

FYUGP - SYLLABUS

B. Sc COMPUTER SCIENCE

Major

Specializations: **CYBER SECURITY, DATA SCIENCE, MACHINE LEARNING, WEB DEVELOPMENT**

SEMESTER 1			
Category	Course Code	Name Of the Course	Credit
Discipline Specific Core			
DSC-1	UK1DSCCSC101	Programming using C	4
DSC-2	UK1DSCCSC105	Internet Technology	4
DSC-3	UK1DSCCSC104	Informatics	4
Multi-Disciplinary Course			
MDC 1	UK1MDCCSC100	Web Designing using HTML5 and CSS3	3
Ability Enhancement Courses			
AEC-1		English	3
AEC-2		Malayalam / Hindi	3

SEMESTER 2			
Category	Course Code	Name Of the Course	Credit
Discipline Specific Core			
DSC-4	UK2DSCCSC100	Free and Open Source Softwares	4
DSC-5	UK2DSCCSC101	Python Programming	4
DSC-6	UK2DSCCSC102	Computer System Management	4
Multi-Disciplinary Course			
MDC 2	UK2MDCCSC104	Data Science using Python	3
Ability Enhancement Courses			
AEC-1		English	3
AEC-2		Malayalam / Hindi	3

SEMESTER 3			
Category	Course Code	Name Of the Course	Credit
Discipline Specific Core			
DSC-7	UK3DSCCSC200	Data Structures (Lab: C)	4
DSC-8	UK3DSCCSC207	Cyber Crimes & Laws	4
DSC- 9	UK3DSCCSC208	E-Governance	4
Discipline Specific Elective			
DSE -1 (Cyber Security)	UK3DSECSC200	Introduction to Cyber security	4
DSE -1 (Data Science)	UK3DSECSC201	Data Science Fundamentals	4
DSE -1 (Machine learning)	UK3DSECSC202	Introduction to Artificial Intelligence	4
DSE -1 (Web Development)	UK3DSECSC203	Web Development using HTML5	4
Multi-Disciplinary Course			
MDC-3		Kerala studies	
Value Added Course			
VAC - 1	UK3VACCSC201	Professional Ethics in Computer Science	3

SEMESTER 4			
Category	Course Code	Name Of the Course	Credit
Discipline Specific Core			
DSC- 10	UK4DSCCSC200	Database Management System	4
DSC- 10	UK4DSCCSC201	Data Communication	4
DSC- 11	UK4DSCCSC202	Artificial Intelligence	4
Discipline Specific Elective			
DSE -2 (Cyber security)	UK4DSECSC200	Ethical Hacking	4
DSE -2 (Data science)	UK4DSECSC201	Python for Data Analytics	4
DSE -2 (Machine learning)	UK4DSECSC202	Knowledge Representation and Intelligent Agents	4

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DSE -2 (Web Development)	UK4DSECSC203	Web Scripting using JavaScript, React JS / Ajax	4
Value Added Course			
VAC - 2	UK4VACCSC202	Ethical AI and Responsible Computing	3
VAC - 3	UK4VACCSC201	Software Quality Management	3
Skill Enhancement Course			
SEC - 1	UK4SECCSC200	Content Management System	3
		Internship	2

SEMESTER 5			
Category	Course Code	Name Of the Course	Credit
Discipline Specific Core			
DSC- 12	UK5DSCCSC300	Programming in Java	4
DSC- 13	UK5DSCCSC308	Cloud Computing	4
DSC- 14	UK5DSCCSC303	Computer Networks	4
Discipline Specific Elective			
DSE -3 (Cyber security)	UK5DSECSC301	Cyber Forensics	4
DSE -4 (Cyber security)	UK5DSECSC300	Cryptography and Network Security	4
DSE -3 (Data science)	UK5DSECSC302	Data Analytics with R	4
DSE -4 (Data science)	UK5DSECSC303	Data Mining concepts and Techniques	4
DSE -3 (Machine learning)	UK5DSECSC304	Introduction to Machine Learning Using Python	4
DSE -4 (Machine learning)	UK5DSECSC305	Artificial Neural Networks	4
DSE -3 (Web development)	UK5DSECSC306	PHP And MySQL	4
DSE -4 (Web development)	UK5DSECSC307	Web Application Development using Django	4

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Skill Enhancement Course			
SEC - 2	UK5SECCSC301	Web Application Development	3

SEMESTER 6			
Category	Course Code	Name Of the Course	Credit
Discipline Specific Core			
DSC- 15	UK6DSCCSC301	OOAD	4
DSC- 16	UK6DSCCSC303	Operating Systems	4
DSC- 17	UK6DSCCSC300	Machine Learning	4
DSC- 17	UK6DSCCSC305	Internet of Things	4
Discipline Specific Elective			
DSE -5 (Cyber security)	UK6DSECSC301	Mobile & Wireless Security	4
DSE -6 (Cyber security)	UK6DSECSC300	Image Security	4
DSE -5 (Data science)	UK6DSECSC302	Data Visualisation	4
DSE -6 (Data science)	UK6DSECSC303	Big Data Technologies using Hadoop	4
DSE -5 (Machine learning)	UK6DSECSC304	Recommendation Systems	4
DSE -6 (Machine learning)	UK6DSECSC305	Deep Learning	4
DSE -5 (Web Development)	UK6DSECSC306	Mobile Application Development	4
DSE -6 (Web Development)	UK6DSECSC307	Emerging Trends in Web Development	4
Skill Enhancement Course			
SEC - 3	UK6SECCSC300	Mobile Application Development	3

SEMESTER 7			
Category	Course Code	Name Of the Course	Credit
Discipline Specific Core			
DSC- 18	UK7DSCCSC400	Research Methodology	4
DSC- 19	UK7DSCCSC401	Academic Writing and Publishing	4

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DSC- 20	UK7DSCCSC408	Wireless Data Communication	4
DSC- 21	UK7DSCCSC404	Block Chain Technologies	4
DSC- 22	UK7DSCCSC407	Theory of Computation	4
Discipline Specific Elective			
DSE - 7 (Cyber Security)	UK7DSECSC400	Cloud Security	4
DSE - 7 (Data Science)	UK7DSECSC401	Social Media Analytics	4
DSE - 7 (Machine Learning)	UK7DSECSC402	Computer Vision	4
DSE - 7 (Web Development)	UK7DSECSC403	Full Stack Development	4

SEMESTER 8			
Category	Course Code	Name Of the Course	Credit
Discipline Specific Core			
DSC-23	UK7RPHCAP400	Mandatory for UG Hons with Research Project	
DSC-24	UK7CIPCAP400	Mandatory for UG Hons- Internship Project	

PATHWAYS

Pathways	DSC Major + DSE* (4credits)	Minor** (4credits)	MDC# SEC VAC** (3credits each)	AEC (3 credits)	Internship (2 credits)	Total Credits
BSc Computer Science (Single Major)	68 credits 17 courses (11+6)	24 credits 6 courses	27 credits 9 courses	12 credits 4 courses	2 credits	133

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BSc Computer Science Major with Multiple disciplines	68 credits 17 courses (11+6)	12+12 credits 3+3 courses	27 credits 9 courses	12 credits 4 courses	2 credits	133
BSc Computer Science Major with Single Minor	68 credits 17 courses (11+6)	24 credits6 courses	27 credits 9 courses	12 credits 4 courses	2 credits	133



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