Department of Computer Science

Kalindi College, University of Delhi

Course Details: 2023-2024

I. B.Sc.(Hons) Computer Science

Year	Sem	Core	Elective (DSE)	Generic	SEC	Internship/Apprentice-ship/Project/Community outreach	Value Added Course	AEC
1st	I	Programming using Python Computer System Architecture Mathematics for Computing		GE1 (a) Programming using C++ (b) Programming with python	Choose one from a pool of courses*		Choose one from a pool of courses	(Choose One from a pool of courses)
	II	Object Oriented Programming with C++ Discrete Mathematical Structures Probability for Computing		GE2 (a) Data Analysis and Visualization using python (b) Data Analysis and Visualization using spreadsheet.	Choose one from a pool of courses*		Choose one from a pool of courses	(Choose One from a pool of courses)

Students on exit shall be awarded Undergraduate Certificate (in the field of Study/ Discipline) after securing the requisite 44 credits in Semesters I and II

Year	Sem	Core	Elective (DSE)	Generic	SEC	Internship/Apprentice-ship/Project/Community outreach	Value Added Course	AEC
2nd	III	Data Structures Operating Systems Numerical Optimization	Choose one from pool of courses, DSE- 1 OR Choose one from pool of courses, GE -3 Data Analysis and Visualization (DAV) OR Cryptography OR Microprocessor	GE3 (a) DBMS (b) Java Programming	Choose one SEC OR Internship/Apprenticeship/Project/Community Outreach		Choose one from a pool of courses	(Choose One from a pool of courses)
	IV	Design and Analysis of Algorithms Database Management System Computer Networks	Choose one from pool of courses, DSE- 2 OR in the alternative choose one from pool of courses GE-4 Data Mining -1 OR Combinatorial Optimization OR Data Privacy OR Introduction to Web Programming	GE4 Data structures using C++ (b)Introduction to web programming	Choose one SEC OR Internship/Apprenticeship/Project/Community Outreach		Choose one from a pool of courses	(Choose One from a pool of courses)
Students on exit shall be awarded Undergraduate Diploma (in the Field of Study/ Discipline) after securing the requisite 88 credits on completion of Semester IV								
3rd	V	Algorithms and Advanced Data Structures Theory of Computation Software Engineering	Data Mining - 2 OR Network Security OR UNIX Network Programming	GE5 (a) Operating Systems (b)Advanced web Programming (c) Java Based Web App Development	Choose one SEC OR Internship/Apprenticeship/Project/Community Outreach			

Year	Sem	Core	Elective (DSE)	Generic	SEC	Internship/Apprentice-ship/Project/Community outreach	Value Added Course	AEC
	VI	Artificial Intelligence Machine Learning Introduction to Parallel Programming	Choose one from a pool of courses DSE Social Network Analytic s OR Computer Graphics OR Deep Learning OR Ethical Hacking OR Wireless Technology and Standards OR Research Methodology	GE6 (a)Computer Networks (b) Internet Technologies Web App Design and Development (c) Artificial Intelligence	Choose one SEC OR Internship/Apprenticeship/Project/Community Outreach			
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Students on exit shall be awarded Bachelor of (in the Field of Study/Discipline) Honours (3 years) after securing the requisite 132 credits on completing semester VI

Year	Sem	Core	Elective (DSE)	Generic	SEC	Internship/...	Value Added Course	AEC
4th	VII	Compiler Design	Choose three DSE courses OR Choose two DSE and one GE course OR Choose one DSE and two GE courses Digital Image Processing Advanced Algorithms Reinforcement Learning Cyber Forensic Advanced TCP/IP Mobile and Satellite Communication Research Methodology (RM)	GE7 (a)Information Security (b) Design and Analysis of Algorithm (c) Internet Technologies Mobile App Design and Development			Dissertation on Major OR Dissertation on Minor OR Academic Project/Entrepreneurship	

Year	Sem	Core	Elective (DSE)	Generic	SEC	Internship/Apprentice-ship/Project/Community outreach	Value Added Course	AEC
	VIII	Information Security	Choose three DSE courses OR Choose two DSE and one GE course OR Choose one DSE 4 and two GE courses Information and Image Retrieval Natural Language Processing IT Infrastucture Management Blockchain and its Application Cloud Computing IOT Distributed Algorihms	GE8 (a) Machine Learning (b) Digital Marketing and Social Media Analytic (c) Introduction to Parallel Programming			Dissertation on Major OR Dissertation on Minor OR Academic Project/Entrepreneurship	
Students on exit shall be awarded Bachelor of (in the Field of Study/Discipline) (Honours with Research/Academic Projects/Entrepreneurship) or (Honours with Research in Discipline- I (Major) with Discipline-2 (Minor) after securing the requisite 176 credits on completion of Semester VIII								

II. Multidisciplinary Courses of Study with Three Core Disciplines

Year	Sem	Core (DSC)	Elective (DSE)	Generic	SEC	Internship/Apprentice-ship/Project/Community outreach	Value Added Course	AEC
1st	Ist	Discipline Al Programming fundamentals using C++ Discipline Bl Discipline C1			Choose from a pool of courses		Choose one from a pool of courses	
	IInd	Discipline A2 Data Structures Discipline B2 Discipline -C2			Choose from a pool of courses			
2nd	IIIrd	Discipline A3 Computer System Architecture Discipline B3	Choose From a Pool of Courses, DSC -A/B/C OR Choose from a pool of Courses GE3		Choose one SEC OR Internship/Apprenticeship/Project/Community Outreach			

Year	Sem	Core (DSC)	Elective (DSE)	Generic	SEC	Internship/Apprenticeship/Project/Community outreach	Value Added Course	AEC
		Discipline C3						
	IV	Discipline A4 Operating System Discipline B4 Discipline C4	Choose From a Pool of Courses, DSC -A/B/C OR Choose from a pool of Courses GE4		Choose one SEC OR Internship/Apprenticeship/Project/Community Outreach			
3rd	Vth	Discipline A5 DBMS Discipline B5 Discipline C5	Choose one from a pool of Courses DSE (A/B/C)	Choose one from a pool of courses GE5	Choose one SEC OR Internship/Apprenticeship/Project/Community Outreach			
	VIth	Discipline A6 Computer Networks Discipline B6 Discipline C6	Choose one from a pool of Courses DSE-(A/B/C)	Choose one from a pool of courses GE6	Choose one SEC OR Internship/Apprenticeship/Project/Community Outreach			
4th	VIIth	DSC Design and Analysis of Algorithms	Choose three DSE Courses OR Choose two DSE and one GE Course OR Choose one DSE and two GE Courses				Dissertation on Major OR Dissertation on Minor OR Academic Project/Entrepreneurship	
	VIIIth	DSC Information Security	Choose three DSE Courses OR Choose two DSE and one GE Course OR Choose one DSE and two GE Courses				Dissertation on Major OR Dissertation on Minor OR Academic Project/Entrepreneurship	

III. Multidisciplinary Courses of Study with Two Core Disciplines:

Year	Core (DSC)	Elective (DSE)	Generic	SEC (Any one)	Internship/Apprentice-ship/Project/Community outreach	Value Added Course	AECC
1st	DSC-1 (A/B) Introduction to Programming using C++ Discipline A1 Programming Fundamentals using Python Discipline B1					From a pool of courses	
	DSC-2 (A/B) Data Structures Discipline -A2 Data Visualization using python Discipline -B2		Choose one from			Choose one from a pool of courses	
2nd	DSC-3 (A/B) Computer System Architecture Discipline A3 Database Management System Discipline B3		Choose one from		Internship/Apprenticeship/Project/Community Outreach	Choose one from a pool of course	
	DSC-4(A/B) Operating System Discipline A4 Introduction to Web Programming Discipline B4		Choose one from		Internship/Apprenticeship/Project/Community Outreach	Choose one from a pool of course	

Year	Core (DSC)	Elective (DSE)	Generic	SEC (Any one)	Internship/Apprentice-ship/Project/Community outreach	Value Added Course	AECC
3rd	DSC-5(A/B) DBMS II Discipline A5 Multimedia and Its Applications Discipline B5	Choose one from a pool of Courses DSE-1 (A/B)			Internship/Apprenticeship/Project/Community Outreach		
	DSC-6(A/B) Computer Networks Discipline A6 Introduction to Cyber Security Discipline B6	Choose one from a pool of Courses DSE-2(A/B	Pool of courses		Internship/Apprenticeship/Project/Community Outreach		
4th	DSC-13 Design and Analysis of Algorithms	Choose three DSE courses OR Choose two DSE and one GE course OR Choose one DSE and two GE courses				Dissertation on Major OR Dissertation on Minor OR Academic project/ Entrepreneurship	
	DSC-14 Information Security	Choose three DSE courses OR Choose two DSE and one GE course OR Choose one DSE and two GE Course				Dissertation on Major OR Dissertation on Minor OR Academic project/	

Year	Core (DSC)	Elective (DSE)	Generic	SEC (Any one)	Internship/Apprentice-ship/Project/Community outreach	Value Added Course	AECC
						Entrepreneurship	