of Practical may be distributed as 20% marks for lab record, 50% marks for performance during the examination and 30% marks for Viva Voce examination.] ?
- (8) SWAYAM-MOOCs (Study Webs of Active Learning for young Aspiring Minds-Massive Online Open Courses)/NPTEL(National Programme on Technology Enhanced Learning) can be opted by the candidate either under DSC or SEC for maximum upto 12 credits (Two DSCs or One DSC and one SEC).
- (9) SEC courses: One SEC by Physics department in Forth semester, One SEC has to be offered by Chemistry in fifth semester and One SEC has to be offered by Mathematics in Sixth semester. All SECs will be of 50(Internal):50(External)marks. The internal marks will be based on practical aspect of skill enhancement.]

24/11/19

Alexandra

The consolidated scheme and syllabi of Three Years of B.Sc. (Physical Sciences: Physics/Geography, Chemistry/Electronics/Computer Science/Computer Applications, Mathematics) is as under:

Paper Code	Course opted	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
CXL- 101	Language Skills Compulsory Course-I	English-I	2	2	80	20	100
✓ CPL- 102	Core Course-I (Physics)	Mechanics-I	2	2	80	20	100
✓ CPL- 103	Core Course-II (Physics)	Electricity and Magnetism-I	2	2	80	20	100
CGL- 102	Core Course-I (Geography)	Physical Geography-I	2	2	80	20	100
CGL- 103	Core Course-II (Geography)	Physical Geography-II	2	2	80	20	100
CCl- 104	Core Course-I (Chemistry)	Inorganic Chemistry-I(Atomic structure and Bonding)	2	2	80	20	100
CCl- 105	Core Course-II (Chemistry)	Organic Chemistry-I(General Organic Chemistry and Aliphatic Hydrocarbons)	2	2	80	20	100
CEL- 104	Core Course-I (Electronics))	Network Analysis and Electronic Devices	2	2	80	20	100
CEL- 105	Core Course-II (Electronics))	Analog Electronics	2	2	80	20	100
CCsL- 104	Core Course-I (Computer Science)	Fundamentals of Computer	2	2	80	20	100
CCsL- 105	Core Course-II (Computer Science)	Programming in 'C'	2	2	80	20	100
CCaL- 104	Core Course- I (Computer Applications)	Computer Fundamentals and Operating System	2	2	80	20	100
CCaL- 105	Core Course- II (Computer Applications)	Office Automation Tools	2	2	80	20	100
CML- 106	Core Course-I (Mathematics) ✓	Algebra	4	4	80	20	100
CML- 107	Core Course-I (Mathematics) ✓	Calculus	4	4	80	20	100
CYL- 111	Awareness Program Compulsory Course	Environmental Studies	2	2	80	20	100
✓ CPP- 108*	Practical-I (Physics)	Physics Lab-I	2	4	100	-	100
CGP- 108*	Practical-I (Geography)	Geography Lab-I	2	4	100	-	100
CCP- 109*	Practical-I (Chemistry)	Chemistry Lab-I	2	4	100	-	100
CEP- 109*	Practical-I (Electronics)	Electronics Lab-I (Network Analysis and Analog Electronics)	2	4	100	-	100
CCsP- 109*	Practical-I (Computer Science)	Computer Lab-I (Based on Fundamentals of Computer & Programming in 'C')	2	4	100	-	100
CCaP- 109*	Practical- I (Computer Applications)	Computer Lab-I	2	4	100	-	100
CMP- 110*	Practical-I (Mathematics) ✓	Mathematics Lab-I	1.5	3	100	-	100

- The practical examination to be conducted annually with Second semester examination.

Signature
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Signature

Semester-II

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
CXL- 201	Language Skills Compulsory Course-II	English-II	2	2	80	20	100
✓ CPL- 202	Core Course-III (Physics)	Mechanics-II	2	2	80	20	100
✓ CPL- 203	Core Course-IV (Physics)	Electricity, Magnetism and Electromagnetic Theory -II	2	2	80	20	100
CGL- 202	Core Course-III (Geography)	Human Geography-I	2	2	80	20	100
CGL- 203	Core Course-IV (Geography)	Human Geography-II	2	2	80	20	100
0 CCL- 204	Core Course-III (Chemistry)	Physical Chemistry- I (Chemical Energetics and Equilibria)	2	2	80	20	100
0 CCL- 205	Core Course-IV (Chemistry)	Organic Chemistry- II (Functional Group Organic Chemistry)	2	2	80	20	100
CEL- 204	Core Course-III (Electronics)	Linear and Digital Integrated circuits	2	2	80	20	100
CEL- 205	Core Course-IV (Electronics))	Digital Electronics	2	2	80	20	100
CCsL- 204	Core Course-III (Computer Science)	Data Structure using 'C'	2	2	80	20	100
CCsL- 205	Core Course-IV (Computer Science)	Computer Organisation	2	2	80	20	100
CCaL- 204	Core Course- III (Computer Applications)	Information Technology	2	2	80	20	100
CCaL- 205	Core Course- IV (Computer Applications)	Programming in 'C'	2	2	80	20	100
CML- 206	Core Course-III (Mathematics)	Ordinary Differential Equations and Laplace Transformations	4	4	80	20	100
CML- 207	Core Course-IV (Mathematics)	Vector Calculus and Geometry	4	4	80	20	100
✓ CPP- 208	Practical-II (Physics)	Physics Lab-II	2	4	100	-	100
CGP- 208	Practical-II (Geography)	Geography Lab-II	2	4	100	-	100
0 ✓ CP-209	Practical-II (Chemistry)	Chemistry Lab-II	2	4	100	-	100
CEP-209	Practical-II (Electronics)	Linear Integrated circuits and Digital Electronics Lab	2	4	100	-	100
CCsP-209	Practical-II (Computer Science)	Computer Lab-II (Based on Data Structure using 'C')	2	4	100	-	100
CCaP-209	Practical-II (Computer Applications)	Computer Lab- II	2	4	100	-	100
CMP-210	Practical-II (Mathematics)	Mathematics Lab-II	1.5	3	100	-	100

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Semester-III

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
CXL- 301	Language Skills Compulsory Course-III	Hindi-I	2	2	80	20	100
CPI- 302	Core Course-V (Physics)	Heat and Thermodynamics	2	2	80	20	100
CPI- 303	Core Course-VI (Physics)	Semiconductor Devices	2	2	80	20	100
CGL-302	Core Course-V (Geography)	Geography of India	2	2	80	20	100
CGL- 303	Core Course-VI (Geography)	Regional Planning with special reference to Haryana	2	2	80	20	100
CCL- 304	Core Course-V (Chemistry)	Physical Chemistry-II (Solutions, Phase Equilibrium, Conductance & Electrochemistry)	2	2	80	20	100
CCL- 305	Core Course-VI (Chemistry)	Organic Chemistry-III (Functional Group Organic Chemistry-II)	2	2	80	20	100
CEL- 304	Core Course-V (Electronics))	Communication Electronics-I	2	2	80	20	100
CEL- 305	Core Course-VI (Electronics))	Microprocessor	2	2	80	20	100
CCSL- 304	Core Course-V (Computer Science)	Database Management System	2	2	80	20	100
CCSL- 305	Core Course-VI (Computer Science)	Operating System	2	2	80	20	100
CCAL- 304	Core Course- V (Computer Applications)	Web Development	2	2	80	20	100
CCAL- 305	Core Course- VI (Computer Applications)	Operating System	2	2	80	20	100
CML- 306	Core Course-V (Mathematics) ✓	Advanced Calculus	4	4	80	20	100
CML- 307	Core Course-VI (Mathematics) ✓	Numerical Analysis	4	4	80	20	100
✓ CPP- 308*	Practical-III (Physics)	Physics Lab-III	2	4	100	-	100
CGP- 308*	Practical-III (Geography)	Geography Lab-III	2	4	100	-	100
CCP- 309*	Practical-III (Chemistry)	Chemistry Lab-III	2	4	100	-	100
CEP- 309*	Practical-III (Electronics)	Communication Electronics Lab- III	2	4	100	-	100
CCCP- 309*	Practical-III (Computer Science)	Computer Lab-III (DBMS Lab)	2	4	100	-	100
CCAP-309*	Practical- III (Computer Applications)	Computer Lab-III (Web Development Lab)	2	4	100	-	100
CMP- 310*	Practical-III (Mathematics) ✓	Mathematics Lab-III	1.5	3	100	-	100

- The practical examination to be conducted annually with Fourth semester examination.

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Semester-IV

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
CXL- 401	Language Skills Compulsory Course-IV	Hindi-II	2	2	80	20	100
✓ CPL- 402	Core Course-VII (Physics)	Statistical Mechanics	2	2	80	20	100
✓ CPL- 403	Core Course-VIII (Physics)	Waves and Optics	2	2	80	20	100
CGL- 402	Core Course-VII (Geography)	Environmental Geography	2	2	80	20	100
CGL- 403	Core Course-VIII (Geography)	Geography of Disaster	2	2	80	20	100
○ CCL- 404	Core Course-VII (Chemistry)	Inorganic Chemistry-II(Transition Metals & Coordination Chemistry)	2	2	80	20	100
○ CCL- 405	Core Course-VIII (Chemistry)	Physical Chemistry-III(States of Matter & Chemical Kinetics)	2	2	80	20	100
CEL- 404	Core Course-VII (Electronics)	Communication Electronics-II	2	2	80	20	100
CEL- 405	Core Course-VIII (Electronics))	Microcontroller	2	2	80	20	100
CCsL- 404	Core Course-VII (Computer Science)	Software Engineering	2	2	80	20	100
CCsL- 405	Core Course-VIII (Computer Science)	Computer Networks	2	2	80	20	100
CCaL- 404	Core Course- VII (Computer Applications)	Database Management System	2	2	80	20	100
CCaL- 405	Core Course- VIII (Computer Applications)	Data Analysis	2	2	80	20	100
CML- 406	Core Course-VII (Mathematics)	Partial Differential Equations & Special Functions	4	4	80	20	100
CML- 407	Core Course-VIII (Mathematics)	Mechanics-I	4	4	80	20	100
✓ CPP- 408*	Practical-IV (Physics)	Physics Lab-IV	2	4	100	-	100
✓ CPS- 409	Skill Enhancement Course-I (Physics)	Electrical Circuits and Network Skills	2	<u>2</u>	50	50	100
CGP- 408	Practical-IV (Geography)	Geography Lab-IV	2	4	100	-	100
○ CCP-409	Practical-IV (Chemistry)	Chemistry Lab-IV	2	4	100	-	100
CEP-409	Practical-IV (Electronics)	Microprocessor and Microcontroller Lab-IV	2	4	100	-	100
CCsP-409	Practical-IV (Computer Science)	Computer Lab-IV (Computer Networks lab)	2	4	100	-	100
CCaP-409	Practical-IV (Computer Applications)	Computer Lab- IV (DBMS Lab)	2	4	100	-	100
CMP-410	Practical-IV (Mathematics)	Mathematics Lab-IV	1.5	3	100	-	100

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Semester-V

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
✓ CPL- 501	Discipline Specific Course-I (Physics)	Elements of Modern Physics	2	2	80	20	100
✓ CPL- 502	Discipline Specific Course -II (Physics)	Nuclear Physics	2	2	80	20	100
CGL-501	Discipline Specific Course-I (Geography)	Geography	2	2	80	20	100
CGL- 502	Discipline Specific Course-II (Geography)	Geography	2	2	80	20	100
○ CCL- 503(i) OR CCL- 503(ii)	Discipline Specific Course-I (Chemistry)	Polymer Chemistry-I OR Chemistry of Main Group Elements, Theories of Acids and Bases-I	2	2	80	20	100
○ CCL- 504(i) OR CCL- 504(ii)	Discipline Specific Course-II (Chemistry)	Polymer Chemistry-II OR Chemistry of Main Group Elements-II	2	2	80	20	100
○ CCS- 505(i) OR CCS- 505(ii)	Skill Enhancement Course-I(Chemistry)	Pesticide Chemistry OR Fuel Chemistry	2	2	50	50	100
CEL- 503(i) OR CEL- 503(ii) OR CEL- 503(iii)	Discipline Specific Course-I (Electronics)	Electronic Instrumentation-I OR Signal and System OR Semiconductor Devices Fabrication	2	2	80	20	100
CEL- 504(i) OR CEL- 504(ii) OR CEL- 504(iii)	Discipline Specific Course-II (Electronics))	Electronic Instrumentation-II OR Programming with Sci Lab/Mat lab OR Antenna Theory	2	2	80	20	100
CEL- 505(i) OR CEL- 505(ii) OR CEL- 505(iii)	Skill Enhancement Course-III (Electronics)	PCB Design and Fabrication OR Robotics OR Mobile Application Programming	2	2	50	50	100
CCsL- 503	Discipline Specific Course-I (Computer Science)	Object Oriented Programming using C++	2	2	80	20	100
CCsL- 504	Discipline Specific Course-II (Computer Science)	Data Analytics	2	2	80	20	100
CCaL- 503	Discipline Specific Course- I (Computer Applications)	Object Oriented Programming using Java	2	2	80	20	100
CCaL- 504	Discipline Specific Course- II (Computer Applications)	Computer Networks	2	2	80	20	100

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Signature

CML- 506(i) OR CML- 506(ii)	Discipline Specific Course-I (Mathematics)	Groups and Rings OR Sampling Techniques	4	4	80	20	100
CML- 507(i) OR CML- 507(ii)	Discipline Specific Course-II (Mathematics)	Sequence & Series OR Sample Survey and Design of Experiments	4	4	80	20	100
CML- 508(i) OR CML- 508(ii)	Discipline Specific Course-III (Mathematics)	Number Theory & Trigonometry OR Integer programming & Theory of Games	4	4	80	20	100
✓ D CIP- 508*	Practical-V (Physics)	Physics Lab-V	2	4	100	-	100
CIP- 508*	Practical-V (Geography)	Geography Lab-V	2	4	100	-	100
CIP- 509(i)* OR CIP- 509(ii)	Practical-V (Chemistry)	Chemistry Lab-V(i) OR Chemistry Lab-V(ii)	2	4	100	-	100
CIP- 509(i)* OR CIP- 509(ii)* OR CIP- 509(iii)*	Practical-V (Electronics)	Electronic Instrumentation Lab OR Signal and System Lab OR Electronics skill lab	2	4	100	-	100
CCsP- 509*	Practical-V (Computer Science)	Computer Lab-V (Object Oriented Programming using C++ Lab)	2	4	100	-	100
CCaP-509*	Practical-V (Computer Applications)	Computer Lab-V (Object Oriented Programming using Java)	2	4	100	-	100

- The practical examination to be conducted annually with Sixth semester examination.

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Semester-VI

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
CPL- 601	Discipline Specific Course-III (Physics)	Solid State Physics	2	2	80	20	100
CPL- 602	Discipline Specific Course-IV (Physics)	Quantum Mechanics	2	2	80	20	100
CGL- 601	Discipline Specific Course-III (Geography)	Geography	2	2	80	20	100
CGL- 602	Discipline Specific Course-IV (Geography)	Geography	2	2	80	20	100
CCL- 603(i) OR CCL- 603(ii)	Discipline Specific Course-III (Chemistry)	Organometallics and Bioorganic Chemistry OR Quantum Chemistry	2	2	80	20	100
CCL- 604(i) OR CCL- 604(ii)	Discipline Specific Course-IV (Chemistry)	Polynuclear Hydrocarbons and UV,IR Spectroscopy OR Spectroscopy and Photochemistry	2	2	80	20	100
CCS- 605	Skill Enhancement Course-IV(Chemistry)	Green Methods in Chemistry	2	2	50	50	100
CEL- 603(i) OR CEL- 603(ii) OR CEL- 603(iii)	Discipline Specific Course-III (Electronics)	Digital System Design OR Digital Signal Processing OR Photonic Devices	2	2	80	20	100
CEL- 604(i) OR CEL- 604(ii) OR CEL- 604(iii)	Discipline Specific Course-IV (Electronics)	VLSI Design OR Internet of Things OR Consumer Electronics	2	2	80	20	100
CCsL- 603	Discipline Specific Course-III (Computer Science)	Computer Graphics	2	2	80	20	100
CCsL- 604	Discipline Specific Course-IV (Computer Science)	Python Programming	2	2	80	20	100
CCaL- 603	Discipline Specific Course- III (Computer Applications)	Mobile Application Development	2	2	80	20	100
CCaL- 604	Discipline Specific Course- IV (Computer Applications)	Cloud Computing	2	2	80	20	100
CML- 605(i) OR CML- 605(ii)	Discipline Specific Course-IV (Mathematics)	Linear Algebra OR Bio-Mathematics	4	4	80	20	100
CML- 606(i) OR CML- 606(ii)	Discipline Specific Course-V (Mathematics)	Mechanics-II OR Queuing and Reliability Theory	4	4	80	20	100

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CML- 607(i) OR CML- 607(ii)	Discipline Specific Course-VI (Mathematics)	Real & Complex Analysis OR Optimization Techniques	4	4	80	20	100
CMS-608(i) OR CMS-608(ii)	Skill Enhancement Course-IV (Mathematics)	Solid Geometry OR Financial Mathematics	2	2	50	50	100
✓ CPP- 608	Practical-VI (Physics)	Physics Lab-VI	2	4	100	-	100
CGP- 608	Practical-VI (Geography)	Geography Lab-VI	2	4	100	-	100
○ CCP-609(i) OR CCP-609(ii)	Practical-VI (Chemistry)	Chemistry Lab-VI(i) OR Chemistry Lab-VI(ii)	2	4	100	-	100
CEP- 609(i) OR CEP- 609(ii) OR CEP- 609(iii)	Practical-VI (Electronics)	Digital System Design Lab OR Digital Signal Processing Lab OR Advance communication Lab	2	4	100	-	100
CCsP-609	Practical-VI (Computer Science)	Computer Lab-VI (Computer Graphics Lab)	2	4	100	-	100
CCaP-609	Practical-VI (Computer Applications)	Computer Lab- VI (Mobile Application Development)	2	4	100	-	100

Sum
14/6/19

Alexandra

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29/6/19

Dr. Lawrence Jain
scheme & syllabi 2019
29/6/19



GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR
(Established by State Legislature Act 17 of 1995)
'A' Grade, NAAC Accredited

Acad./AC-III/F-5&19/2019/ 2584
Dated: 20-06-19

M. (Botany-Zoology)
To

Controller of Examinations
GJUS&T, Hisar.

Sub: Approval of Scheme & Syllabi for various B.Sc. programmes w.e.f. Academic Session mentioned against each.

I am directed to inform you that the Vice-Chancellor, on the recommendations the Faculty of Environmental and Bio Sciences & Technology, vide resolution no. 2, in its meeting held on 20.03.2019, is pleased to approve the scheme & syllabi of B.Sc. programme(s) w.e.f. the academic session mentioned against each being run in affiliated degree colleges in anticipation of approval of the Academic Council under Section 11(5) of the University Act, 1995:-

- | Sr.No. | Programmes: |
|--------|---|
| 1. | B.Sc. General (Medical Group) Zoology of affiliated degree Colleges based on Choice Based Credit System 1 st to 3 rd year w.e.f. academic session 2019-20 onwards and also for 2 nd year and 3 rd year for the students admitted during academic session 2018-19. |
| 2. | B.Sc. General (Medical Group) Botany of Affiliated Degree Colleges based on Choice Based Credit System w.e.f. academic session 2018-19 for 3 rd Semester onwards and Academic Session 2019-20 for 1 st Semester onwards. |
| 3. | B.Sc. General (Medical Group) Botany 5 th and 6 th semester of affiliated Degree Colleges based on existing syllabus of Kurukshetra University, Kurukshetra for the students admitted in batch 2017-18. |
| 4. | B.Sc. General (Medical Group) Biotechnology of affiliated Degree Colleges based on Choice Based Credit System w.e.f. academic session 2018-19 for 3 rd Semester onwards and Academic Session 2019-20 for 1 st Semester onwards. |
| 5. | B.Sc. General (Medical Group) Biotechnology 5 th and 6 th semester of affiliated Degree Colleges based on existing syllabus of Kurukshetra University, Kurukshetra for the students admitted in batch 2017-18. |

This is for your information and further necessary action in the matter.

DA: As above

(Signature)
20/6/19
Dy. Registrar (Academic)

Endst. No. Acad./AC-III/F-5&19/2019/2585-97 Dated: 20-06-19

A copy of the above is forwarded to the following for information and necessary action:-

1. Dean Academic Affairs, GJUS&T, Hisar.
2. Dean of Colleges, GJUS&T, Hisar.
3. Dean, Faculty of Environmental and Bio Sciences & Technology, GJUS&T, Hisar.
4. Chairperson, Deptt. of Environmental Science & Engg., GJUS&T, Hisar alongwith copy of scheme & syllabi of B.Sc. General (Medical Group) Zoology at sr. no. 1. You are further requested to get upload the said scheme and syllabi on the University website
5. Chairperson, Deptt. of Bio & Nano Technology, GJUS&T, Hisar alongwith copy of scheme and syllabi of B.Sc. (Medical Group) Botany at sr. no. 2 and 3 and B.Sc. General (Medical Group) Biotechnology) at sr. no. 4 & 5. . You are further requested to get upload the said scheme and syllabi on the University website
6. All concerned Affiliated Degree Colleges, GJUS&T, Hisar alongwith scheme and syllabi of B.Sc. (General) Medical Group from sr. no. 1 to 3. (1 to 3)
7. SVC (for kind information of Vice-Chancellor), GJUS&T, Hisar.

(Signature)
20/6/19

Course Curriculum of B. Sc. General (Medical Group) Botany

Semester I

Paper Code	Course	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
CXL-101L	Language Skill Compulsory Course-I	English-I	2	2	80	20	100
CYL-111L	Awareness Program Compulsory Course-I	Environmental Studies	2	2	80	20	100
BOT-101 L	Core course - Botany Paper I	Biodiversity of Microbes, Algae and Fungi	2	2	80	20	100
BOT-102 L	Core course - Botany Paper II	Biodiversity of Archegoniate	2	2	80	20	100
ZOO-101 L	Core Course-I (Zoology)	Animal Biodiversity I	2	2	80	20	100
ZOO-102 L	Core Course-II (Zoology)	Animal Biodiversity II	2	2	80	20	100
CCL-104 L	Core Course-I (Chemistry)	Inorganic Chemistry-I (Atomic Structure & Bonding)	2	2	80	20	100
CCL-105 L	Core Course-II (Chemistry)	Organic Chemistry-I (General Organic Chemistry & Aliphatic Hydrocarbons)	2	2	80	20	100
BOT-103P	Practical -I (Botany)	Laboratory Practical- Paper III (Biodiversity of Microbes, Algae, Fungi and Archegoniate)	2	4	100	-	100
ZOO 103 P	Practical -I (Zoology)	Laboratory Practical of Animal Biodiversity I & II	2	4	100	-	100
CCP-109 P	Practical-I (Chemistry)	Chemistry Lab-I	2	4	100	-	100

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Semester II

Paper Code	Course	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
CXL-201L	Language Skill Compulsory Course-II	English-II	2	2	80	20	100
BOT-201 L	Core course-Botany Paper IV	Plant Ecology	2	2	80	20	100
BOT-202 L	Core Course- Botany Paper V	Plant Taxonomy	2	2	80	20	100
ZOO-201 L	Core Course-IV (Zoology)	Comparative Anatomy and Developmental Biology of Vertebrates I	2	2	80	20	100
ZOO-202 L	Core Course-V (Zoology)	Comparative Anatomy and Developmental Biology of Vertebrates I	2	2	80	20	100
CCL-204 L	Core Course-III (Chemistry)	Physical Chemistry-I (Chemical Energetics and Equilibria)	2	2	80	20	100
CCL-205 L	Core Course-IV (Chemistry)	Organic Chemistry-II (Functional Group Organic Chemistry)	2	2	80	20	100
BOT 203 P	Practical-II Botany	Laboratory Practicals - Paper VI (Plant Ecology and Taxonomy)	2	4	100	-	100
ZOO 203 P	Core Course-VI (Zoology Practical)	Laboratory Practicals of Comparative Anatomy and Developmental Biology of Vertebrates I & II	2	4	100	-	100
CCP-209 P	Practical-II (Chemistry)	Chemistry Lab-II	2	4	100	-	100

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Semester III

Paper Code	Course	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
CXL-301L	Language Skills Compulsory Course-I	Hindi-I	2	2	80	20	100
BOT- 301 L	Core course - Botany Paper VII	Plant Anatomy	2	2	80	20	100
BOT -302 L	Core course - Botany Paper VIII	Plant Embryology	2	2	80	20	100
ZOO-301 L	Core Course-VII (Zoology)	Physiology and Biochemistry I	2	2	80	20	100
ZOO-302 L	Core Course-VIII (Zoology)	Physiology and Biochemistry II	2	2	80	20	100
CCL-304 L	Core Course-I (Chemistry)	Physical Chemistry-II (Solutions, Phase equilibrium, Conductance and Electrochemistry)	2	2	80	20	100
CCL-305 L	Core Course-II (Chemistry)	Organic Chemistry-III (Functional Group Organic Chemistry-II)	2	2	80	20	100
BOT 303P	Practical-III (Botany)	Laboratory Practical- Paper IX (Plant Anatomy and Embryology)	2	4	100	-	100
ZOO 303 P	Core Course-IX (Zoology Practical)	Laboratory Practicals of Physiology and Biochemistry I & II	2	4	100	-	100
CCP-309 P	Practical-III (Chemistry)	Chemistry Lab-III	2	4	100	-	100
BOT 304 L/ BOT 305 L/ BOT 306L/ BOT 307L	Skill Enhancement Course -1	Any one of the following: I. Ethnobotany (BOT 304 L) II. Biofertilizers (BOT 305 L) III. Mushroom Culture Technology (BOT 306 L) IV. Plant Diversity and Human Welfare (BOT 307 L)	2	2	80	20	100

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Semester V

Paper Code	Course	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
CCS-505L	Skill Enhancement Course-I (Chemistry)	Any one of the following: Pesticide Chemistry or Green Methods in Chemistry	2	2	80	20	100
BOT 501L/504 L**	Discipline Specific Elective - Botany Paper I	Cell Biology (BOT501L)/ Analytical Techniques in Plant Sciences-I (BOT504L)	2	2	80	20	100
BOT 502L/505 L**	Discipline Specific Elective - Botany Paper II	Molecular Biology (BOT502L)/ Analytical Techniques in Plant Sciences-II (BOT505L)	2	2	80	20	100
ZOO- 501 L or ZOO- 504 L	Discipline Specific Elective Course-I (Zoology)	Applied Zoology I Or Aquatic Biology I	2	2	80	20	100
ZOO- 502 L or ZOO- 505 L	Discipline Specific Elective Course-II (Zoology)	Applied Zoology II Or Aquatic Biology II	2	2	80	20	100
CCL-503(i) or CCL-503(ii)	Discipline Specific Course-I (Chemistry)	Polymer Chemistry-I or Chemistry of Main Group Elements, Theories of Acids and bases-I	2	2	80	20	100
CCL-504(i) or CCL-504(ii)	Discipline Specific Course-II (Chemistry)	Polymer Chemistry-II or Chemistry of Main Group Elements-II	2	2	80	20	100
BOT 503P/506P **	Discipline Specific Elective Practical - III Botany	Laboratory Practical- Paper -III Cell biology and Molecular Biology (503 P)/ Analytical Techniques in Plant Sciences (506P)	2	4	100	-	100
ZOO 503 P or ZOO 506 P	Discipline Specific Course-III (Zoology Practical)	Laboratory Practicals of Applied Zoology I & II or Aquatic Biology I & II	2	4	100	-	100
CCP-509 (i) or CCP-509 (ii)	Practical-V (Chemistry)	Chemistry Lab-V(i) or Chemistry Lab-V(ii)	2	4	100	-	100

****Students can opt any one of the following combinations (Theory as well as Practicals):**

1. Cell Biology (BOT501L) + Molecular Biology (BOT 502L)+ Laboratory Practical- Paper -III Cell biology and Molecular Biology (503 P)
2. Analytical Techniques in Plant Sciences I(BOT504L)+Analytical Techniques in Plant Sciences II(BOT 505 L)+ Analytical Techniques in Plant Sciences (506P)

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Code	Course	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
BOT 601L/604L	Discipline Specific Elective - Botany Paper IV	Economic Botany (BOT601L)/ Genetics (BOT604L)	2	2	80	20	100
BOT 602L/605 L	Discipline Specific Elective - Botany Paper V	Biotechnology(BOT602L)/ Plant Breeding (BOT605L)	2	2	80	20	100
ZOO- 601 L or ZOO- 604 L	Discipline Specific Elective Course-IV (Zoology)	Reproductive Biology I or Insect, Vector and Diseases I	2	2	80	20	100
ZOO- 602 L or ZOO- 605 L	Discipline Specific Elective Course-V (Zoology)	Reproductive Biology I Or Insect, Vector and Diseases I	2	2	80	20	100
CCL-603(i) or CCL-603(ii)	Discipline Specific Course-III (Chemistry)	Organometallics and Bioorganic Chemistry or Quantum Chemistry	2	2	80	20	100
CCL-604(i) or CCL-604(ii)	Discipline Specific Course-IV (Chemistry)	Polynuclear Hydrocarbon and UV-IR Spectroscopy or Spectroscopy and Photochemistry	2	2	80	20	100
BOT603P or 606P	Discipline Specific Elective - Practical-VI	Laboratory Practical - Paper VI (Economic Botany and Biotechnology (BOT603P)/ Genetics and Plant Breeding (BOT606P)	2	4	100	-	100
ZOO 603 P or ZOO 606 P	Discipline Specific Elective Course-VI (Zoology Practical)	Laboratory Practicals of Reproductive Biology I & II or Insect, Vector and Diseases I & II	2	4	100	-	100
CCP-609 (i) or CCP-609 (ii)	Practical-V (Chemistry)	Chemistry Lab-VI(i) or Chemistry Lab-VI(ii)	2	4	100	-	100

**Students can opt any one of the following combinations (Theory as well as Practicals):

1. Economic Botany (BOT 601L) + Biotechnology (BOT602L) + Laboratory Practical - Paper VI (Economic Botany and Biotechnology (BOT603P))
2. Genetics(BOT 604L) + Plant Breeding (BOT605L) + Genetics and Plant Breeding ((BOT606P))

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Note:

1. The subject combinations under B. Sc. General (Medical Group) are Botany, Zoology and Chemistry.
2. Definition of Credit:
1 Credit = 1 Hr. Lecture (L) per week
1 Credit = 2 Hrs. Practical (P) per week
2 Hrs. = 3 periods of approx. 40 minutes
3. Each theory paper will be of 100 marks. The distribution of marks for external and internal assessment will be of 80 and 20 respectively. The distribution of internal assessment marks of 20 is based on the marks obtained by the student in one minor test of 12 marks to be conducted preferably in the month of November for Odd Semester and in the month of March for Even Semester. A student is required to pass the individual paper with 35% marks including internal assessment. The student also needs to pass the external examination individually with 35% marks. There will be maximum 4 marks for attendance (1 mark for attendance of 71-75%, 2 marks for attendance of 76-80%, 3 marks for attendance of 81-85% and 4 marks for attendance above 85%). The remaining 4 marks are for extracurricular activities including assignments.
4. Practical examinations to be held annually with even semesters. The marks of odd semester practical may be reflected in the DMC of even semester with code and nomenclature, to be shown separately for each semester.
5. The Batches of 20 or more can be opted for various courses as per requirement for all practical purposes by the college/institution. Each practical will be of 100 marks. The evaluation of practical may be distributed as 20% marks for lab record, 50% marks for performance during the examination and 30% marks for Viva Voce examination.

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Proposed Structure and Syllabus

of

Zoology

for

B.Sc. Undergraduate Programme

1st to 3rd year w.e.f. 2019-20 onwards

&

2nd & 3rd year for the students admitted

in the academic session 2018-19.

Based on:

U.G.C. Choice Based Credit System (CBCS)
Model Curriculum


B. Srinivas
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29/06/19

Dr. Pankaj Jain for Unsway
29/6/19

Scheme of Examination and Syllabus

Affiliated Colleges

(2018-19 w.e.f. Sem-III, and 2019-20 w.e.f. Sem-I) _{onwards}

B. Sc. General (Medical Group) Botany

***BASED ON
CHOICE BASED CREDIT SYSTEM***



Department of Bio and Nanotechnology

Guru Jambheshwar University of Science & Technology

Hisar

CHOICE BASED CREDIT SYSTEM

(CBCS)

Guru Jambheshwar University of Science and Technology, Hisar

Scheme and Syllabi
for
(Third Semester Onwards)

Undergraduate Course:

B. SC. PHYSICAL SCIENCES

(PHYSICS/GEOGRAPHY, CHEMISTRY/
ELECTRONICS/ COMPUTER SCIENCE/ COMPUTER
APPLICATIONS, MATHEMATICS)

Under
The Faculty of Physical Sciences and Technology



w.e.f. Academic Session 2018-19

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Deverendra

Credit Distribution for B.Sc. programme under Choice Based Credit System (CBCS)

		Core Courses (CC)	Discipline Specific courses(DSC)	Skill Enhancement Courses(SEC)	Total Credits (CC+DSC)	Theory + Practical+SEC
Theory (T): Practical(P)						
	Physics (T)	16	08	2	24	38
	Physics (P)	08	04		12	
	Geography(T)	16	08	2	24	38
	Geography(P)	08	04		10	
	Chemistry(T)	16	08	2	24	38
	Chemistry(P)	08	04		10	
	Electronics(T)	16	08	2	24	38
	Electronics(P)	08	04		10	
	Computer Science(T)	16	08	2	24	38
	Computer Science(P)	08	04		10	
	Computer Applications(T)	16	08	2	24	38
	Computer Applications(P)	06	04		10	
	Mathematics(T)	32	24	2	56	64
	Mathematics(P)	06	--		06	
Language skills		08	--	--	08	08
Awareness program		02	--	--	02	02
Total	PCM/GCsM/PEM/PCsM/PCaM(T)	60	40	06	100	140
	PCM/GCsM/PEM/PCsM/PCaM(P)	18	08		26	

Total Credits required to pass the course -140+10=150

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Semester wise Distribution of Credits

		I Sem.	II Sem.	III Sem.	IV Sem.	V Sem.	VI Sem.	Total credits
Language Skills								4
English(4)		2	2	--	--	--	--	4
Hindi(4)		--	--	2	2	--	--	
Awareness program								2
Env.Science(2)		2	--	--	--	--	--	
Subjects								24
Physics (38)	Theory	4	4	4	4	4	4	12
	Practical	2	2	2	2	2	2	2
	SEC	--	--	--	2	--	--	24
Chemistry(38)	Theory	4	4	4	4	4	4	12
	Practical	2	2	2	2	2	2	2
	SEC	--	--	--	--	2	--	2
Mathematics(64)	Theory	8	8	8	8	12	12	56
	Practical	1.5	1.5	1.5	1.5	--	--	6
	SEC	--	--	--	--	--	2	2
Geography(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	--	--	2
Electronics(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	2	--	2
Computer Science(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	--	--	2
Computer applications(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	--	--	2
PCM/GCsM/PEM/PCsM/PCaM	Theory	16	16	16	16	20	20	104
	Practical	5.5	5.5	5.5	5.5	4	4	30
	SEC	--	--	--	2	2	2	06
Total credits/semester (three Subjects)		21.5	21.5	21.5	23.5	22	22	140

Sum
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Note:

- (1) The subject combinations under B.Sc. (Physical Sciences) are :
 - (i) B.Sc. (Physical Sciences: Physics, Chemistry, Mathematics) ✓
 - (ii) B.Sc. (Physical Sciences: Geography, Computer Science, Mathematics)
 - (iii) B.Sc. (Physical Sciences: Physics, Electronics, Mathematics)
 - (iv) B.Sc. (Physical Sciences: Physics, Computer Science, Mathematics) ✓
 - (v) B.Sc. (Physical Sciences: Physics, Computer Applications, Mathematics)
- (2) The scheme and syllabus of Mathematics papers is also implemented to BA (with Mathematics) Courses. However, the marking scheme in case of BA courses (Mathematics Subject) will be same as decided by the concerned Board of Studies/Faculty of Humanities and Social Sciences.
- (3) For the students of B.Sc. Geography, the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Physics is to be replaced by the respective papers of the Geography; for Computer Science, the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Chemistry is to be replaced by respective papers of the Computer Sciences; for Electronics the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Chemistry is to be replaced by respective papers of the Electronics and similarly for Computer Applications, the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Chemistry is to be replaced by respective papers of the Computer Applications as decided by the respective Board of studies/Faculty of Engineering and Technology.
- (4) Definition of Credit:
1 credit=1 Hr. Lecture (L) per week
1 credit= 2 Hrs. Practical (P) per week ✓
2 Hrs. = 3 periods of approx. 40/45 minutes ✓
- (5) Practical examinations (both odd and even semester's practicals of 100 marks each) to be held annually with even semesters. The marks of Odd semester practicals may be reflected in the DMC of Even semester with code and nomenclature, to be shown separately for each semester.
- (6) The distribution of internal assessment marks of 20 is based on the marks obtained by the student in one Minor test of 12 marks to be conducted preferably in the month of November for Odd Semester and in the month of April for Even Semester. A student is required to pass the individual paper with 35% marks overall including internal assessment based on minor test. He may not be given any additional chance for minor test. However, the student also needs to pass the external examination individually with 35% marks. There will be maximum 4 marks for attendance (1 mark for attendance of 71-75%, 2 marks for attendance of 76-80%, 3 marks for attendance of 81-85% and 4 marks for attendance above 85%). The remaining 4 marks are for Extra-curricular activities including assignments.
- (7) The Batches of 20 or more can be opted for various courses as per requirement for all practical purposes by the college/institution. The evaluation of Practical may be distributed as 20% marks for lab record, 50% marks for performance during the examination and 30% marks for Viva Voce examination.] ?
- (8) SWAYAM-MOOCs (Study Webs of Active Learning for young Aspiring Minds-Massive Online Open Courses)/NPTEL(National Programme on Technology Enhanced Learning) can be opted by the candidate either under DSC or SEC for maximum upto 12 credits (Two DSCs or One DSC and one SEC).
- (9) SEC courses: One SEC by Physics department in Forth semester, One SEC has to be offered by Chemistry in fifth semester and One SEC has to be offered by Mathematics in Sixth semester. All SECs will be of 50(Internal):50(External)marks. The internal marks will be based on practical aspect of skill enhancement.]

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Alexandra

The consolidated scheme and syllabi of Three Years of B.Sc. (Physical Sciences: Physics/Geography, Chemistry/Electronics/Computer Science/Computer Applications, Mathematics) is as under:

Paper Code	Course opted	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
CXL- 101	Language Skills Compulsory Course-I	English-I	2	2	80	20	100
✓ CPL- 102	Core Course-I (Physics)	Mechanics-I	2	2	80	20	100
✓ CPL- 103	Core Course-II (Physics)	Electricity and Magnetism-I	2	2	80	20	100
CGL- 102	Core Course-I (Geography)	Physical Geography-I	2	2	80	20	100
CGL- 103	Core Course-II (Geography)	Physical Geography-II	2	2	80	20	100
CCl- 104	Core Course-I (Chemistry)	Inorganic Chemistry-I(Atomic structure and Bonding)	2	2	80	20	100
CCl- 105	Core Course-II (Chemistry)	Organic Chemistry-I(General Organic Chemistry and Aliphatic Hydrocarbons)	2	2	80	20	100
CEL- 104	Core Course-I (Electronics))	Network Analysis and Electronic Devices	2	2	80	20	100
CEL- 105	Core Course-II (Electronics))	Analog Electronics	2	2	80	20	100
CCsL- 104	Core Course-I (Computer Science)	Fundamentals of Computer	2	2	80	20	100
CCsL- 105	Core Course-II (Computer Science)	Programming in 'C'	2	2	80	20	100
CCaL- 104	Core Course- I (Computer Applications)	Computer Fundamentals and Operating System	2	2	80	20	100
CCaL- 105	Core Course- II (Computer Applications)	Office Automation Tools	2	2	80	20	100
CML- 106	Core Course-I (Mathematics) ✓	Algebra	4	4	80	20	100
CML- 107	Core Course-I (Mathematics) ✓	Calculus	4	4	80	20	100
CYL- 111	Awareness Program Compulsory Course	Environmental Studies	2	2	80	20	100
✓ CPP- 108*	Practical-I (Physics)	Physics Lab-I	2	4	100	-	100
CGP- 108*	Practical-I (Geography)	Geography Lab-I	2	4	100	-	100
CCP- 109*	Practical-I (Chemistry)	Chemistry Lab-I	2	4	100	-	100
CEP- 109*	Practical-I (Electronics)	Electronics Lab-I (Network Analysis and Analog Electronics)	2	4	100	-	100
CCsP- 109*	Practical-I (Computer Science)	Computer Lab-I (Based on Fundamentals of Computer & Programming in 'C')	2	4	100	-	100
CCaP- 109*	Practical- I (Computer Applications)	Computer Lab-I	2	4	100	-	100
CMP- 110*	Practical-I (Mathematics) ✓	Mathematics Lab-I	1.5	3	100	-	100

- The practical examination to be conducted annually with Second semester examination.

Signature
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Semester-II

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
CXL- 201	Language Skills Compulsory Course-II	English-II	2	2	80	20	100
✓ CPL- 202	Core Course-III (Physics)	Mechanics-II	2	2	80	20	100
✓ CPL- 203	Core Course-IV (Physics)	Electricity, Magnetism and Electromagnetic Theory -II	2	2	80	20	100
CGL- 202	Core Course-III (Geography)	Human Geography-I	2	2	80	20	100
CGL- 203	Core Course-IV (Geography)	Human Geography-II	2	2	80	20	100
0 CCL- 204	Core Course-III (Chemistry)	Physical Chemistry- I (Chemical Energetics and Equilibria)	2	2	80	20	100
0 CCL- 205	Core Course-IV (Chemistry)	Organic Chemistry- II (Functional Group Organic Chemistry)	2	2	80	20	100
CEL- 204	Core Course-III (Electronics)	Linear and Digital Integrated circuits	2	2	80	20	100
CEL- 205	Core Course-IV (Electronics))	Digital Electronics	2	2	80	20	100
CCsL- 204	Core Course-III (Computer Science)	Data Structure using 'C'	2	2	80	20	100
CCsL- 205	Core Course-IV (Computer Science)	Computer Organisation	2	2	80	20	100
CCaL- 204	Core Course- III (Computer Applications)	Information Technology	2	2	80	20	100
CCaL- 205	Core Course- IV (Computer Applications)	Programming in 'C'	2	2	80	20	100
CML- 206	Core Course-III (Mathematics)	Ordinary Differential Equations and Laplace Transformations	4	4	80	20	100
CML- 207	Core Course-IV (Mathematics)	Vector Calculus and Geometry	4	4	80	20	100
✓ CPP- 208	Practical-II (Physics)	Physics Lab-II	2	4	100	-	100
CGP- 208	Practical-II (Geography)	Geography Lab-II	2	4	100	-	100
0 ✓ CPP-209	Practical-II (Chemistry)	Chemistry Lab-II	2	4	100	-	100
CEP-209	Practical-II (Electronics)	Linear Integrated circuits and Digital Electronics Lab	2	4	100	-	100
CCsP-209	Practical-II (Computer Science)	Computer Lab-II (Based on Data Structure using 'C')	2	4	100	-	100
CCaP-209	Practical-II (Computer Applications)	Computer Lab- II	2	4	100	-	100
CMP-210	Practical-II (Mathematics)	Mathematics Lab-II	1.5	3	100	-	100

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Semester-III

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
CXL- 301	Language Skills Compulsory Course-III	Hindi-I	2	2	80	20	100
CPI- 302	Core Course-V (Physics)	Heat and Thermodynamics	2	2	80	20	100
CPI- 303	Core Course-VI (Physics)	Semiconductor Devices	2	2	80	20	100
CGL-302	Core Course-V (Geography)	Geography of India	2	2	80	20	100
CGL- 303	Core Course-VI (Geography)	Regional Planning with special reference to Haryana	2	2	80	20	100
CCL- 304	Core Course-V (Chemistry)	Physical Chemistry-II (Solutions, Phase Equilibrium, Conductance & Electrochemistry)	2	2	80	20	100
CCL- 305	Core Course-VI (Chemistry)	Organic Chemistry-III (Functional Group Organic Chemistry-II)	2	2	80	20	100
CEL- 304	Core Course-V (Electronics))	Communication Electronics-I	2	2	80	20	100
CEL- 305	Core Course-VI (Electronics))	Microprocessor	2	2	80	20	100
CCSL- 304	Core Course-V (Computer Science)	Database Management System	2	2	80	20	100
CCSL- 305	Core Course-VI (Computer Science)	Operating System	2	2	80	20	100
CCAL- 304	Core Course- V (Computer Applications)	Web Development	2	2	80	20	100
CCAL- 305	Core Course- VI (Computer Applications)	Operating System	2	2	80	20	100
CML- 306	Core Course-V (Mathematics) ✓	Advanced Calculus	4	4	80	20	100
CML- 307	Core Course-VI (Mathematics) ✓	Numerical Analysis	4	4	80	20	100
✓ CPP- 308*	Practical-III (Physics)	Physics Lab-III	2	4	100	-	100
CGP- 308*	Practical-III (Geography)	Geography Lab-III	2	4	100	-	100
CCP- 309*	Practical-III (Chemistry)	Chemistry Lab-III	2	4	100	-	100
CEP- 309*	Practical-III (Electronics)	Communication Electronics Lab- III	2	4	100	-	100
CCCP- 309*	Practical-III (Computer Science)	Computer Lab-III (DBMS Lab)	2	4	100	-	100
CCAP-309*	Practical- III (Computer Applications)	Computer Lab-III (Web Development Lab)	2	4	100	-	100
CMP- 310*	Practical-III (Mathematics) ✓	Mathematics Lab-III	1.5	3	100	-	100

- The practical examination to be conducted annually with Fourth semester examination.

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Semester-IV

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
CXL- 401	Language Skills Compulsory Course-IV	Hindi-II	2	2	80	20	100
✓ CPL- 402	Core Course-VII (Physics)	Statistical Mechanics	2	2	80	20	100
✓ CPL- 403	Core Course-VIII (Physics)	Waves and Optics	2	2	80	20	100
CGL- 402	Core Course-VII (Geography)	Environmental Geography	2	2	80	20	100
CGL- 403	Core Course-VIII (Geography)	Geography of Disaster	2	2	80	20	100
○ CCL- 404	Core Course-VII (Chemistry)	Inorganic Chemistry-II(Transition Metals & Coordination Chemistry)	2	2	80	20	100
○ CCL- 405	Core Course-VIII (Chemistry)	Physical Chemistry-III(States of Matter & Chemical Kinetics)	2	2	80	20	100
CEL- 404	Core Course-VII (Electronics)	Communication Electronics-II	2	2	80	20	100
CEL- 405	Core Course-VIII (Electronics))	Microcontroller	2	2	80	20	100
CCsL- 404	Core Course-VII (Computer Science)	Software Engineering	2	2	80	20	100
CCsL- 405	Core Course-VIII (Computer Science)	Computer Networks	2	2	80	20	100
CCaL- 404	Core Course- VII (Computer Applications)	Database Management System	2	2	80	20	100
CCaL- 405	Core Course- VIII (Computer Applications)	Data Analysis	2	2	80	20	100
CML- 406	Core Course-VII (Mathematics)	Partial Differential Equations & Special Functions	4	4	80	20	100
CML- 407	Core Course-VIII (Mathematics)	Mechanics-I	4	4	80	20	100
✓ CPP- 408*	Practical-IV (Physics)	Physics Lab-IV	2	4	100	-	100
✓ CPS- 409	Skill Enhancement Course-I (Physics)	Electrical Circuits and Network Skills	2	<u>2</u>	50	50	100
CGP- 408	Practical-IV (Geography)	Geography Lab-IV	2	4	100	-	100
○ CCP-409	Practical-IV (Chemistry)	Chemistry Lab-IV	2	4	100	-	100
CEP-409	Practical-IV (Electronics)	Microprocessor and Microcontroller Lab-IV	2	4	100	-	100
CCsP-409	Practical-IV (Computer Science)	Computer Lab-IV (Computer Networks lab)	2	4	100	-	100
CCaP-409	Practical-IV (Computer Applications)	Computer Lab- IV (DBMS Lab)	2	4	100	-	100
CMP-410	Practical-IV (Mathematics)	Mathematics Lab-IV	1.5	3	100	-	100

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Devedan

Semester-V

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
✓ CPL- 501	Discipline Specific Course-I (Physics)	Elements of Modern Physics	2	2	80	20	100
✓ CPL- 502	Discipline Specific Course -II (Physics)	Nuclear Physics	2	2	80	20	100
CGL-501	Discipline Specific Course-I (Geography)	Geography	2	2	80	20	100
CGL- 502	Discipline Specific Course-II (Geography)	Geography	2	2	80	20	100
○ CCL- 503(i) OR CCL- 503(ii)	Discipline Specific Course-I (Chemistry)	Polymer Chemistry-I OR Chemistry of Main Group Elements, Theories of Acids and Bases-I	2	2	80	20	100
○ CCL- 504(i) OR CCL- 504(ii)	Discipline Specific Course-II (Chemistry)	Polymer Chemistry-II OR Chemistry of Main Group Elements-II	2	2	80	20	100
○ CCS- 505(i) OR CCS- 505(ii)	Skill Enhancement Course-I(Chemistry)	Pesticide Chemistry OR Fuel Chemistry	2	2	50	50	100
CEL- 503(i) OR CEL- 503(ii) OR CEL- 503(iii)	Discipline Specific Course-I (Electronics)	Electronic Instrumentation-I OR Signal and System OR Semiconductor Devices Fabrication	2	2	80	20	100
CEL- 504(i) OR CEL- 504(ii) OR CEL- 504(iii)	Discipline Specific Course-II (Electronics))	Electronic Instrumentation-II OR Programming with Sci Lab/Mat lab OR Antenna Theory	2	2	80	20	100
CEL- 505(i) OR CEL- 505(ii) OR CEL- 505(iii)	Skill Enhancement Course-III (Electronics)	PCB Design and Fabrication OR Robotics OR Mobile Application Programming	2	2	50	50	100
CCsL- 503	Discipline Specific Course-I (Computer Science)	Object Oriented Programming using C++	2	2	80	20	100
CCsL- 504	Discipline Specific Course-II (Computer Science)	Data Analytics	2	2	80	20	100
CCaL- 503	Discipline Specific Course- I (Computer Applications)	Object Oriented Programming using Java	2	2	80	20	100
CCaL- 504	Discipline Specific Course- II (Computer Applications)	Computer Networks	2	2	80	20	100

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CML- 506(i) OR CML- 506(ii)	Discipline Specific Course-I (Mathematics)	Groups and Rings OR Sampling Techniques	4	4	80	20	100
CML- 507(i) OR CML- 507(ii)	Discipline Specific Course-II (Mathematics)	Sequence & Series OR Sample Survey and Design of Experiments	4	4	80	20	100
CML- 508(i) OR CML- 508(ii)	Discipline Specific Course-III (Mathematics)	Number Theory & Trigonometry OR Integer programming & Theory of Games	4	4	80	20	100
✓ D CIP- 508*	Practical-V (Physics)	Physics Lab-V	2	4	100	-	100
CIP- 508*	Practical-V (Geography)	Geography Lab-V	2	4	100	-	100
CIP- 509(i)* OR CIP- 509(ii)	Practical-V (Chemistry)	Chemistry Lab-V(i) OR Chemistry Lab-V(ii)	2	4	100	-	100
CIP- 509(i)* OR CIP- 509(ii)* OR CIP- 509(iii)*	Practical-V (Electronics)	Electronic Instrumentation Lab OR Signal and System Lab OR Electronics skill lab	2	4	100	-	100
CCsP- 509*	Practical-V (Computer Science)	Computer Lab-V (Object Oriented Programming using C++ Lab)	2	4	100	-	100
CCaP-509*	Practical-V (Computer Applications)	Computer Lab-V (Object Oriented Programming using Java)	2	4	100	-	100

- The practical examination to be conducted annually with Sixth semester examination.

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Devendra

Semester-VI

Paper Code	Course opted	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
CPL- 601	Discipline Specific Course-III (Physics)	Solid State Physics	2	2	80	20	100
CPL- 602	Discipline Specific Course-IV (Physics)	Quantum Mechanics	2	2	80	20	100
CGL- 601	Discipline Specific Course-III (Geography)	Geography	2	2	80	20	100
CGL- 602	Discipline Specific Course-IV (Geography)	Geography	2	2	80	20	100
CCL- 603(i) OR CCL- 603(ii)	Discipline Specific Course-III (Chemistry)	Organometallics and Bioorganic Chemistry OR Quantum Chemistry	2	2	80	20	100
CCL- 604(i) OR CCL- 604(ii)	Discipline Specific Course-IV (Chemistry)	Polynuclear Hydrocarbons and UV,IR Spectroscopy OR Spectroscopy and Photochemistry	2	2	80	20	100
CCS- 605	Skill Enhancement Course-IV (Chemistry)	Green Methods in Chemistry	2	2	50	50	100
CEL- 603(i) OR CEL- 603(ii) OR CEL- 603(iii)	Discipline Specific Course-III (Electronics)	Digital System Design OR Digital Signal Processing OR Photonic Devices	2	2	80	20	100
CEL- 604(i) OR CEL- 604(ii) OR CEL- 604(iii)	Discipline Specific Course-IV (Electronics)	VLSI Design OR Internet of Things OR Consumer Electronics	2	2	80	20	100
CCsL- 603	Discipline Specific Course-III (Computer Science)	Computer Graphics	2	2	80	20	100
CCsL- 604	Discipline Specific Course-IV (Computer Science)	Python Programming	2	2	80	20	100
CCaL- 603	Discipline Specific Course- III (Computer Applications)	Mobile Application Development	2	2	80	20	100
CCaL- 604	Discipline Specific Course- IV (Computer Applications)	Cloud Computing	2	2	80	20	100
CML- 605(i) OR CML- 605(ii)	Discipline Specific Course-IV (Mathematics)	Linear Algebra OR Bio-Mathematics	4	4	80	20	100
CML- 606(i) OR CML- 606(ii)	Discipline Specific Course-V (Mathematics)	Mechanics-II OR Queuing and Reliability Theory	4	4	80	20	100

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Behera

CML- 607(i) OR CML- 607(ii)	Discipline Specific Course-VI (Mathematics)	Real & Complex Analysis OR Optimization Techniques	4	4	80	20	100
CMS-608(i) OR CMS-608(ii)	Skill Enhancement Course-IV (Mathematics)	Solid Geometry OR Financial Mathematics	2	2	50	50	100
✓ CPP- 608	Practical-VI (Physics)	Physics Lab-VI	2	4	100	-	100
CGP- 608	Practical-VI (Geography)	Geography Lab-VI	2	4	100	-	100
○ CCP-609(i) OR CCP-609(ii)	Practical-VI (Chemistry)	Chemistry Lab-VI(i) OR Chemistry Lab-VI(ii)	2	4	100	-	100
CEP- 609(i) OR CEP- 609(ii) OR CEP- 609(iii)	Practical-VI (Electronics)	Digital System Design Lab OR Digital Signal Processing Lab OR Advance communication Lab	2	4	100	-	100
CCsP-609	Practical-VI (Computer Science)	Computer Lab-VI (Computer Graphics Lab)	2	4	100	-	100
CCaP-609	Practical-VI (Computer Applications)	Computer Lab- VI (Mobile Application Development)	2	4	100	-	100

Sum
14/6/19

Alexandra

CHOICE BASED CREDIT SYSTEM

(CBCS)

Guru Jambheshwar University of Science and Technology, Hisar

Scheme and Syllabi
for
(Third Semester Onwards)

Undergraduate Course:

B. SC. PHYSICAL SCIENCES

(PHYSICS/GEOGRAPHY, CHEMISTRY/
ELECTRONICS/ COMPUTER SCIENCE/ COMPUTER
APPLICATIONS, MATHEMATICS)

Under
The Faculty of Physical Sciences and Technology



w.e.f. Academic Session 2018-19

Stamps
14/6/19

Devedra

Credit Distribution for B.Sc. programme under Choice Based Credit System (CBCS)

		Core Courses (CC)	Discipline Specific courses(DSC)	Skill Enhancement Courses(SEC)	Total Credits (CC+DSC)	Theory + Practical+SEC
Theory (T): Practical(P)						
	Physics (T)	16	08	2	24	38
	Physics (P)	08	04		12	
	Geography(T)	16	08	2	24	38
	Geography(P)	08	04		10	
	Chemistry(T)	16	08	2	24	38
	Chemistry(P)	08	04		10	
	Electronics(T)	16	08	2	24	38
	Electronics(P)	08	04		10	
	Computer Science(T)	16	08	2	24	38
	Computer Science(P)	08	04		10	
	Computer Applications(T)	16	08	2	24	38
	Computer Applications(P)	06	04		10	
	Mathematics(T)	32	24	2	56	64
	Mathematics(P)	06	--		06	
Language skills		08	--	--	08	08
Awareness program		02	--	--	02	02
Total	PCM/GCsM/PEM/PCsM/PCaM(T)	60	40	06	100	140
	PCM/GCsM/PEM/PCsM/PCaM(P)	18	08		26	

Total Credits required to pass the course -140+10=150

Janani
14/6/19

Deevika

Semester wise Distribution of Credits

		I Sem.	II Sem.	III Sem.	IV Sem.	V Sem.	VI Sem.	Total credits
Language Skills								4
English(4)		2	2	--	--	--	--	4
Hindi(4)		--	--	2	2	--	--	
Awareness program								2
Env.Science(2)		2	--	--	--	--	--	
Subjects								24
Physics (38)	Theory	4	4	4	4	4	4	12
	Practical	2	2	2	2	2	2	2
	SEC	--	--	--	2	--	--	24
Chemistry(38)	Theory	4	4	4	4	4	4	12
	Practical	2	2	2	2	2	2	2
	SEC	--	--	--	--	2	--	2
Mathematics(64)	Theory	8	8	8	8	12	12	56
	Practical	1.5	1.5	1.5	1.5	--	--	6
	SEC	--	--	--	--	--	2	2
Geography(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	--	--	2
Electronics(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	2	--	2
Computer Science(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	--	--	2
Computer applications(38)	Theory	4	4	4	4	4	4	24
	Practical	2	2	2	2	2	2	12
	SEC	--	--	--	--	--	--	2
PCM/GCsM/PEM/PCsM/PCaM	Theory	16	16	16	16	20	20	104
	Practical	5.5	5.5	5.5	5.5	4	4	30
	SEC	--	--	--	2	2	2	06
Total credits/semester (three Subjects)		21.5	21.5	21.5	23.5	22	22	140

Sum
14/6/19

Aravinda

Note:

- (1) The subject combinations under B.Sc. (Physical Sciences) are :
 - (i) B.Sc. (Physical Sciences: Physics, Chemistry, Mathematics) ✓
 - (ii) B.Sc. (Physical Sciences: Geography, Computer Science, Mathematics)
 - (iii) B.Sc. (Physical Sciences: Physics, Electronics, Mathematics)
 - (iv) B.Sc. (Physical Sciences: Physics, Computer Science, Mathematics) ✓
 - (v) B.Sc. (Physical Sciences: Physics, Computer Applications, Mathematics)
- (2) The scheme and syllabus of Mathematics papers is also implemented to BA (with Mathematics) Courses. However, the marking scheme in case of BA courses (Mathematics Subject) will be same as decided by the concerned Board of Studies/Faculty of Humanities and Social Sciences.
- (3) For the students of B.Sc. Geography, the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Physics is to be replaced by the respective papers of the Geography; for Computer Science, the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Chemistry is to be replaced by respective papers of the Computer Sciences; for Electronics the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Chemistry is to be replaced by respective papers of the Electronics and similarly for Computer Applications, the Core Course(CC)/Discipline Specific Course(DSC)/Skill Enhancement Course (SEC) papers of Chemistry is to be replaced by respective papers of the Computer Applications as decided by the respective Board of studies/Faculty of Engineering and Technology.
- (4) Definition of Credit:
1 credit=1 Hr. Lecture (L) per week
1 credit= 2 Hrs. Practical (P) per week ✓
2 Hrs. = 3 periods of approx. 40/45 minutes ✓
- (5) Practical examinations (both odd and even semester's practicals of 100 marks each) to be held annually with even semesters. The marks of Odd semester practicals may be reflected in the DMC of Even semester with code and nomenclature, to be shown separately for each semester.
- (6) The distribution of internal assessment marks of 20 is based on the marks obtained by the student in one Minor test of 12 marks to be conducted preferably in the month of November for Odd Semester and in the month of April for Even Semester. A student is required to pass the individual paper with 35% marks overall including internal assessment based on minor test. He may not be given any additional chance for minor test. However, the student also needs to pass the external examination individually with 35% marks. There will be maximum 4 marks for attendance (1 mark for attendance of 71-75%, 2 marks for attendance of 76-80%, 3 marks for attendance of 81-85% and 4 marks for attendance above 85%). The remaining 4 marks are for Extra-curricular activities including assignments.
- (7) The Batches of 20 or more can be opted for various courses as per requirement for all practical purposes by the college/institution. The evaluation of Practical may be distributed as 20% marks for lab record, 50% marks for performance during the examination and 30% marks for Viva Voce examination.] ?
- (8) SWAYAM-MOOCs (Study Webs of Active Learning for young Aspiring Minds-Massive Online Open Courses)/NPTEL(National Programme on Technology Enhanced Learning) can be opted by the candidate either under DSC or SEC for maximum upto 12 credits (Two DSCs or One DSC and one SEC).
- (9) SEC courses: One SEC by Physics department in Forth semester, One SEC has to be offered by Chemistry in fifth semester and One SEC has to be offered by Mathematics in Sixth semester. All SECs will be of 50(Internal):50(External)marks. The internal marks will be based on practical aspect of skill enhancement.]

24/11/19

Alexandra

The consolidated scheme and syllabi of Three Years of B.Sc. (Physical Sciences: Physics/Geography, Chemistry/Electronics/Computer Science/Computer Applications, Mathematics) is as under:

Paper Code	Course opted	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
CXL- 101	Language Skills Compulsory Course-I	English-I	2	2	80	20	100
✓ CPL- 102	Core Course-I (Physics)	Mechanics-I	2	2	80	20	100
✓ CPL- 103	Core Course-II (Physics)	Electricity and Magnetism-I	2	2	80	20	100
CGL- 102	Core Course-I (Geography)	Physical Geography-I	2	2	80	20	100
CGL- 103	Core Course-II (Geography)	Physical Geography-II	2	2	80	20	100
CCl- 104	Core Course-I (Chemistry)	Inorganic Chemistry-I(Atomic structure and Bonding)	2	2	80	20	100
CCl- 105	Core Course-II (Chemistry)	Organic Chemistry-I(General Organic Chemistry and Aliphatic Hydrocarbons)	2	2	80	20	100
CEL- 104	Core Course-I (Electronics))	Network Analysis and Electronic Devices	2	2	80	20	100
CEL- 105	Core Course-II (Electronics))	Analog Electronics	2	2	80	20	100
CCsL- 104	Core Course-I (Computer Science)	Fundamentals of Computer	2	2	80	20	100
CCsL- 105	Core Course-II (Computer Science)	Programming in 'C'	2	2	80	20	100
CCaL- 104	Core Course- I (Computer Applications)	Computer Fundamentals and Operating System	2	2	80	20	100
CCaL- 105	Core Course- II (Computer Applications)	Office Automation Tools	2	2	80	20	100
CML- 106	Core Course-I (Mathematics) ✓	Algebra	4	4	80	20	100
CML- 107	Core Course-I (Mathematics) ✓	Calculus	4	4	80	20	100
CYL- 111	Awareness Program Compulsory Course	Environmental Studies	2	2	80	20	100
✓ CPP- 108*	Practical-I (Physics)	Physics Lab-I	2	4	100	-	100
CGP- 108*	Practical-I (Geography)	Geography Lab-I	2	4	100	-	100
CCP- 109*	Practical-I (Chemistry)	Chemistry Lab-I	2	4	100	-	100
CEP- 109*	Practical-I (Electronics)	Electronics Lab-I (Network Analysis and Analog Electronics)	2	4	100	-	100
CCsP- 109*	Practical-I (Computer Science)	Computer Lab-I (Based on Fundamentals of Computer & Programming in 'C')	2	4	100	-	100
CCaP- 109*	Practical- I (Computer Applications)	Computer Lab-I	2	4	100	-	100
CMP- 110*	Practical-I (Mathematics) ✓	Mathematics Lab-I	1.5	3	100	-	100

- The practical examination to be conducted annually with Second semester examination.

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Semester-II

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
CXL- 201	Language Skills Compulsory Course-II	English-II	2	2	80	20	100
✓ CPL- 202	Core Course-III (Physics)	Mechanics-II	2	2	80	20	100
✓ CPL- 203	Core Course-IV (Physics)	Electricity, Magnetism and Electromagnetic Theory -II	2	2	80	20	100
CGL- 202	Core Course-III (Geography)	Human Geography-I	2	2	80	20	100
CGL- 203	Core Course-IV (Geography)	Human Geography-II	2	2	80	20	100
0 CCL- 204	Core Course-III (Chemistry)	Physical Chemistry- I (Chemical Energetics and Equilibria)	2	2	80	20	100
0 CCL- 205	Core Course-IV (Chemistry)	Organic Chemistry- II (Functional Group Organic Chemistry)	2	2	80	20	100
CEL- 204	Core Course-III (Electronics)	Linear and Digital Integrated circuits	2	2	80	20	100
CEL- 205	Core Course-IV (Electronics))	Digital Electronics	2	2	80	20	100
CCsL- 204	Core Course-III (Computer Science)	Data Structure using 'C'	2	2	80	20	100
CCsL- 205	Core Course-IV (Computer Science)	Computer Organisation	2	2	80	20	100
CCaL- 204	Core Course- III (Computer Applications)	Information Technology	2	2	80	20	100
CCaL- 205	Core Course- IV (Computer Applications)	Programming in 'C'	2	2	80	20	100
CML- 206	Core Course-III (Mathematics)	Ordinary Differential Equations and Laplace Transformations	4	4	80	20	100
CML- 207	Core Course-IV (Mathematics)	Vector Calculus and Geometry	4	4	80	20	100
✓ CPP- 208	Practical-II (Physics)	Physics Lab-II	2	4	100	-	100
CGP- 208	Practical-II (Geography)	Geography Lab-II	2	4	100	-	100
0 ✓ CPP-209	Practical-II (Chemistry)	Chemistry Lab-II	2	4	100	-	100
CEP-209	Practical-II (Electronics)	Linear Integrated circuits and Digital Electronics Lab	2	4	100	-	100
CCsP-209	Practical-II (Computer Science)	Computer Lab-II (Based on Data Structure using 'C')	2	4	100	-	100
CCaP-209	Practical-II (Computer Applications)	Computer Lab- II	2	4	100	-	100
CMP-210	Practical-II (Mathematics)	Mathematics Lab-II	1.5	3	100	-	100

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Semester-III

Paper Code	Course opted	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
CXL- 301	Language Skills Compulsory Course-III	Hindi-I	2	2	80	20	100
CPL- 302	Core Course-V (Physics)	Heat and Thermodynamics	2	2	80	20	100
CPL- 303	Core Course-VI (Physics)	Semiconductor Devices	2	2	80	20	100
CGL-302	Core Course-V (Geography)	Geography of India	2	2	80	20	100
CGL- 303	Core Course-VI (Geography)	Regional Planning with special reference to Haryana	2	2	80	20	100
CCL- 304	Core Course-V (Chemistry)	Physical Chemistry-II (Solutions, Phase Equilibrium, Conductance & Electrochemistry)	2	2	80	20	100
CCL- 305	Core Course-VI (Chemistry)	Organic Chemistry-III (Functional Group Organic Chemistry-II)	2	2	80	20	100
CEL- 304	Core Course-V (Electronics))	Communication Electronics-I	2	2	80	20	100
CEL- 305	Core Course-VI (Electronics))	Microprocessor	2	2	80	20	100
CCSL- 304	Core Course-V (Computer Science)	Database Management System	2	2	80	20	100
CCSL- 305	Core Course-VI (Computer Science)	Operating System	2	2	80	20	100
CCAL- 304	Core Course- V (Computer Applications)	Web Development	2	2	80	20	100
CCAL- 305	Core Course- VI (Computer Applications)	Operating System	2	2	80	20	100
CML- 306	Core Course-V (Mathematics) ✓	Advanced Calculus	4	4	80	20	100
CML- 307	Core Course-VI (Mathematics) ✓	Numerical Analysis	4	4	80	20	100
✓ CPP- 308*	Practical-III (Physics)	Physics Lab-III	2	4	100	-	100
CGP- 308*	Practical-III (Geography)	Geography Lab-III	2	4	100	-	100
CCP- 309*	Practical-III (Chemistry)	Chemistry Lab-III	2	4	100	-	100
CEP- 309*	Practical-III (Electronics)	Communication Electronics Lab-III	2	4	100	-	100
CCCP- 309*	Practical-III (Computer Science)	Computer Lab-III (DBMS Lab)	2	4	100	-	100
CCAP-309*	Practical- III (Computer Applications)	Computer Lab-III (Web Development Lab)	2	4	100	-	100
CMP- 310*	Practical-III (Mathematics) ✓	Mathematics Lab-III	1.5	3	100	-	100

- The practical examination to be conducted annually with Fourth semester examination.

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Semester-IV

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
CXL- 401	Language Skills Compulsory Course-IV	Hindi-II	2	2	80	20	100
✓ CPL- 402	Core Course-VII (Physics)	Statistical Mechanics	2	2	80	20	100
✓ CPL- 403	Core Course-VIII (Physics)	Waves and Optics	2	2	80	20	100
CGL- 402	Core Course-VII (Geography)	Environmental Geography	2	2	80	20	100
CGL- 403	Core Course-VIII (Geography)	Geography of Disaster	2	2	80	20	100
○ CCL- 404	Core Course-VII (Chemistry)	Inorganic Chemistry-II(Transition Metals & Coordination Chemistry)	2	2	80	20	100
○ CCL- 405	Core Course-VIII (Chemistry)	Physical Chemistry-III(States of Matter & Chemical Kinetics)	2	2	80	20	100
CEL- 404	Core Course-VII (Electronics)	Communication Electronics-II	2	2	80	20	100
CEL- 405	Core Course-VIII (Electronics))	Microcontroller	2	2	80	20	100
CCsL- 404	Core Course-VII (Computer Science)	Software Engineering	2	2	80	20	100
CCsL- 405	Core Course-VIII (Computer Science)	Computer Networks	2	2	80	20	100
CCaL- 404	Core Course- VII (Computer Applications)	Database Management System	2	2	80	20	100
CCaL- 405	Core Course- VIII (Computer Applications)	Data Analysis	2	2	80	20	100
CML- 406	Core Course-VII (Mathematics)	Partial Differential Equations & Special Functions	4	4	80	20	100
CML- 407	Core Course-VIII (Mathematics)	Mechanics-I	4	4	80	20	100
✓ CPP- 408*	Practical-IV (Physics)	Physics Lab-IV	2	4	100	-	100
✓ CPS- 409	Skill Enhancement Course-I (Physics)	Electrical Circuits and Network Skills	2	<u>2</u>	50	50	100
CGP- 408	Practical-IV (Geography)	Geography Lab-IV	2	4	100	-	100
○ CCP-409	Practical-IV (Chemistry)	Chemistry Lab-IV	2	4	100	-	100
CEP-409	Practical-IV (Electronics)	Microprocessor and Microcontroller Lab-IV	2	4	100	-	100
CCsP-409	Practical-IV (Computer Science)	Computer Lab-IV (Computer Networks lab)	2	4	100	-	100
CCaP-409	Practical-IV (Computer Applications)	Computer Lab- IV (DBMS Lab)	2	4	100	-	100
CMP-410	Practical-IV (Mathematics)	Mathematics Lab-IV	1.5	3	100	-	100

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Semester-V

Paper Code	Course opted	Nomenclature	Credits	Hr/ week	Marks		
					Ext.	Int.	Total
✓ CPL- 501	Discipline Specific Course-I (Physics)	Elements of Modern Physics	2	2	80	20	100
✓ CPL- 502	Discipline Specific Course -II (Physics)	Nuclear Physics	2	2	80	20	100
CGL-501	Discipline Specific Course-I (Geography)	Geography	2	2	80	20	100
CGL- 502	Discipline Specific Course-II (Geography)	Geography	2	2	80	20	100
○ CCL- 503(i) OR CCL- 503(ii)	Discipline Specific Course-I (Chemistry)	Polymer Chemistry-I OR Chemistry of Main Group Elements, Theories of Acids and Bases-I	2	2	80	20	100
○ CCL- 504(i) OR CCL- 504(ii)	Discipline Specific Course-II (Chemistry)	Polymer Chemistry-II OR Chemistry of Main Group Elements-II	2	2	80	20	100
○ CCS- 505(i) OR CCS- 505(ii)	Skill Enhancement Course-I(Chemistry)	Pesticide Chemistry OR Fuel Chemistry	2	2	50	50	100
CEL- 503(i) OR CEL- 503(ii) OR CEL- 503(iii)	Discipline Specific Course-I (Electronics)	Electronic Instrumentation-I OR Signal and System OR Semiconductor Devices Fabrication	2	2	80	20	100
CEL- 504(i) OR CEL- 504(ii) OR CEL- 504(iii)	Discipline Specific Course-II (Electronics))	Electronic Instrumentation-II OR Programming with Sci Lab/Mat lab OR Antenna Theory	2	2	80	20	100
CEL- 505(i) OR CEL- 505(ii) OR CEL- 505(iii)	Skill Enhancement Course-III (Electronics)	PCB Design and Fabrication OR Robotics OR Mobile Application Programming	2	2	50	50	100
CCsL- 503	Discipline Specific Course-I (Computer Science)	Object Oriented Programming using C++	2	2	80	20	100
CCsL- 504	Discipline Specific Course-II (Computer Science)	Data Analytics	2	2	80	20	100
CCaL- 503	Discipline Specific Course- I (Computer Applications)	Object Oriented Programming using Java	2	2	80	20	100
CCaL- 504	Discipline Specific Course- II (Computer Applications)	Computer Networks	2	2	80	20	100

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CML- 506(i) OR CML- 506(ii)	Discipline Specific Course-I (Mathematics)	Groups and Rings OR Sampling Techniques	4	4	80	20	100
CML- 507(i) OR CML- 507(ii)	Discipline Specific Course-II (Mathematics)	Sequence & Series OR Sample Survey and Design of Experiments	4	4	80	20	100
CML- 508(i) OR CML- 508(ii)	Discipline Specific Course-III (Mathematics)	Number Theory & Trigonometry OR Integer programming & Theory of Games	4	4	80	20	100
✓ D CIP- 508*	Practical-V (Physics)	Physics Lab-V	2	4	100	-	100
CIP- 508*	Practical-V (Geography)	Geography Lab-V	2	4	100	-	100
CIP- 509(i)* OR CIP- 509(ii)	Practical-V (Chemistry)	Chemistry Lab-V(i) OR Chemistry Lab-V(ii)	2	4	100	-	100
CIP- 509(i)* OR CIP- 509(ii)* OR CIP- 509(iii)*	Practical-V (Electronics)	Electronic Instrumentation Lab OR Signal and System Lab OR Electronics skill lab	2	4	100	-	100
CCsP- 509*	Practical-V (Computer Science)	Computer Lab-V (Object Oriented Programming using C++ Lab)	2	4	100	-	100
CCaP-509*	Practical-V (Computer Applications)	Computer Lab-V (Object Oriented Programming using Java)	2	4	100	-	100

- The practical examination to be conducted annually with Sixth semester examination.

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Semester-VI

Paper Code	Course opted	Nomenclature	Credits	Hr/week	Marks		
					Ext.	Int.	Total
CPL- 601	Discipline Specific Course-III (Physics)	Solid State Physics	2	2	80	20	100
CPL- 602	Discipline Specific Course-IV (Physics)	Quantum Mechanics	2	2	80	20	100
CGL- 601	Discipline Specific Course-III (Geography)	Geography	2	2	80	20	100
CGL- 602	Discipline Specific Course-IV (Geography)	Geography	2	2	80	20	100
CCL- 603(i) OR CCL- 603(ii)	Discipline Specific Course-III (Chemistry)	Organometallics and Bioorganic Chemistry OR Quantum Chemistry	2	2	80	20	100
CCL- 604(i) OR CCL- 604(ii)	Discipline Specific Course-IV (Chemistry)	Polynuclear Hydrocarbons and UV,IR Spectroscopy OR Spectroscopy and Photochemistry	2	2	80	20	100
CCS- 605	Skill Enhancement Course-IV (Chemistry)	Green Methods in Chemistry	2	2	50	50	100
CEL- 603(i) OR CEL- 603(ii) OR CEL- 603(iii)	Discipline Specific Course-III (Electronics)	Digital System Design OR Digital Signal Processing OR Photonic Devices	2	2	80	20	100
CEL- 604(i) OR CEL- 604(ii) OR CEL- 604(iii)	Discipline Specific Course-IV (Electronics)	VLSI Design OR Internet of Things OR Consumer Electronics	2	2	80	20	100
CCsL- 603	Discipline Specific Course-III (Computer Science)	Computer Graphics	2	2	80	20	100
CCsL- 604	Discipline Specific Course-IV (Computer Science)	Python Programming	2	2	80	20	100
CCaL- 603	Discipline Specific Course- III (Computer Applications)	Mobile Application Development	2	2	80	20	100
CCaL- 604	Discipline Specific Course- IV (Computer Applications)	Cloud Computing	2	2	80	20	100
CML- 605(i) OR CML- 605(ii)	Discipline Specific Course-IV (Mathematics)	Linear Algebra OR Bio-Mathematics	4	4	80	20	100
CML- 606(i) OR CML- 606(ii)	Discipline Specific Course-V (Mathematics)	Mechanics-II OR Queuing and Reliability Theory	4	4	80	20	100

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CML- 607(i) OR CML- 607(ii)	Discipline Specific Course-VI (Mathematics)	Real & Complex Analysis OR Optimization Techniques	4	4	80	20	100
CMS-608(i) OR CMS-608(ii)	Skill Enhancement Course-IV (Mathematics)	Solid Geometry OR Financial Mathematics	2	2	50	50	100
✓ CPP- 608	Practical-VI (Physics)	Physics Lab-VI	2	4	100	-	100
CGP- 608	Practical-VI (Geography)	Geography Lab-VI	2	4	100	-	100
○ CCP-609(i) OR CCP-609(ii)	Practical-VI (Chemistry)	Chemistry Lab-VI(i) OR Chemistry Lab-VI(ii)	2	4	100	-	100
CEP- 609(i) OR CEP- 609(ii) OR CEP- 609(iii)	Practical-VI (Electronics)	Digital System Design Lab OR Digital Signal Processing Lab OR Advance communication Lab	2	4	100	-	100
CCsP-609	Practical-VI (Computer Science)	Computer Lab-VI (Computer Graphics Lab)	2	4	100	-	100
CCaP-609	Practical-VI (Computer Applications)	Computer Lab- VI (Mobile Application Development)	2	4	100	-	100

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