Roll Number:	170070025
Name of the Student:	Sunil Meena
Programme:	Bachelor of Technology (B.Tech.)

Academic Unit:	Electrical Engineering
Joining Month & Year:	July 2017

Code	Name	Credits	Tag	Grade	Code	Name	Credits	Tag	Grade
Academic Year: 2017 - 2018, Term: Semester Autumn									
CH 105	Organic & Inorganic Chemistry	4.0	MA	BB	ME 113	Workshop Practice	4.0	MA	AA
CH 107	Physical Chemistry	4.0	MA	AB	NOCS01	NCC/NSS/NSO	0.0	MA	PP
CS 101	Computer Programming and Utilization	6.0	MA	CC	PH 107	Quantum Physics and Application	6.0	MA	CD
EE 111	Introduction to Electrical Systems	6.0	MA	BB	PH 117	Physics Lab	3.0	MA	AB
MA 105	Calculus	8.0	MA	BC					
SPI= 7.44/10					CPI= 7.44/10				
Academic Year: 2017 - 2018, Term: Semester Spring									
BB 101	Biology	6.0	MA	AB	MA 108	Differential Equations	4.0	MA	BB
CH 117	Chemistry Lab	3.0	MA	AB	ME 119	Engineering Graphics & Drawing	5.0	MA	AB
EE 112	Introduction to Electronics	6.0	MA	BB	NOCS02	NCC/NSS/NSO	0.0	MA	PP
MA 106	Linear Algebra	4.0	MA	BC	PH 108	Basics of Electricity & Magnetism	6.0	MA	BB
SPI= 8.29/10					CPI= 7.83/10				
Academic Year: 2018 - 2019, Term: Semester Autumn									
EE 207	Electronic Devices & Circuits	6.0	MA	BB	HS 101	Economics	6.0	MA	BC
EE 223	Data Analysis and Interpretation	6.0	MA	BB	HS 200	Environmental Studies	3.0	MA	BC
EE 225	Network Theory	6.0	MA	AB	MA 205	Complex Analysis	4.0	MA	BB
EE 236	Electronic Devices Lab	3.0	MA	AB	MA 207	Differential Equations II	4.0	MA	BB
ES 200	Environmental Studies: Science and Engineering	3.0	MA	AB					
SPI= 8.07/10					CPI= 7.91/10				
Academic Year: 2018 - 2019, Term: Semester Spring									
EE 204	Analog Circuits	6.0	MA	BC	EE 224	Digital Systems	6.0	MA	BB
EE 210	Signals and Systems	6.0	MA	BB	EE 230	Analog Lab	3.0	MA	CC
EE 214	Digital Circuits Lab	3.0	MA	AA	EE 234	Machines Lab	4.0	MA	BC
EE 222	Electrical Machines and Power Electronics	6.0	MA	AB	GNR652	Machine Learning for Remote Sensing-I	6.0	MA	BC
SPI= 7.75/10					CPI= 7.87/10				
Academic Year: 2019 - 2020, Term: Semester Autumn									
CS 663	Fundamentals of Digital Image Processing	6.0	MA	BB	EE 337	Microprocessors Laboratory	3.0	MA	BB
EE 301	Electromagnetic Waves	6.0	MA	BB	EE 340	Communications Lab	3.0	MA	BB
EE 308	Communication Systems	6.0	MA	BC	EE 659	A First Course in Optimization	6.0	AL	W
EE 309	Microprocessors	6.0	MA	BC	HS 307	Sociology	6.0	MA	BB
EE 325	Probability and Random Processes	6.0	MA	BB					
SPI= 7.71/10					CPI= 7.84/10				
Academic Year: 2019 - 2020, Term: Semester Spring									
CS 726	Advanced Machine Learning	6.0	MA	BB	EE 334	Power Systems	6.0	MA	BB
EE 302	Control Systems	6.0	MA	BB	EE 338	Digital Signal Processing	6.0	MA	AA
EE 324	Control Systems Lab	3.0	MA	AA	EE 344	Electronic Design Lab	6.0	MA	AA
EE 328	Digital Communications	6.0	MA	BB	EE 451	Supervised Research Exposition	6.0	MA	BB
SPI= 8.67/10					CPI= 7.99/10				

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Name of the Student: Sunil Meena   Roll Number : 170070025

Code	Name	Credits	Tag	Grade	Code	Name	Credits	Tag	Grade
	Academic Year: 2020 - 2021, Term: Semester Autumn								
CS 626	Speech and Natural Language Processing and the Web	6.0	MA	AB	EE 491	BTP I	6.0	MA	BB
					EE 782	Advanced Topics in Machine Learning	6.0	MA	AB
CS 747	Foundations of Intelligent and Learning Agents	6.0	AL	BB					
SPI= 8.67/10					CPI= 8.04/10				
	Academic Year: 2020 - 2021, Term: Semester Spring								
CS 728	Organization of Web Information	6.0	AL	BB	EE 708	Information Theory & Coding	6.0	AL	CD
CS 748	Advances in Intelligent and Learning Agents	6.0	MA	BB	EE 777	Network Security	6.0	MA	BC
SPI= 7.50/10					CPI= 8.01/10				

Mandatory Course Credits (MA)	= 273.0	**Overall CPI**		= 8.01/10
Overall Credits Completed	= 291.0			
Overall Grade Points	= 2314.0			

Final Result

The student has completed the academic requirements of the programme in the month of June 2021 for the award of
Bachelor of Technology in Electrical Engineering
Signature & Seal of Transcript Issuing Authority:

Joint/Assistant Registrar (Academic), IIT Bombay
Date: 12-August-2021
Place: Mumbai

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 $C_1, C_2,..., C_n$, with grade points of $G_1, G_2,..., G_n$ respectively, then

Semester Credits = $C_1 + C_2 + ... + C_n$	Semester Grade Points = $C_1G_1 + C_2G_2 + ... + C_nG_n$	SPI = Semester Grade Points ÷ Semester Credits

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.

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: 170070025