

**Department of Computer Science  
University of Delhi**

**Model Curricula under UGCF  
June 2022**

[illegible]

Total= 44

I I I	DSC - 7(4) Data Structures	Choose one from pool of courses, DSE- 1 (4) OR Choose one from pool of courses, GE -3 (4)**  Data Analysis and Visualization (DAV)  OR Cryptography  OR Microprocessor		Choose one from a pool of AEC courses (2)	Choose one SEC OR Internship / Apprenticeship/ Project/ Com m unity Outreach (IAPC) (2) *	Choose one from a pool of courses (2)	22 credits
	DSC- 8(4) Operating Systems						
	DSC-9 (4) Numerical Optimization						
I V	DSC - 10(4) Design and Analysis of Algorithms	Choose one from pool of courses, DSE- 2 (4) OR in the alternative choose one from pool of courses GE-4 (4)**  Data Mining-I  OR Combinatorial Optimisation  OR Data Privacy  OR Introduction to Web Programming		Choose one from a pool of AEC courses (2)	Choose one SEC OR Intern ship / Apprenticeship/ Project/ com m unity outreach (IAPC) (2) *	Choose one from a pool of courses (2)	22 Credits
	DSC - 11(4) Database Management System						
	DSC - 12(4) Computer Networks						
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							
V	DSC - 13(4) Algorithms and Advanced Data Structures	Data Mining- II  OR	Choose one from a pool of courses GE-5 (4)		Choose one SEC OR Intern ship / Apprenticeship / Project/ Com m unity Outreach (IAPC) (2) * * *		22 credits

	DSC - 14(4) Theory of Computation	Network Security					
	DSC- 15(4) Software Engineering	OR  Unix Network Programmi ng					

V I	DSC- 16(4) Artificial Intelligence	Choose one from a pool of courses DSE-4 (4) Social Network Analytics	Choose one from a pool of courses GE-6 (4) "		Choose one SEC <b>OR</b> 'Int ern ship / Apprenticeship / Project / Research / Comm unity Outreach (2) * * *		22 credits
	DSC-17 (4) Machine Learning						
	DSC-18 (4) Introduction to Parallel Programming	OR Computer Graphics  OR Deep Learning  OR Ethical Hacking  OR Wireless Technolog y and Standards  OR Research Methodolo					

		gy(RM)					
	<b>Students on exit shall be awarded Bachelor of (in the Field of Study/Discipline) Honours (3 years) after securing the requisite 132 credits on completion of Semester VI</b>						Total= 132
VII	DSC-19 (4) Compiler Design	Choose three DSE (3x4) courses OR Choose two DSE- (2x4) and one GE (4) " course OR Choose one DSE (4) and two GE (2x4) courses (total = 12)#  <ul style="list-style-type: none"> <li>Digital Image Processing</li> <li>Advanced Algorithms</li> <li>Reinforcement Learning</li> <li>Cyber Forensic</li> <li>Advanced TCP/IP</li> <li>Mobile and Satellite Communication</li> <li>Research Methodology (RM)</li> </ul>				Dissertation on Major (6) OR Dissertation on Minor (6) OR Academic project/ Entrepreneurship (6)	22 credits
VIII	DSC -20 (4) Information Security	Choose three DSE (3x4) courses OR Choose two DSE- (2x4) and one GE (4) course OR Choose one DSE (4) and two GE (2x4) courses (total = 12)#  <ul style="list-style-type: none"> <li>Information and Image Retrieval</li> <li>Natural Language</li> </ul>				Dissertation on Major (6) OR Dissertation on Minor (6) OR Academic project/ Entrepreneurship (6)	22 credits

		<div>Processing</div> <ul style="list-style-type: none"><li>IT Infrastructure Management</li><li>Critical Infrastructure Management</li><li>Blockchain and its applications</li><li>Cloud Computing</li><li>IOT</li><li>Distributed Algorithms</li></ul>						
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								Total = 176

### Illustration - 1: Sample UGCF for Multidisciplinary Courses of Study @#

Semester	Core (DSC)	Elective (DSE)	Generic Elective (GE)	Ability Enhancement Course (AEC)	Skill Enhancement Course (SEC)	Internship/ Apprenticeship/Project (2)	Value addition course (VAC)	Total Credits
I	Discipline AI- (4) <a href="#">Programming fundamentals using C++</a>		Choose one from a pool of courses GE-1 (4)	Choose one from a pool of AEC courses (2)	Choose one from a pool of courses (2)		Choose one from a pool of courses (2)	22 credits
	Discipline BI- (4)							
	Discipline CI- (4)							
I	Discipline A2 (4) <a href="#">Data Structures</a>		Choose one from a pool of courses GE-2 (4)	Choose one from a pool of AEC courses (2)	Choose one from a pool of courses (2)		Choose one from a pool of courses (2)	22 credits
	Discipline B2 (4)							
	Discipline C 2 (4)							
Students on exit shall be awarded Undergraduate Certificate (in the field of Multidisciplinary Study) after securing the requisite 44 credits in Semesters 1 and 11								Total= 44
I	Discipline A3 (4) <a href="#">Computer System Architecture</a>	Choose from pool of courses, DSE A/B/C (4) OR Choose from pool of courses, GE -3 (4)	Choose one from a pool of AEC courses (2)	Choose one SEC OR Internship/ Apprenticeship/ Project/community Outreach (2)	Choose one from a pool of courses (2)		22 credits	
	Discipline B 3 (4)							
	Discipline C 3 (4)							
I	Discipline A4 (4) <a href="#">Operating Systems</a>	Choose from pool of courses, DSE A/ B/C (4) OR in the alternative GE-4 (4)	Choose one from a pool of AEC courses (2)	Choose one SEC OR 'Internship/ Appr enticeship / Project/community outreach (2)	Choose one from a pool of courses (2)		22 Credits	
	Discipline B 4 (4)							
	Discipline C 4 (4)							
Students on exit shall be awarded Undergraduate Diploma (in the Field of Multidisciplinary Study) after securing the requisite BB credits on completion of Semester N								Total= 88



V	Discipline A5 (4) Database Management Systems	Choose one from a pool of courses DSE A/ B/ C - (4)	Choose one from a pool of courses GE-5 (4)		Choose one SEC OR Internship/ Appren tic eship / Project / Com m unity outreach (2)		22 credits
	Discipline B 5 (4)						
	Discipline C 5 (4)						
V I	Discipline A6 (4) Computer Networks	Choose one from a pool of courses DSE A/ B/ C - (4)	Choose one from a pool of courses GE-6 (4)		Choose one SEC OR ' In tern - ship/ App ren ticeship / Project / Research / Com m unity Outreach (2)		22 credits
	Discipline B 6 (4)						
	Discipline C 6 (4)						
Students on exit shall be awarded Bachelor of (in the field of Multidisciplinary Study) after securing the requisite 1.32 credits on completion of Semester VI							Total= 132
V I I	DSC-(4) Design and Analysis of Algorithms	Choose three DSE (3x4) courses OR Choose two DSE- (2x4) and one GE (4) course OR Choose one DSE (4) and two GE (2x4) courses  (total= 12)				Dissertation on Major (4+2) OR Dissertation on Minor (4+2) OR Academic project/ Entrepreneurship (4+2)	22 credits

VIII	DSC- (4) Information security	Choose three DSE(3x4) courses OR Choose two D SE-(2x4) one GE (4) course OR Choose one DSE (4) and two GE (2x4) courses (total= 12)	Course (AEC)	Course (SEC)	ship / Project (2)	Dissertation on Major (4+2) <b>OR</b> Dissertation on Minor (4+2) <b>OR</b> Academic project/ Entrepreneurship (4+2)	22 credits
<p><b>Students on exjt shall be awarded Bachelor of (in the Field of Multidisciplinary Study) (Honours or Honours with Academic Projects/Entrepreneurship) after securing the requisite 176 credits on completion of Semester VIII</b></p>							Total = 176

### TABLE-7

Semester	Core (DSC)	Elective (DSE)	Generic Elective (GE)	Ability Enhancement	Still Enhancement	Internship Appendix	Value Addition course (VAC)	Total Credits
I	DSC-1 (A/B) Introduction to Programming using C++						from a pool of courses (2)	
	Discipline A1 Programming Fundamentals using Python							
	Discipline-B1 (4)							
II	DSC-2 (A/B) Data Structures		Choose one from a				Choose one from a pool of courses (2)	22 credits
	Discipline -A2 Data Visualization Using Python							
	Discipline-B2 (4)							
Students on exit shall be awarded Under Semesters 1 and II g the requisite 44 credits in								Total= 44
III	DSC-3 (A/B) Computer System Architecture		Choose one from		Intern ship/ Apprenticeship / Project / Community Outreach		Choose one from a pool of courses (2)	22 credits
	Discipline - A3 Database Management System I							
	Discipline - B3 (4)							
IV	DSC-4 (A/B) Operating Systems		Choose one from		Intern ship/ Apprenticeship / Project / comm unity outreach		Choose one from a pool of courses (2)	22 Credits
	Discipline - A4 Introduction to Web Programming							

	Discipline - B4 (4)						
Students on exit shall be awarded Under							Total= 88
completion of Semester IV							
V	DSC - 5 (A/B) Database Management System II	Choose one from a pool of courses DSE-1 (A/B) (4)			Intern ship/ Apprenticeship/ Project / Research / Community		22 credits
	Discipline - A5 Multimedia and Its Applications						
	Discipline - B5 (4)						
VI	DSC- 6 (A/B) Computer Networks	Choose one from a pool of courses DSE-2 (A/B) (4)	Pool of courses G ( 4 )		Intern ship/ Apprenticeship / Project / Research /Community Outreach (2)		22 credits
	Discipline - A6 Introduction to Cyber Security						
	Discipline - B6 (4)						
Students on exit shall be awarded Bachelor of (in the Field of Multidisciplinary Study) after securing the requisite 132 credits on completion of Semester VI							Total= 132

VII	DSC-13 (4) Design and Analysis of Algorithms	Choose three DSE (3x4) courses OR Choose two DSE- (2x4) and one GE course OR Choose one DSE (4) and two GE (2x4) courses  (total= 12)				Dissertation on Major OR Dissertation on Minor OR Acade mic project/ Entrepreneurship (6)	22 credits
VIII	DSC-14 (4) Information Security	Choose three DSE (3x4) courses OR Choose two DSE- (2x4) and one GE course OR Choose one DSE (4) and two GE (2x4) courses  (total= 12)				Dissertation on Major OR Dissertation on Minor OR Acade mic project/ Entrepreneurship (6)	22 credits
Students on exit shall be awarded Bachelor of (in the field of Multidisciplinary Study) (Honours or Honours with Academic Project/Entrepreneurship) after securing the requisite 176 credits on completion of Semester VIII							Total= 176

