



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



Roll Number: 13D070014  
Name of the Student: BHARGAT YASH SANJAY  
Programme: Bachelor of Technology (B.Tech.)

Academic Unit:  
Joining Month & Year:

Electrical Engineering  
July 2013

Code	Name	Credits	Tag	Grade	Code	Name	Credits	Tag	Grade
Academic Year: 2013 - 2014, Term: Semester Autumn									
CH 105	Organic & Inorganic Chemistry	4.0	MA	AB	ME 119	Engineering Graphics & Drawing	5.0	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	AB	PH 107	Quantum Physics and application	6.0	MA	AA
EE 111	Introduction to Electrical Systems	6.0	MA	AA	PH 117	Physics Lab	3.0	MA	AA
MA 105	Calculus	8.0	MA	AA					
SPI=9.67/10					CPI=9.67/10				
Academic Year: 2013 - 2014, Term: Semester Spring									
BS 101	Biology	6.0	MA	AA	MA 108	Differential Equations	4.0	MA	AA
CH 117	Chemistry Lab	3.0	MA	AA	ME 113	Workshop Practice	4.0	MA	AB
EE 112	Introduction to Electronics	6.0	MA	AA	NOCS02	NCC/NSS/NSO	0.0	MA	PP
MA 106	Linear Algebra	4.0	MA	AA	PH 108	Basics of Electricity & Magnetism	6.0	MA	AB
SPI=9.70/10					CPI=9.68/10				
Academic Year: 2014 - 2015, Term: Semester Autumn									
CS 228	Logic for Computer Science	6.0	MI	BB	EE 717	Advanced Computing for Electrical	6.0	HO	BC
EE 207	Electronic Devices & Circuits	6.0	MA	AB	HS 101	Economics	6.0	MA	BB
EE 223	Data Analysis and Interpretation	6.0	MA	AB	MA 205	Complex Analysis	4.0	MA	AB
EE 225	Network Theory	6.0	MA	BB	MA 207	Differential Equations II	4.0	MA	AA
EE 236	Electronic Devices Lab	3.0	MA	AA					
SPI=8.86/10					CPI=9.42/10				
Academic Year: 2014 - 2015, Term: Semester Spring									
CS 348	Computer Networks	6.0	MI	BB	EE 224	Digital Systems	6.0	MA	AA
EE 204	Analog Circuits	6.0	MA	AA	EE 230	Analog Lab	3.0	MA	AA
EE 210	Signals & System	6.0	MA	AA	EE 234	Machines Lab	4.0	MA	AA
EE 214	Digital Circuits Lab	3.0	MA	AA	EE 636	Matrix Computations	6.0	MA	AB
EE 222	Electrical Machines and Power Electronics	6.0	MA	AA					
SPI=9.85/10					CPI=9.53/10				
Academic Year: 2015 - 2016, Term: Semester Autumn									
CS 218	Design and Analysis of Algorithms	6.0	MI	BC	EE 325	Probability and Random Processes	6.0	MA	BB
CS 663	Fundamentals of Digital Image Processing	6.0	HO	AB	EE 337	Microprocessors Laboratory	3.0	MA	AA
EE 301	Electromagnetic Waves	6.0	MA	BC	EE 340	Communications Lab	3.0	MA	AA
EE 308	Communication Systems	6.0	MA	AB	HS 303	Psychology	6.0	MA	AB
EE 309	Microprocessors	6.0	MA	AB					
SPI=8.67/10					CPI=9.37/10				
Academic Year: 2015 - 2016, Term: Semester Spring									
CS 347	Operating Systems	6.0	MI	CC	EE 338	Digital Signal Processing	6.0	MA	AA
EE 302	Control Systems	6.0	MA	AB	EE 344	Electronic Design Lab	6.0	MA	AA
EE 324	Control Systems Lab	3.0	MA	AB	EE 702	Computer Vision	6.0	MA	AA
EE 328	Digital Communications	6.0	MA	AB	ME 766	High Performance Scientific Computing	6.0	MA	AA
EE 334	Power Systems	6.0	MA	AA					
SPI=9.67/10					CPI=9.42/10				

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INDIAN INSTITUTE OF TECHNOLOGY BOMBAY  
पवई / Powai, मुंबई / Mumbai 400 076



Name of the Student: BHALGAT YASH SANJAY

Roll Number : 13D070014

Code	Name	Credits	Tag	Grade	Code	Name	Credits	Tag	Grade
Academic Year: 2016 - 2017, Term: Semester Autumn									
CS 725	Foundations of Machine Learning	6.0	MI	BB	EE 779	Advanced Topics in Signal Processing	6.0	HO	AB
EE 491	BTP I	6.0	MA	AA	ES 200	Environmental Studies: Science and Engineering	3.0	MA	CC
EE 638	Estimation and Identification	6.0	MA	AA	HS 200	Environmental Studies	3.0	MA	BB
EE 677	Foundation of VLSI CAD	6.0	MA	AB					
SPI=9.00/10					CPI=9.38/10				

Academic Year: 2016 - 2017, Term: Semester Spring									
CS 736	Algorithms for Medical Image Processing	6.0	MA	CC	EE 708	Information Theory & Coding	6.0	MA	W
EE 492	BTP II	12.0	MA	AA	URA 02	Undergraduate Research Project	6.0	MA	AA
EE 608	Adaptive Signal Processing	6.0	HO	BB					
SPI=9.00/10					CPI=9.35/10				

Mandatory Course Credits (MA)	= 279.0	Overall CPI	= 9.35/10
Overall Credits Completed	= 333.0		
Overall Grade Points	= 3029.0		

**Final Result**

The student has completed the academic requirements of the programme in the month of May 2017 for the award of Bachelor of Technology in Electrical Engineering with Honours and with Minor in Computer Science and Engineering  
Signature & Seal of Transcript Issuing Authority:



Joint/Assistant Registrar (Academic), IIT Bombay  
Date: 01-August-2017  
Place: Mumbai

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Name of the Student: BHALGAT YASH SANJAY

Roll Number: 13D070014

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

$$\text{Semester Credits} = C_1 + C_2 + \dots + C_n, \text{ Semester Grade Points} = C_1 G_1 + C_2 G_2 + \dots + C_n G_n, \text{ SPI} = \text{Semester Grade Points} \div \text{Semester Credits}.$$

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 for students graduating in June, 2016 onwards.

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END OF TRANSCRIPT

Roll Number: 13D070014



1210 LSA Building  
500 S. State Street  
Ann Arbor, MI 48109-1382  
Phone: 734-763-9066 Fax: 734-764-5556  
ro.umich.edu

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Transcript of: Yash Sanjay Bhalgat

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*Paul Robinson*  
University Registrar

## OFFICE OF THE REGISTRAR - ANN ARBOR, MI 48109-1382

16.00	20.00	62.20
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Bachelor of Technology MICHIGAN Awarded: 01-Aug-2017

Grade	Hours	MSH	CTP	MHP
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EECS 574 Co

EECS	574	Computat Complexity	4.00	0.00	0.00	0.00
EECS	587	Parallel Computing	4.00	0.00	0.00	0.00
EECS	598	Special Topics	3.00	0.00	0.00	0.00
		Reinforcement Learning				
ENTR	500	Intro to Innovation	3.00	0.00	0.00	0.00
		Intro to Innovation Careers				

**Total Elected Term Hours**

14.00	0.00	0.00	0.00
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**End of Transcript**

Total Number of Pages 1

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## TRANSCRIPT GUIDE

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### DEFINITION OF AN OFFICIAL TRANSCRIPT

An Official Transcript is one that has been received directly from the issuing institution. It must bear the University seal, date and signature of the registrar. Transcripts received that do not meet these requirements should not be considered official and should be routinely rejected for any permanent use. This definition of an official transcript has been endorsed by the Michigan Association of Collegiate Registrars and Admissions Officers.

### ACCREDITATION

The three campuses of the University of Michigan are accredited by the North Central Association of Colleges and Schools - Higher Learning Commission. Many of the departments and programs within the University are also accredited by various agencies. Detailed information about these agencies and the accreditation process is available from the Dean's office of each academic unit.

### CALENDAR

The University of Michigan operates under the trimester calendar. A unit of credit is a semester hour.

### ELIGIBILITY FOR ENROLLMENT

Unless otherwise indicated, a student is eligible to enroll.

### EXPLANATION OF COLUMN HEADINGS

HRS = Elected Hours/Units; MSH = GPA Semester Hours; CTP = Credit Toward Program; MHP = GPA Honor Points.

### ABBREVIATIONS FOR CREDIT CONDITIONS

AGC = Approved for Graduate Credit; CBE = Credit by Exam; DCO = Degree Credit Only; NDC = Not for Undergraduate degree credit; NFC = Not for Credit; NGD = Not for Graduate Degree Credit; REP = Repetition.

### STUDY ABROAD

Study abroad credit is considered upper level unless otherwise noted.

### LETTER GRADES

9.0 GRADING SCALE (A+ through B = Pass unless otherwise noted)

A+ = 9.0; A = 8.0; A- = 7.0; B+ = 6.0; B = 5.0; B- = 4.0; C+ = 3.0; C = 2.0; C- = 1.0; D+ = 0.0; D = 0.0; D- = 0.0; E = 0.0.

4.4 GRADING SCALE

A+ = 4.4; A = 4.0; A- = 3.7; B+ = 3.4; B = 3.0; B- = 2.7; C+ = 2.4; C = 2.0; C- = 1.7; D+ = 1.4; D = 1.0; D- = 0.7; E = 0.0.

4.3 GRADING SCALE

A+ = 4.3; A = 4.0; A- = 3.7; B+ = 3.3; B = 3.0; B- = 2.7; C+ = 2.3; C = 2.0; C- = 1.7; D+ = 1.3; D = 1.0; D- = 0.7; E = 0.0.

4.0 GRADING SCALE

A+ = 4.0; A = 4.0; A- = 3.7; B+ = 3.3; B = 3.0; B- = 2.7; C+ = 2.3; C = 2.0; C- = 1.7; D+ = 1.3; D = 1.0; D- = 0.7; E = 0.0.

### ADDITIONAL GRADES

EX = EXCELLENT; GD = GOOD; PS = PASS; LP = LOW PASS; F = FAIL (EX, GD, PS and LP = Pass)

CR = Credit; NC = No credit; S = Satisfactory; U = Unsatisfactory; P = Pass; F = Fail;

I = Incomplete (I OR IL followed by a letter grade indicates an initial incomplete that has been given a final grade.); NR = No grade reported;

## = Grade not submitted; ED = Unofficial drop; VI = Audit or Visit; W = Withdrew from course; Y = Extended multi-term class

M = Marginal; IPL = Incomplete Permanent Lapse

**COMPUTATIONS FOR TERM OR CUMULATIVE GPA:** Term GPA = Term MHP/Term MSH; Cumulative GPA = Cumulative MHP/Cumulative MSH; Example: 42.0 MHP/12.0 MSH = 3.5 GPA.