

COMPUTER ENGINEERING: MACHINE LEARNING AND DATA SCIENCE, BS

REQUIREMENTS

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MACHINE LEARNING AND DATA SCIENCE REQUIRED COURSES

Code	Title	Credits
E C E 204	Data Science & Engineering ¹	3
E C E 331	Introduction to Random Signal Analysis and Statistics (typically offered fall) ²	3
E C E/COMP SCI/ M E 532	Matrix Methods in Machine Learning ¹	3
E C E/COMP SCI/ M E 539	Introduction to Artificial Neural Networks ³	3
COMP SCI 564	Database Management Systems: Design and Implementation ⁴	4
Total Credits		16

¹ This course can be taken as a Professional Elective.

² This course fulfills the Probability requirement.

³ This course can be taken as a CMPE Elective II.

⁴ This course fulfills the System Software Requirement.

MACHINE LEARNING AND DATA SCIENCE ELECTIVE

Code	Title	Credits
Choose one as an Advanced, Professional, or Free Elective:		3-4
E C E 431	Digital Signal Processing (typically offered fall) ¹	
E C E/COMP SCI/ I S Y E 524	Introduction to Optimization ¹	
E C E/COMP SCI 533	Image Processing (typically offered fall) ¹	
E C E/COMP SCI 561	Probability and Information Theory in Machine Learning (typically offered fall)	
E C E/I S Y E 570	Ethics of Data for Engineers	
COMP SCI/I S Y E/ MATH/STAT 525	Linear Optimization ¹	
COMP SCI 540	Introduction to Artificial Intelligence	
COMP SCI/ B M I 567	Medical Image Analysis ¹	
COMP SCI/ B M I 576	Introduction to Bioinformatics	
COMP SCI 577	Introduction to Algorithms	

I S Y E 412	Fundamentals of Industrial Data Analytics
I S Y E 521	Machine Learning in Action for Industrial Engineers
L I S 461	Data and Algorithms: Ethics and Policy
MATH/I S Y E/OTM/STAT 632	Introduction to Stochastic Processes ¹
MATH 635	An Introduction to Brownian Motion and Stochastic Calculus ¹
M S & E 460	Introduction to Computational Materials Science and Engineering ¹
STAT 421	Applied Categorical Data Analysis ¹
STAT/M E 424	Statistical Experimental Design ¹
STAT 456	Applied Multivariate Analysis ¹
STAT 461	Financial Statistics ¹

¹ This course has additional requisites not required for the BS in Computer Engineering.