SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Programming in C		
Course Code	BSCS0101[T]		
Course Outcomes & Bloom's Level	**CO1-** To Remember the basics of Computer Knowledge.**(BL1-Remember)** **CO2-** To Understand debugging and testing, implementation and maintenance.**(BL2-Understand)** **CO3-** To apply the various techniques for C Programming.**(BL3-Apply)** **CO4-** To analysis modular programming**(BL4-Analyze)** **CO5-** To Evaluate Students will learn to write algorithm for solutions to various real-life problems.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
CO4	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Basics of Computer and information technology		
Course Code	BSCS0102[T]		
Course Outcomes & Bloom's Level	**CO1-** To Remember the basics of Computer Knowledge.**(BL1-Remember)** **CO2-** Understand basic concepts and terminology of information technology.**(BL2-Understand)** **CO3-** To apply the various techniques for Basics Computer Knowledge.**(BL3-Apply)** **CO4-** To analysis of MS Ofiice in Windows and other OS.**(BL4-Analyze)** **CO5-** To evaluate the study problem of application programmings by using the different types of Software and solve base problems which arise in all applied sciences.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
CO2	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-
CO3	-	-	-	-	3	-	-	3	-	-	-	-	-	-	-
CO4	-	-	4	4	-	-	-	-	-	-	-	-	-	-	-
CO5	5	-	-	-	5	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Calculus and Differential Equations		
Course Code	BSMA0101[T]		
Course Outcomes & Bloom's Level	**CO1-** To get insight of fundamental knowledge of Differential, integration and differential equation. **(BL1-Remember)** **CO2-** To understand various techniques to solve real life problems through examples. **(BL2-Understand)** **CO3-** To apply notation of derivative in identifying increasing/ decreasing function, extreme values, concavity, convexity and also higher order derivatives which arise in all applied sciences.**(BL3-Apply)** **CO4-** To analyze behavior of curve through tracing and solution of ordinary differential equation.**(BL4-Analyze)** **CO5-** To evaluate Area, Quadrature, Rectification and Orthogonal trajectories of curves.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	-	2	2	-	1	-	-	-	-	1	-	1
CO2	3	3	1	3	3	2	-	1	-	1	-	-	2	-	2
CO3	3	2	-	1	3	-	-	-	-	-	-	-	1	3	2
CO4	3	2	-	2	-	-	-	-	-	-	-	-	-	3	1
CO5	2	2	-	1	-	-	-	-	-	-	-	-	-	2	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Properties of Matter		
Course Code	BSPH0101[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the basic laws of Properties of Matter. **(BL1-Remember)** **CO2-** Understand the basic concepts of Properties of Matter **(BL2-Understand)** **CO3-** To enable students to apply the Laws of Properties of Matter **(BL3-Apply)** **CO4-** To analyze the applications of Laws of Properties of Matter**(BL4-Analyze)** **CO5-** To evaluate the laws of Properties of Matter and its application to various mechanical systems.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	3	3	2	-	1	1	-	-	-	-	-
CO2	2	-	3	-	-	-	-	-	-	-	-	-	-	-	-
CO3	2	3	3	3	3	-	-	-	-	-	-	-	-	-	-
CO4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	1	-	-	3	-	2	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	India in 21st centuary		
Course Code	VAC0101[T]		
Course Outcomes & Bloom's Level	**CO1-** 1. Students are able to define, identify and explain the process of Indian Freedom movement and development of political Institutions.**(BL1-Remember)** **CO2-** 2. Students are able to summarize and extract the time before Independence and after Independence India.**(BL2-Understand)** **CO3-** 3. Students are able to evaluate India society, Its nature and agencies of social change with reference to modernization.**(BL5-Evaluate)** **CO4-** 4. Students are able to write the historical accounts that shaped the very nature and character of 20 and 21 st century India with reference to Nation Building and constitution**(BL6-Create)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✓ Human Values ✓ Environment ✕	**SDG (Goals)**	SDG3(Good health and well-being) SDG4(Quality education) SDG5(Gender equality) SDG10(Reduced inequalities) SDG12(Responsible consuption and production) SDG13(Climate action)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	2	2	2	1	1	-	2	1	-	-
CO2	-	-	-	-	-	1	2	2	1	2	-	1	-	-	-
CO3	-	-	-	-	-	1	2	1	1	1	-	1	-	1	1
CO4	-	-	-	-	-	1	3	1	1	1	-	1	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Hindi	
Course Code	AEC0101[T]	
Course Outcomes & Bloom's Level	**CO1-** भारतीय ज्ञान परम्परा सेवि द्यार्थि यर्थि ों को अवगत कराना**(BL1-Remember)** **CO2-** सांस्कृतिक ,एवं राष्ट्रिय एकता।।**(BL3-Apply)** **CO3-** भाषा अध्ययन एवं अध्यापन का उद्देश्य विद्यार्थियों के सर्वांगीण विकास में सहायक है। छात्र जीविकोपार्जन के लक्ष्यों का सहज संधान कर सके । जीविकोपार्जन के लक्ष्यों का सहज संधान कर सके । **(BL2-Understand)** **CO4-** पाठ्यक्रम में व्याकरण ,सामान्य तथा पारम्परिक साहित्य , लेखन परम्परा का बोध करना एवं समग्र व्यक्तित्व का विकास करना है। **(BL3-Apply)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	-	-	2	-	-	-	-	2	-	-	-	-	-	-
CO2	-	2	-	-	-	2	-	1	-	-	-	-	-	-	-
CO3	2	-	-	1	-	-	-	-	-	2	-	-	-	-	-
CO4	2	-	-	-	-	2	-	-	1	-	-	-	-	-	-
CO5	1	-	-	-	1	-	-	2	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	NCC		
Course Code	NCC0101[T]		
Course Outcomes & Bloom's Level	**CO1-** Develop the qualities of social skills.**()** **CO2-** Imbibe leadership qualities. **()** **CO3-** Be motivated to serve the nation by joining Armed forces. **()** **CO4-** Contribute in environmental awareness and conservation activities**()** **CO5-** Keep abreast of current affairs & general awareness.**()** **CO6-** Effectively contribute in managing disaster relief tasks**()**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✓	**SDG (Goals)**	SDG3(Good health and well-being) SDG4(Quality education) SDG6(Clean water and sanitation) SDG13(Climate action) SDG15(Life on land)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Operating System		
Course Code	BSCS0201[T]		
Course Outcomes & Bloom's Level	**CO1-** To Remember the basics of Computer Knowledge.**(BL1-Remember)** **CO2-** To Understand the concept of System Programmer's view**(BL2-Understand)** **CO3-** To apply the various techniques of Operating system in the field of Computer Science**(BL3-Apply)** **CO4-** To analysis of Inter-process Communication and Synchronization of Operating system.**(BL4-Analyze)** **CO5-** To evaluate the study problem from application point of view by using the results of the different algorithms and solve real life base problems which arise in all applied sciences**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	2	-	-	2	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	3	-	-	-	3	-	-	-	-	-	-
CO4	-	4	-	-	-	-	-	-	-	4	-	-	-	-	-
CO5	-	-	-	5	-	5	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	DBMS		
Course Code	BSCS0202[T]		
Course Outcomes & Bloom's Level	**CO1-** To Remember the basics of Computer Knowledge.**(BL1-Remember)** **CO2-** To Understand the basic theory of the relational model and both its strengths and weaknesses**(BL2-Understand)** **CO3-** To apply the various techniques of SQL programs in the field of Computer Science**(BL3-Apply)** **CO4-** To analysis of design entity-relationship diagrams to represent simple database application scenarios**(BL4-Analyze)** **CO5-** To evaluate the study problem from User point of view by using the results of the different SQL Programs and Familiar with various recent trends in the database area. **(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
CO3	3	-	-	-	3	-	-	-	-	-	-	-	-	-	-
CO4	-	4	-	-	-	-	-	-	-	-	-	4	-	-	-
CO5	-	-	5	-	5	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Abstract Algebra		
Course Code	BSMA0201[T]		
Course Outcomes & Bloom's Level	**CO1-** CO1: To remember the basic knowledge of the Groups, Subgroups, Normal Subgroups, Cyclic Groups, Homomorphism and Isomorphism of groups, Automorphisms, Ring and Field.**(BL1-Remember)** **CO2-** CO2: To understand the fundamental concept and properties of Groups, Rings, Fields and integral domains.**(BL2-Understand)** **CO3-** CO3: To apply the knowledge of groups, rings, fields and integral domains in all the fields of learning including higher research and extensions.**(BL3-Apply)** **CO4-** CO4: To analyze and solve the well-defined problems in mathematics related to the different groups, rings, and fields.**(BL4-Analyze)** **CO5-** CO5: To evaluate the studied problems from application point of view by using the results of the different theorems.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	3	-	-	-	-	1	-	-	-	-	-	-
CO2	1	-	-	2	-	-	-	-	1	-	-	-	-	-	-
CO3	-	2	-	-	1	-	-	-	-	2	-	-	-	-	-
CO4	2	-	1	-	-	-	-	2	-	-	-	-	-	-	-
CO5	1	-	-	2	-	-	-	2	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Thermodynamics and Kinetic Theory of Gases		
Course Code	BSPH0201[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the basic laws of Thermodynamics and Kinetic theory of Gases**(BL1-Remember)** **CO2-** Understand the basic concepts of Thermodynamics and Kinetic theory of Gases**(BL2-Understand)** **CO3-** To apply the concepts of Thermodynamics and Kinetic theory of Gases to different system**(BL3-Apply)** **CO4-** To Analyze the laws of Thermodynamics and Kinetic theory of Gases **(BL4-Analyze)** **CO5-** To evaluate the laws of thermodynamics and Kinetic theory of Gases**(BL5-Evaluate)**		
Course Elements	Skill Development ✕ Entrepreneurship ✓ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	2	2	1	-	-	-	-	-	-	-	-
CO2	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-
CO3	1	3	-	2	2	-	-	-	-	-	-	-	-	-	-
CO4	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	1	-	-	3	-	2	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	SEC-2		
Course Code	SEC0201		
Course Outcomes & Bloom's Level	**CO1-** 1.At the end of this course, students would be intellectually well equipped to have a sense of modern Indian history and culture . 2. The students will have an understanding of making of India as a nation . 3.The students will have an understanding of salient features of modern India . 4.It will help students to develop their personality and thinking horizon for being a good and concerned Indian citizen **(BL5-Evaluate)**		
Course Elements	Skill Development ✕ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✕	**SDG (Goals)**	SDG4(Quality education) SDG5(Gender equality) SDG11(Sustainable cities and economies) SDG15(Life on land)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Environmental Studies		
Course Code	BSFC0201[T]		
Course Outcomes & Bloom's Level	**CO1-** -The course shall develop in student the scientific background needed to understand how the earth works and how we, as human beings, fit into that.**(BL1-Remember)** **CO2-** At the end of the course, it is expected that students will be able to identify and analyze environmental problems as well as the risks associated with these problems. **(BL2-Understand)** **CO3-** Ability to distinguish between various methods of various pollution analysis.**(BL3-Apply)** **CO4-** Students acquire skills for to communicate, prepare, plan and implement the environmental management project.**(BL4-Analyze)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✓	**SDG (Goals)**	SDG3(Good health and well-being) SDG5(Gender equality) SDG6(Clean water and sanitation) SDG7(Affordable and clean energy) SDG11(Sustainable cities and economies) SDG12(Responsible consuption and production) SDG13(Climate action) SDG14(Life below water) SDG15(Life on land)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	2	-	-	-	-	1	-	-	-	-	-	1	2	3
CO2	1	-	-	-	-	-	1	-	-	-	-	-	1	-	1
CO3	1	2	-	-	-	-	1	-	-	-	-	-	1	2	-
CO4	1	2	-	2	-	-	-	2	-	-	-	-	1	2	3
CO5	1	2	-	-	-	-	-	2	-	-	-	-	1	-	3
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	English-I		
Course Code	AEC0201[T]		
Course Outcomes & Bloom's Level	**CO1-** Determine interpersonal skills and be an effective goal-oriented team player**(BL1-Remember)** **CO2-** Elaborate creativity and lateral thinking**(BL2-Understand)** **CO3-** Examine attitudes, emotional intelligence and understand its influence on behavior**(BL3-Apply)** **CO4-** Justify approaches to conflict resolution.**(BL4-Analyze)** **CO5-** Evaluate goal setting, management, decision-making skills.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	-	2	2	-	-	-	2	-	-	1	-	1
CO2	2	2	1	2	2	2	-	-	-	2	-	-	1	-	3
CO3	2	1	1	-	1	-	-	-	-	2	-	-	3	2	3
CO4	3	2	-	2	1	-	-	-	-	2	-	-	2	3	3
CO5	3	2	-	2	1	-	-	-	-	2	-	-	2	2	3
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	NCC (optional)		
Course Code	NCC0201[T]		
Course Outcomes & Bloom's Level	**CO1-** Develop the qualities of social skills.**()** **CO2-** Imbibe leadership qualities. **()** **CO3-** Be motivated to serve the nation by joining Armed forces. **()** **CO4-** Contribute in environmental awareness and conservation activities**()** **CO5-** Keep abreast of current affairs & general awareness.**()** **CO6-** Effectively contribute in managing disaster relief tasks**()**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✓	**SDG (Goals)**	SDG3(Good health and well-being) SDG4(Quality education) SDG6(Clean water and sanitation) SDG13(Climate action) SDG15(Life on land)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Computer Networks		
Course Code	BSCS0301[T]		
Course Outcomes & Bloom's Level	**CO1-** Remembering the concepts of computer networks, their types.**(BL1-Remember)** **CO2-** Understand to the concept of Class full and Classless addressing Network address Translation, Mobile IP.**(BL2-Understand)** **CO3-** Apply to Unicast and Multicast Routing and Next Generation IP for networking. **(BL3-Apply)** **CO4-** Analyze the applications to address the issues of Networking Technologies.**(BL4-Analyze)** **CO5-** Evaluating to investigate routers, IP and Routing Algorithms in Network Layer**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
CO3	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Data Structure		
Course Code	BSCS0302[T]		
Course Outcomes & Bloom's Level	**CO1-** To Remember Have a comprehensive knowledge of the data structures**(BL1-Remember)** **CO2-** To Understand the importance of data and be able to identify the data requirements for an application**(BL2-Understand)** **CO3-** To apply have a practical experience of algorithmic design and implementation**(BL3-Apply)** **CO4-** To analysis develop projects requiring the implementation of various data structures.**(BL4-Analyze)** **CO5-** To Evaluate Have practical experience of developing applications that utilize data structures;**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
CO4	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Vector Analysis & Linear Algebra		
Course Code	BSMA0301[T]		
Course Outcomes & Bloom's Level	**CO1-** CO1: To get insight of fundamental knowledge of matrix, group theory and transformations.and basic concept of vector analysis **(BL1-Remember)** **CO2-** CO2: To understand various techniques to solve real life problems through examples.**(BL2-Understand)** **CO3-** CO3: To apply the concepts of matrix, vector space, linear transformation and Gauss theorem , stock theorem , green theorem and other concept of vector analysis on many branches of Physics, Engineering, Social sciences and Mathematics **(BL3-Apply)** **CO4-** CO4To analyze the concept of Gauss theorem , stock theorem , green theorem and other concept of vector analysis .**(BL4-Analyze)** **CO5-** CO5: To evaluate gradient ,divergence ,curl andInverse, Eigen value and Eigen vector of matrix **(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	-	2	2	-	1	-	-	-	-	-	-	-
CO2	3	3	1	3	3	2	-	-	-	-	-	-	-	-	-
CO3	3	2	-	1	3	-	-	-	-	-	-	-	-	-	-
CO4	3	2	-	2	-	-	-	-	-	-	-	-	-	-	-
CO5	2	2	-	1	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Optics		
Course Code	BSPH0301[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the basic laws of Optics**(BL1-Remember)** **CO2-** Understand the basic concepts of Optics**(BL2-Understand)** **CO3-** To apply the concepts of Optics to different system. **(BL3-Apply)** **CO4-** To Analyze the laws of Optics**(BL4-Analyze)** **CO5-** To evaluate the laws of Optics**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	2	3	2	1	-	-	-	-	-	-	-	-	-	-
CO2	2	1	3	2	-	-	-	-	-	-	-	-	-	-	-
CO3	2	1	3	2	2	-	-	-	-	-	-	-	-	-	-
CO4	1	2	3	2	2	-	-	-	-	-	-	-	-	-	-
CO5	2	1	3	2	2	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Object Oriented Programming Concept using C++		
Course Code	BSCS0401[T]		
Course Outcomes & Bloom's Level	**CO1-** To Remember the basics of C Programming Knowledge.**(BL1-Remember)** **CO2-** To Understand the concept of object oriented programming **(BL2-Understand)** **CO3-** To apply the various techniques for problem solving and will implement those ideas using C++ programs.**(BL3-Apply)** **CO4-** To analysis of C++ streams, Inheritance and Operator Overloading.**(BL4-Analyze)** **CO5-** To evaluate the aim of teaching this course is that students should have conceptual and practical knowledge of Object oriented methodology.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-
CO3	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
CO4	-	4	-	4	-	-	-	-	-	-	-	4	-	-	-
CO5	-	-	-	-	5	-	-	-	-	-	-	-	5	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Computer system organization		
Course Code	BSCS0402[T]		
Course Outcomes & Bloom's Level	**CO1-** Remembering : Basic computer architecture (Von Neumann Model) and functions of its various units**(BL1-Remember)** **CO2-** Understanding: Understand the basic operations of digital computer system, its microoperations .**(BL2-Understand)** **CO3-** Applying: Identify, compare and assess to Bus and memory, Register transfer logic and arithmetic operations, Summarize the types of micro operations.**(BL3-Apply)** **CO4-** Analyzing: different types of addressing modes, various types of IO mapping techniques .**(BL4-Analyze)** **CO5-** Evaluating: the performance issues of cache memory and virtual memory**(BL5-Evaluate)** **CO6-** Create and design various hardware and software logics to make a computer system like ALU, Memory, Bus, etc.(Design)**(BL6-Create)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	-	-	-	-	-	-	-	2	-	2
CO2	1	2	-	-	2	-	-	-	-	-	-	-	2	3	3
CO3	3	1	-	-	2	-	-	-	-	-	-	-	3	3	3
CO4	-	1	1	2	1	-	-	-	-	-	-	-	2	2	3
CO5	-	1	-	-	1	-	-	-	-	-	-	-	2	2	2
CO6	3	1	-	-	-	-	-	-	-	-	-	-	2	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Advance Calculus and Differential equations		
Course Code	BSMA0401[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember basic concept of Real Analysis ,Partial Differentiationwhich used in various problems of sciences. **(BL1-Remember)** **CO2-** To understand and identify the Convergence of sequences various test for convergence of sequences , limit ,continuity and differentiability of function partial differentiation, Envelops , maxima and minima , Double and Triple Integral volume and surface of solids.also**(BL2-Understand)** **CO3-** To apply the concept of limit continuity and differentiability partial differentiation ,Taylors theorem , LaGrange's method , double and triple integrals to solve various problems of physical and allied sciences**(BL3-Apply)** **CO4-** To analyze and draw connection among the ideas of LaGrange's theorem and Beta Gama function , volume and surface and there properties to solve various problems of physical and allied sciences also Analyze behavior of the solution of the well-defined problems of differentiation **(BL4-Analyze)** **CO5-** To evaluate Double and Triple integral , Partial differentiation , Convergence of series also identifying and provide the various applications related to them also **(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	-	-	-	2	2	-	2	-	-	-	-	1	-	1
CO2	3	3	1	3	3	2	-	1	-	1	-	-	2	-	2
CO3	3	2	-	1	3	-	-	-	-	-	-	-	1	3	2
CO4	3	2	-	2	-	-	-	-	-	-	-	-	-	3	1
CO5	2	1	-	1	-	-	-	-	-	-	-	-	-	2	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Electricity and Magnetism		
Course Code	BSPH0401{T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the basic laws of Electricity and Magnetism**(BL1-Remember)** **CO2-** Understand the basic concepts of Electricity and Magnetism**(BL2-Understand)** **CO3-** To apply the concepts of Electricity and Magnetism to different system. **(BL3-Apply)** **CO4-** To Analyze the laws of Electricity and Magnetism**(BL4-Analyze)** **CO5-** To evaluate the laws of Electricity and Magnetism**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	2	3	2	2	-	2	-	-	-	-	-	-	-	-
CO2	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-
CO3	2	2	2	3	1	-	1	-	-	-	-	-	-	-	-
CO4	1	1	3	2	3	-	-	-	-	-	-	-	-	-	-
CO5	3	2	1	1	1	-	3	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	AEC-IV		
Course Code	AEC0401[T]		
Course Outcomes & Bloom's Level	**CO1-** हिंदी भाषा एवं नैतिक मूल्यों को समझना**(BL1-Remember)** **CO2-** सांस्कृतिक ,एवं राष्ट्रिय एकता।।**()** **CO3-** भाषा अध्ययन एवं अध्यापन का उद्देश्य विद्यार्थियों के सर्वांगीण विकास में सहायक है। छात्र जीविकोपार्जन के लक्ष्यों का सहज संधान कर सके । जीविकोपार्जन के लक्ष्यों का सहज संधान कर सके । **()** **CO4-** पाठ्यक्रम में व्याकरण ,सामान्य तथा पारम्परिक साहित्य , लेखन परम्परा का बोध करना एवं समग्र व्यक्तित्व का विकास करना है। **()**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✕	**SDG (Goals)**	SDG3(Good health and well-being)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	-	1	-	-	-	3	-	-	-	-	-	-
CO2	-	-	3	-	-	-	2	1	-	-	-	-	-	-	-
CO3	-	1	-	-	2	-	-	-	2	-	-	-	-	-	-
CO4	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-
CO5	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Web Designing with PHP		
Course Code	BSCS0501[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember various Web Development Strategies using PHP and syntax rules of web Programming**(BL1-Remember)** **CO2-** To understand the basics of web architecture, Development techniques, knowledge about file system.**(BL2-Understand)** **CO3-** To implement: HTML, JavaScript and Arry, strings, database connectivity to create Web applications.**(BL3-Apply)** **CO4-** To analyze various Server-side programming techniques and OOPS Techniques**(BL4-Analyze)** **CO5-** To evaluate and improve the performance of the web application with the help of session handling Techniques**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	3	1	2	-	-	-	-	-	-	-	1	2	1
CO2	2	2	-3	2	1	-	-	-	-	-	-	-	2	2	2
CO3	2	1	1	1	3	-	-	-	-	-	-	-	1	2	1
CO4	1	2	-1	2	2	-	-	-	-	-	-	-	2	2	1
CO5	2	2	2	1	2	-	-	-	-	-	-	-	1	2	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Computer Oriented Statistical Methods		
Course Code	BSMA0501[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the data collection plans and basic tools of descriptive statistics **(BL1-Remember)** **CO2-** To analyze the relationship between two variables using scatter plot and Interpret a simple correlation. **(BL4-Analyze)** **CO3-** To apply the concept of sampling distribution of a statistic and hypothesis**(BL3-Apply)** **CO4-** TO Understand the concept of sampling distribution of a statistic and its properties, difference between parameter and statistic**(BL2-Understand)** **CO5-** To evaluate the correlation and regression analysis and measure of central tendency**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	-	2	2	-	-	-	-	-	-	1	-	1
CO2	3	3	1	3	3	2	-	-	-	1	-	-	2	-	2
CO3	3	2	-	1	3	-	-	-	-	-	-	-	1	3	2
CO4	3	2	-	2	-	-	-	-	-	-	-	-	-	3	1
CO5	2	2	-	1	-	-	-	-	-	-	-	-	-	2	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Java Programing		
Course Code	BSPH0502[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember various syntax rules of java programming**(BL1-Remember)** **CO2-** To understand various Object-Oriented Concepts, Exception handling, Multithreading, networking and database connectivity techniques**(BL2-Understand)** **CO3-** To implement java AWT and Swing and for GUI Programming and Event handling, java IO for Input and output handling, jdbc for database connectivity**(BL3-Apply)** **CO4-** To analyze various Error ,and Database Handling techniques to learn how to improve the performance of the java application**(BL4-Analyze)** **CO5-** To evaluate and compare various application Development techniques**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG4(Quality education) SDG8(Decent work and economic growth)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	3	2	-	-	-	-	-	-	-	-	-	1
CO2	2	2	1	1	2	-	-	-	-	-	-	-	3	-	3
CO3	1	1	1	-	1	-	-	-	-	-	-	-	3	2	3
CO4	-	2	-	2	1	-	-	-	-	-	-	-	3	3	3
CO5	-	1	-	-	1	-	-	-	-	-	-	-	2	3	3
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	AI and its Application		
Course Code	DSE1[T]		
Course Outcomes & Bloom's Level	**CO1-** Remember**(BL1-Remember)** **CO2-** Understand**(BL2-Understand)** **CO3-** Analyze**(BL3-Apply)** **CO4-** Apply**(BL4-Analyze)** **CO5-** Create**(BL6-Create)**		
Course Elements	Skill Development ✕ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG8(Decent work and economic growth)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	3	1	2	1	2	-	-	-	1	-	-	-
CO2	-	3	3	2	3	-	-	-	1	-	-	1	-	-	-
CO3	-	3	3	2	3	2	2	1	1	-	-	1	-	-	-
CO4	-	3	2	2	3	-	-	-	2	-	-	1	-	-	-
CO5	-	1	2	1	2	1	1	1	1	-	-	1	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Software Enineering		
Course Code	BSCS0601[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the basics of software engineering**(BL1-Remember)** **CO2-** To understand the basics characteristic's & crisis of software and process of software engineering systems**(BL2-Understand)** **CO3-** To implement various SDLC, ER, DFD models, to collect SRS, And understand the software.**(BL3-Apply)** **CO4-** To Analyze various various testing techniques and the concept of testing strategies**(BL4-Analyze)** **CO5-** To evaluate the the need of Software Maintenance and Software Project Management Software **(BL5-Evaluate)** **CO6-** To create the various Design Strategies, Architectural Design concept for better development of software.**(BL6-Create)**		
Course Elements	Skill Development ✕ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	1	-	-	-	-	-	-	-	1	-	2
CO2	1	-	-	-	1	2	-	-	-	-	-	-	1	2	3
CO3	2	1	-	-	1	-	-	-	-	-	-	-	3	2	3
CO4	2	2	-	3	1	-	-	-	-	-	-	-	3	2	3
CO5	2	2	-	2	1	-	-	-	-	-	-	-	3	2	3
CO6	1	1	2	3	2	2	-	-	-	2	-	-	3	3	3

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Python programming		
Course Code	BSCS0602[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the basic programming concept.**(BL1-Remember)** **CO2-** Understand the basics of Python like python origin downloading and installing and basic concepts of python.**(BL2-Understand)** **CO3-** Apply the various conditional and looping statement and functional programming. **(BL3-Apply)** **CO4-** Explain various objects numbers and sequence in python Analyze the concept of regular expression**(BL4-Analyze)** **CO5-** Evaluate the concept of object-oriented programming for better utilization of language**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG4(Quality education)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	-	-	2	2	-	-	-	-	1	-	1	-	1
CO2	1	1	-	2	2	2	-	-	-	2	-	-	1	2	3
CO3	-	2	-	-	-	-	-	-	-	-	-	-	3	2	3
CO4	-	2	-	2	1	-	-	-	-	-	-	-	3	2	3
CO5	-	2	-	2	1	-	-	-	-	-	-	-	3	2	3
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Cloud Computing		
Course Code	DSE0601[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the various technologies for information storage and management. **(BL1-Remember)** **CO2-** To understand the storage techniques, concepts of data center, data center infrastructure management and services. **(BL2-Understand)** **CO3-** To implement the setup of storage techniques such as RAID, LUN Masking at data center. Create the virtual server and virtualize the resources as on demand.**(BL3-Apply)** **CO4-** To analyze the functionality of data center or storage infrastructure as per policies. **(BL4-Analyze)** **CO5-** To evaluate the performance of data center or storage infrastructure on various performance parameters. **(BL5-Evaluate)**		
Course Elements	Skill Development ✕ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth) SDG10(Reduced inequalities)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	-	-	-	-	-	-	-	-	-	1	2	1
CO2	1	1	-	-	1	-	3	-	-	-	-	2	2	2	1
CO3	1	2	2	2	2	-	3	-	-	-	-	2	3	3	2
CO4	1	3	2	2	2	-	2	-	-	-	-	2	3	2	2
CO5	-	3	2	2	2	-	2	-	2	-	-	2	3	3	3
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Ethical Hacking Fundamental		
Course Code	DSE0602[T]		
Course Outcomes & Bloom's Level	**CO1-** An attendee will be able to remember the basics of computer networks, Network security, Threats in a network, social networks, attack domains and will be able to remember the defense mechanisms against all attacks. **(BL1-Remember)** **CO2-** An attendee will understand the risks of being on network and possible attacks that can be done on a machine over internet gaining access on devices over network, social networks IOT Devices and methods to secure them.**(BL2-Understand)** **CO3-** An attendee will be able to Apply the concepts learnt to identify the hardware and software vulnerabilities in sandbox environment, deploy an attack and will be able to develop countermeasures against attack vectors identified.**(BL3-Apply)** **CO4-** An attendee will be able to analyze the methods used to deploy an attack and design preventive measures for network devices against various attacks and learn about their functionalities.**(BL4-Analyze)** **CO5-** An attendee will be able to evaluate the methods used to exploit the attack vectors open for attacks over the network and record their performance in all possible domains.**(BL5-Evaluate)** **CO6-** An attendee will be able to Create / design systems/algorithms for identifying attacks, reporting them and preventing them over the communication network.**(BL6-Create)**		
Course Elements	Skill Development ✕ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth) SDG11(Sustainable cities and economies)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	2	1	-	-	-	-	-	-	-	-	-	3	2	1
CO2	1	1	1	2	1	-	-	-	-	-	-	-	2	3	1
CO3	2	1	1	2	2	-	-	-	-	-	-	-	3	2	1
CO4	1	1	1	2	3	-	-	-	-	-	-	-	1	3	1
CO5	2	2	2	-	-	-	-	-	-	-	-	-	3	2	1
CO6	-	2	1	-	-	-	-	-	-	-	-	-	1	2	1

SOS-BSc_ComputerScience

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Mobile Application Development		
Course Code	DSE0603[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember various syntax rules of the programming language such as java and XML**(BL1-Remember)** **CO2-** CO2: To understand Object Oriented concepts for Android and various mobile application development concepts including interface designing, handling multiple activities.**(BL2-Understand)** **CO3-** To implement XML, Java and mysql for database connectivity and file system. **(BL3-Apply)** **CO4-** To analyze various widgets and learn to use them as per the problem.**(BL4-Analyze)** **CO5-** To develop solutions for real world problems using android application development.**(BL5-Evaluate)**		
Course Elements	Skill Development ✕ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth) SDG10(Reduced inequalities) SDG11(Sustainable cities and economies)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	-	-	-	-	-	-	-	1	1	2
CO2	1	-	-	-	2	-	-	-	-	-	-	-	3	2	2
CO3	2	-	-	-	1	-	2	-	-	-	-	-	3	2	2
CO4	-	-	-	2	2	2	-	2	-	-	1	1	2	2	2
CO5	-	-	1	-	-	2	-	1	-	-	-	-	2	2	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-