

Syllabus
Four Year Integrated Master Degree Program
(Computer Science Major)

(Approved by combined PGCCS & UGCCS Meeting held on 7th May, 2026)

May 2026

(Approved by Academic Council, GU, vide Resolution No.....)



Department of Computer Science

Gauhati University
Guwahati-781014
Assam:: INDIA

Program Structure

Semester-1			Semester-2		
Type	Course	Credit	Type	Course	Credit
Major	Major-1: Code: COM0101004MJ Introduction to C-Programming	4	Major	Major-2: Code: COM0200104MJ Computer Organization	4
Minor	Minor-1: Code: COM0101004MN Introduction to C-Programming (<i>For students with Major in other subjects and for students pursuing only Minors</i>)	4	Minor	Minor-2 Code: COM0200104MN Computer Organization (<i>For students with Major in other subjects and for students pursuing only Minors</i>)	4
SEC	*SEC-1: Code: _____ Computer Fundamentals and Programming	3	SEC	*SEC-2: Code: _____ HTML Programming	3
AEC	AEC-1 (Languages/Alt. English)	4	AEC	AEC-2 (English Communication)	4
MDC	MDC-1	3	MDC	MDC-2	3
VAC	VAC-1	2	VAC	VAC-2	2
		20			20

Semester-3			Semester-4		
Type	Course	Credit	Type	Course	Credit
Major	Major-3: Code: COM0300104MJ Object Oriented Programming using C++	4	Major	Major-5: Code: COM0400204MJ Database Management System	4
	Major-4: Code: COM0300204MJ Data Structure Using C/C++	4		Major-6: Code: COM0400304MJ Mathematical Foundation of Computer Science	4
Minor	Minor-3: <i>(Minor-3 paper for major in Computer Science will be taken from subjects offered by other departments)</i> Major in Other Subjects (One Minor): • Code: COM0300104MN Object Oriented	4		Major-7: Code: COM0400404MJ Operating System	4

	Programming using C++ Minors only (Two Minors): <ul style="list-style-type: none"> • Code: COM0300104MN Object Oriented Programming using C++ • Code: COM0300204MN Data Structure Using C/C++ 				
SEC	#SEC-3	3		Major-8: Code: COM0400504 Java Programming OR Code: COM0400604 Python Programming	4
MDC	MDC-3	3	Minor	Minor-4 <i>(Minor-4 paper for major in Computer Science will be taken from subjects offered by other departments)</i> Major in Other Subjects (One Minor): <ul style="list-style-type: none"> • Code:COM0400204MN Database Management System Minors only (Two Minors): <ul style="list-style-type: none"> • Code:COM0400204MN Database Management System • Code: COM0400404MN Operating System 	4
VAC	VAC-3	2			
		20			20

- *Summer Break in Between 4th and 5th Semester: Internship-4 (Credit added to 5th Semester)*
- *Those who miss the Internship in 4th-5th Summer Break, shall do the Internship after the 6th Semester (during 6th Semester Summer Break). In such cases, the 5th Semester result shall not be COMPLETE.*

Semester-5			Semester-6		
Type	Course	Credit	Type	Course	Credit
Major	Major-9: Code: COM0500104MJ Computer Networks	4	Major	Major-12: Code: COM0600104MJ Automata Theory and Languages	4
	Major-10: Code: COM0500204MJ Software Engineering	4		Major-13: Code: COM0600204MJ Cloud Computing OR Code: COM0600304 Compiler Design	4
	Major-11: Code: COM0500304MJ Web Technologies	4		Major-14: Code: COM0600404MJ Artificial Intelligence OR Code: COM0600504MJ Computer Graphics OR Code: COM0600604MJ Data Mining and Warehousing	4
Minor	Minor-5 <i>(Minor-5 paper for major in Computer Science will be taken from subjects offered by other departments)</i> Major in Other Subjects: <ul style="list-style-type: none"> Code: COM0500204MN Software Engineering Minors only: <ul style="list-style-type: none"> Code: COM0500204MN Software Engineering Code: COM0500304MN Web Technologies 	4		Major-15: Code: COM0600704MJ Project and Presentation	4
Internship	Internship Code: COM0500404MJ	4	Minor	Minor-6 <i>(Minor-6 paper for major in Computer Science will be taken from subjects offered by other departments)</i> Major in Other Subjects (1 minor): <ul style="list-style-type: none"> Code: COM0600404MN Artificial Intelligence OR 	4

				Code: COM0600504MN Computer Graphics OR Code: COM0600604MN Data Mining and Warehousing Minors only (3 Minors): <ul style="list-style-type: none"> • Code: COM0600104MJ Automata Theory and Languages • Code: COM0600404MN Artificial Intelligence OR Code: COM0600504MN Computer Graphics OR Code: COM0600604MN Data Mining and Warehousing <ul style="list-style-type: none"> • Code: COM0600704MN Project and Presentation 	
		20			20

***SEC-1** and **SEC-2** Should be Major Oriented/to supplement the Major. CCS will prescribe a Bucket of SECs against each Major, so that Hands-on and other Practices/Knowledge required to be Skilled in Major Subject could be acquired by the students. The Bucket could be drawn from the existing SEC list and also new SECs required may be included. Faculty-wise Buckets should be prescribed, so that number of SECs in a semester could be minimized.

#SEC-3 is Open SEC. Any Skill that the students require to be Skillful in their professional/established life. Students may choose from one from the available Skill Courses in the College for that Semester.

A. FYIMP with Honours

Semester-7			Semester-8		
Type	Course	Credit	Type	Course	Credit
Major	Major -16: Code: COM0700104MJ Research Methodology	4	Major	Major-20: Code: COM0800104MJ Advanced Data Structure	4
	Major-17: Code: COM0700204MJ Machine Learning	4		Major-21: Code: COM0800204MJ Cryptography and Network Security	4
	Major-18: Code: COM0700304MJ Advanced DBMS	4		Major-22: Code: COM0800304MJ Embedded System OR	4

	(Compulsory)			Code: COM0800404MJ Mobile Computing	
	Major-19: Code: COM0700404MJ Advanced Operating System OR Code: COM0700504MJ Computer Architecture	4		OR Code: COM0800504MJ Mobile Application Development OR Code: COM0800604MJ Internet of Things	
				Major-23 Code: COM0800704MJ Seminar/Project	4
Minor	Minor-7 <i>(Minor-7 paper for major in Computer Science will be taken from subjects offered by other departments)</i> Major in Other Subjects (1 minor): • Code: COM0700604MN Web Technologies	4	Minor	Minor-8 Internet of Things <i>(Minor-8 paper for major in Computer Science will be taken from subjects offered by other departments)</i> Major in Other Subjects (1 minor): • Code: COM0800604MN Internet of Things	4
		20			20

Semester-9			Semester-10		
Type	Course	Credit	Type	Course	Credit
Major	Major -24: Code:COM0900104MJ Distributed System	4	Major	Major-29: Code: COM1000104MJ Deep Learning	4
	Major- 25: Code:COM0900204MJ Cyber Security	4		Major-30: Code: COM1000204MJ Optimization Techniques	4
	Major-26: Code: COM0900304MJ Theory of Computation	4		Major-31 and Major-32: (Any two from the following)	4+4=8

	Major-27: Code:COM0900404MJ Digital Image Processing OR Code: COM0900504MJ Bioinformatics	4		<ul style="list-style-type: none"> • Code: COM1000304 MJ Speech Processing • Code: COM1000404MJ Natural Language Processing • Code: COM1000504MJ Remote Sensing • Code: COM1000604MJ Augmented Reality 	
	Major-28: Code:COM0900604MJ Big Data Analytics OR Code:COM0900704MJ Cloud Computing	4			
	Major-33 Code: COM1000704MJ Project	4			
		20			20

Credit Distribution against different subject types:

Serial	Subject Type	No of Papers	Credit/paper	Total Credit
1	Major	33	4	132
2	Minor	8	4	32
3	AEC	2	4	08
4	SEC	3	3	09
5	MDC	3	3	09
6	VAC	3	2	06
7	Internship	1	4	04
Total Credits=				200

B. FYIMP Honours with Research

Semester-7			Semester-8		
Type	Course	Credit	Type	Course	Credit
Major	Major -16: Code: COM0700104MJ Research Methodology	4	Major	Major-20 Code: COM0800804MJ Dissertation	12
	Major-17: Code: COM0700204MJ Machine Learning	4		Major-21 Code: COM0800504MJ Mobile Application Development OR	4
	Major-18: Code: COM0700304MJ	4		Code: COM0800604MJ Internet of Things	

	Advanced DBMS (Compulsory)				
	Major-19: Code: COM0700404MJ Advanced Operating System OR Code: COM0700504MJ Computer Architecture	4			
Minor	Minor-7 <i>(Minor-7 paper for major in Computer Science will be taken from subjects offered by other departments)</i> Major in Other Subjects (1 minor): • Code: COM0700604MN Web Technologies	4	Minor	Minor-8 Internet of Things <i>(Minor-8 paper for major in Computer Science will be taken from subjects offered by other departments)</i> Major in Other Subjects (1 minor): • Code: COM0800604MN Internet of Things	4
		20			20

Semester-9			Semester-10		
Type	Course	Credit	Type	Course	Credit
Major	Major -22: Code:COM0900104MJ Distributed System	4	Major	Major-25 Code: COM1000104MJ Deep Learning	4
	Major- 23: COM0900304MJ Theory of Computation	4		Major-26: (Any one from the following) • Code: COM1000304 MJ Speech Processing • Code: COM1000404MJ Natural Language Processing • Code: COM1000504MJ Remote Sensing • Code: COM1000604MJ Augmented Reality	4

				<ul style="list-style-type: none"> Code: COM1000204MJ Optimization Techniques 	
	Major-24: Code:COM0900404MJ Digital Image Processing OR Code:COM0900604MJ Big Data Analytics OR Code:COM0900704MJ Cloud Computing	4		Major-27: Code:COM1000704MJ Dissertation-2	12
	Major-25: Code:COM0900804MJ Dissertation-1	8			
		20			20

Credit Distribution against different subject types:

Serial	Subject Type	No of Papers	Credit/paper	Total Credit
1	Major	33	4	132
2	Minor	8	4	32
3	AEC	2	4	08
4	SEC	3	3	09
5	MDC	3	3	09
6	VAC	3	2	06
7	Internship	1	4	04
Total Credits=				200