



भारतीय प्रौद्योगिकी संस्थान मुंबई  
**INDIAN INSTITUTE OF TECHNOLOGY BOMBAY**  
पवई / Powai, मुंबई / Mumbai 400 076



Date of Issue : 26-October-2021 , liable to change since student has not yet graduated

Roll Number: 180050069 Academic Unit: Computer Science and Engineering  
Name of the Student: Niraj Rajesh Mahajan Joining Month & Year: July 2018  
Programme: Bachelor of Technology (B.Tech.)

Code	Name	Credits	Tag	Grade/ Marks	Code	Name	Credits	Tag	Grade/ Marks
Academic Year: 2018 - 2019, Term: Semester Autumn									
CH 105	Organic & Inorganic Chemistry	4.0	MA	AB	ME 113	Workshop Practice	4.0	MA	AA
CH 107	Physical Chemistry	4.0	MA	AA	NOCS01	NCC/NSS/NSO	0.0	MA	PP
CS 101	Computer Programming and Utilization	6.0	MA	AA	PH 107	Quantum Physics and Application	6.0	MA	AB
MA 105	Calculus	8.0	MA	AA	PH 117	Physics Lab	3.0	MA	AA
SPI=9.71/10					CPI=9.71/10				
Academic Year: 2018 - 2019, Term: Semester Spring									
BB 101	Biology	6.0	MA	BB	MA 108	Differential Equations	4.0	MA	BB
CH 117	Chemistry Lab	3.0	MA	AA	ME 119	Engineering Graphics & Drawing	5.0	MA	AA
CS 152	Abstractions and Paradigms for Programming	6.0	MA	AA	NOCS02	NCC/NSS/NSO	0.0	MA	PP
CS 154	Programming Paradigms Laboratory	3.0	MA	AA	PH 108	Basics of Electricity & Magnetism	6.0	MA	AB
MA 106	Linear Algebra	4.0	MA	AB					
SPI=9.19/10					CPI=9.44/10				
Academic Year: 2019 - 2020, Term: Semester Autumn									
CS 207	Discrete Structures	6.0	MA	BC	EE 101	Introduction to Electrical and Electronics Circuits	8.0	MA	BB
CS 213	Data Structures and Algorithms	6.0	MA	BC					
CS 215	Data Analysis and Interpretation	6.0	MA	BC	ES 200	Environmental Studies: Science and Engineering	3.0	MA	AB
CS 251	Software Systems Lab	8.0	MA	AA					
CS 293	Data Structures and Algorithms Lab	3.0	MA	AA	HS 200	Environmental Studies	3.0	MA	AB
					MG 401	Marketing Management	6.0	MI	DD
SPI=8.23/10					CPI=8.99/10				
Academic Year: 2019 - 2020, Term: Semester Spring									
CS 218	Design and Analysis of Algorithms	6.0	MA	PP	CS 254	Digital Logic Design Lab	3.0	MA	PP
CS 224	Computer Networks	6.0	MA	PP	CS 763	Computer Vision	6.0	MA	PP
CS 226	Digital Logic Design	6.0	MA	AA	CS 764	Computer Vision Lab	3.0	MA	AA
CS 228	Logic for Computer Science	6.0	MA	PP	HS 101	Economics	6.0	MA	PP
CS 252	Computer Networks Lab	3.0	MA	AA					
SPI=10.00/10					CPI=9.09/10				
Academic Year: 2020 - 2021, Term: Semester Autumn									
CS 305	Computer Architecture	6.0	MA	AB	CS 347	Operating Systems	6.0	MA	AA
CS 333	Operating Systems Lab	4.0	MA	AA	CS 663	Fundamentals of Digital Image Processing	6.0	MA	AA
CS 335	Artificial Intelligence and Machine Learning (Lab)	3.0	MA	AA	CS 768	Learning with Graphs	6.0	MA	AA
CS 337	Artificial Intelligence and Machine Learning	6.0	MA	AA	HS 307	Sociology	6.0	MA	AA
CS 341	Computer Architecture Lab	3.0	MA	AA					
SPI=9.87/10					CPI=9.29/10				

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Name of the Student: Niraj Rajesh Mahajan

Roll Number : 180050069

Code	Name	Credits	Tag	Grade/ Marks	Code	Name	Credits	Tag	Grade/ Marks
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Academic Year: 2020 - 2021, Term: Semester Spring

CS 302 Implementation of Programming Languages	8.0	MA	BB	CS 387 Database and Information Systems Lab	3.0	MA	AA
CS 310 Automata Theory	6.0	MA	AB	CS 490 R & D Project	6.0	MA	AA
CS 316 Implementation of Programming Languages Lab	4.0	MA	AA	CS 736 Medical Image Computing	6.0	HO	AB
CS 317 Database and Information Systems	6.0	MA	AB	MA 214 Introduction to Numerical Analysis	8.0	MA	AB

SPI=9.12/10

CPI=9.26/10

Mandatory Course Credits (MA)	= 214.0	Overall CPI	= 9.26/10
Overall Credits Completed	= 226.0		
Overall Grade Points	= 2060.0		

#### Current Status

The academic requirements for the degree are yet to be completed.

#### General Information

The medium of instruction at the Institute is English.

Course credits and grade: Each course is associated with credits which are an indicator of its relative weight in calculating the academic performance. A two-letter grade is awarded to students on the basis of their performance in examinations and assignments of a specific course. The letter grades have numerical equivalents on a 0-10 scale as given below.

Letter Grade	AP	AA	AB	BB	BC	CC	CD	DD	FF	FR	W	DX	PP	NP	AU
Numerical Equivalent	10	10	9	8	7	6	5	4	0	0	-	-	-	-	-

FF: Fail, FR: Fail and repeat, W: Withdrawn, DX: Insufficient attendance, AU: Satisfactory performance in an audit course, PP: Pass, NP: Not Pass. The minimum passing grade in a course is DD. The grade AP is awarded to students with exceptional performance in core courses of a programme. Numerical equivalents of letter grades are referred to as grade points.

The numerical grade points are not convertible into marks or percentages.

Performance Indicators: The performance of a student in a semester is given by a number called the Semester Performance Index (SPI), which is the weighted average of the earned grade points in the courses during the semester.

If a student has courses with credits  $C_1, C_2, \dots, C_n$ , with grade points of  $G_1, G_2, \dots, G_n$  respectively, then

Semester Credits = $C_1 + C_2 + \dots + C_n$	Semester Grade Points = $C_1G_1 + C_2G_2 + \dots + C_nG_n$	SPI = Semester Grade Points ÷ Semester Credits
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Cumulative Performance Index (CPI) is the weighted average of the grade points in the courses in all semesters. The indices SPI and CPI are calculated upto two decimal places.

Courses are tagged as MA: Mandatory (Core/Elective), MI: Minor, HO: Honours, AL: Additional Learning, AU: Audit

- Each degree programme has mandatory credits consisting of core courses, elective courses, and non credit courses. These courses are tagged as MA.
- For calculation of SPI and CPI, grades obtained only in mandatory courses (MA) are considered.
- Students can supplement the learning experience by crediting additional courses. Credits earned in these courses, when appropriate, can earn additional credentials either in the form of "Honours" (HO) in the chosen discipline or "Minor" (MI) in another discipline or both.
- "Honours" is not indicative of proficiency, and can be earned by completing the additional prescribed set of advanced core and elective courses in the chosen discipline. "Minor" can be earned by completing the prescribed set of courses in a discipline other than the chosen discipline. Additional courses that are not used for earning "Honours" or "Minor" are tagged as "Additional Learning" (AL).
- The AU is awarded based on satisfactory attendance and fulfilling the minimum requirements as set by the course instructor. It carries no grade points and does not figure in SPI or CPI calculations.
- PP or NP is awarded in some credit courses that are not earmarked with a letter grade. Correspondingly, PP/NP does not carry a grade point.
- O-IITB is/are the Course(s) completed by a student outside IIT Bombay (NPTEL/ Swayam). These course(s) contribute towards the completion of credits for a degree requirement. However, grades/marks earned for such course(s) is/are not considered for SPI / CPI calculation.

The Institute does not award any class or division. Notionally, the CPI may be multiplied by a factor of 10 to obtain a numerical percentage.

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END OF TRANSCRIPT

Roll Number: 180050069