Class Name	Course Number	Year last taught	Semester offered	Breadth?	Concentration?	Other areas:	Recent Professors:	Majors who took (when):
Prerequisites								
Calculus of Functions of Several Variables	MATH 120	2018-19	both	n/a	n/a	n/a	Mostly grad students	Eric Foster (F16)
Multivariable Calculus for Engineers	ENAS 151 (also APHY 151, PHYS	2018-19	both	n/a	n/a	n/a	Beth Anne Bennett, Vidvuds	Ozolins, James Rolf
Linear Algebra with Applications	AMTH 222 (also MATH 222)	2018-19	both	n/a	n/a	n/a	Varies	Eric Foster (S17)
Linear Algebra and Matrix Theory	MATH 225	2018-19	spring	n/a	n/a	n/a	Varies	Burke Snowden (F16)
Vector Calculus and Linear Algebra I	MATH 230	2018-19	fall	n/a	n/a	n/a	Patrick Devlin	Hannah Lawrence (F15), Nash Keyes (F17)
Vector Calculus and Linear Algebra II	MATH 231	2018-19	spring	n/a	n/a	n/a	Patrick Devlin	Hannah Lawrence (S16), Nash Keyes (S18)
Introduction to Computing for Engineers and Scie	ENAS 130	2018-19	spring	n/a	n/a	n/a	Varies	Burke Snowden, Adam Madievsky (S19, with Beth Bennett)
Introduction to Computing and Programming	CPSC 100 (aka "CS 50")	2018-19	fall	n/a	n/a	n/a	Benedict Brown (Yale)/David	Malan (Harvard) — they teach together
Introduction to Programming	CPSC 112	2018-19	spring	n/a	n/a	n/a	Benedict Brown, Yang Yang	Eric Foster (S17)
Core								
Ordinary and Partial Differential Equations with Ap	ENAS 194 (also APHY 194)	2018-19	both	n/a	n/a	n/a	Varies	
Ordinary Differential Equations	MATH 246	2018-19	both	n/a	n/a	n/a	Varies	Eric Foster (F18), Nash Keyes (F18), Burke Snowden (S18)
Probability Theory	S&DS 241 (also MATH 241)	2018-19	fall	n/a	n/a	n/a	Yihong Wu, Winston Lin	Eric Foster (F17), Burke Snowden (F16)
Probability and Statistics	S&DS 238	2018-19	fall	n/a	n/a	n/a	Joe Chang	
Data Analysis	S&DS 361 (also AMTH 361)	2018-19	spring	n/a	n/a	n/a	Varies	
Data Exploration and Analysis	S&DS 230	2018-19	both	n/a	n/a	n/a	Xiaofei (Susan) Wang, Jona	Eric Foster (F17), Burke Snowden (S18)
Discrete Mathematics	MATH 244 (also AMTH 244)	2018-19	fall	n/a	n/a	n/a	Ross Berkowitz	Nash Keyes (F18)
Mathematical Tools for Computer Science	CPSC 202	2018-19	fall	n/a	n/a	n/a	Dana Angluin, James Aspne	Eric Foster (F18)
AMTH								
Optimization Techniques	AMTH 437 (also ECON 413, EENC	2018-19	fall	a, b, e	all?		Sekhar Tatikonda	Hannah Lawrence (F18)
Partial Differential Equations	AMTH 247 (also MATH 247, G&G	2018-19	spring	c	-			
Graphs and Networks	AMTH 462	?	?	e			Dan Spielman	
Science of Complex Systems	AMTH 428 (also E&EB 428, G&G	2018-19	fall	**a?**	G&G		Jun Korenaga	
APHY								
Basic Quantum Mechanics	APHY 439 (also PHYS 439)	2018-19	fall	j			Liang Jiang	
Solid State Physics I	APHY 448 (also PHYS 448)	2018-19	fall	j			Sohrab Ismail-Beigi	
Statistical Methods with Applications in Science a	APHY 470	2018-19	spring	b, j			Sohrab Ismail-Beigi	
ASTR								
Physical Processes in Astronomy	ASTR 320	2018-19	spring	j			Franciscus van den Bosch	Hannah Lawrence (F16)
Computational Methods for Astrophysics	ASTR 420	2018-19	fall	j			Paolo Coppi	
BENG								
Biomedical Image Processing and Analysis	BENG 445	?	?	i				
Multiscale Models of Biomechanical Systems	BENG 458	2018-19	spring	i			Stuart Campbell	
CENG								
Chemical Kinetics and Chemical Reactors	CENG 301	2018-19	spring	k	Engineering		Mingjiang Zhong	Burke Snowden (S18)
Transport Phenomena	CENG 315	2018-19	spring	k	Engineering		Amir Haji Akbari Balou	
(see also MENG, e.g. MENG 361, which CENG people take also)								
I know that CHEM 33x (Physical Chem I and II) also can count but I don't know details								
CPSC								
Algorithms	CPSC 365	2018-19	spring	d	CPSC		Jim Glenn	Eric Foster (S19), Hannah Lawrence (S17)
Advanced Algorithms	CPSC 366	2018-19	spring	d	CPSC		Yang Cai, Dan Spielman	
Parallel Programming Techniques	CPSC 424	2018-19	both	?	CPSC		Andrew Sherman	
Numerical Computation	CPSC 440	?	?	d	CPSC		?	
Introduction to Data Mining	CPSC 445	?	?	h	CPSC		?	
Machine Learning for Biology	CPSC 453	2018-19	fall	?	cpsc, s&ds?		Smita Krishnaswamy	
***should this count? from AMTH FAQ: Sensitive	CPSC 457	2017-18	spring	?	?		Michael Fischer	
Theory of Distributed Systems	CPSC 465	2018-19	spring	d	CPSC		James Aspnes	
Cryptography and Computer Security	CPSC 467	2018-19	fall	?	CPSC		Mariana Raykova	
Computational Complexity	CPSC 468	2018-19	varies		CPSC			
Randomized Algorithms	CPSC 469	2016-17	fall	d	CPSC		James Aspnes	

This sheet is a single source of truth. If it's listed here, it counts to the Applied Math major and satisfies the requirements indicated. If you are in doubt about a course, contact the DUS.

***** AS OF 2/19/19, NASH HAS PUT IN ALL COURSES FROM YCPS PAGE, EXCLUDING CORE REQS

Breadth Requirements key

a: optimization

b: probability & statistics

c: partial diff. eqs. & analysis

d: algorithms & numerical methods

e: graph theory

f: mathematical economics

g: electrical engineering

h: data mining & machine learning

i: biological modeling & computation

j: physical sciences

k: engineering

Class Name	Course Number	Year last taught	Semester offered	Breadth?	Concentration?	Other areas:	Recent Professors:	Majors who took (when):
Artificial Intelligence	CPSC 470	2018-19	spring	?	CPSC		Rotates	
***should this count? from AMTH FAQ: Computati	CPSC 474	2018-19	varies	?	CPSC		James Glenn	
Computational Vision and Biological Perception	CPSC 475 (also BENG 475, EENG	2018-19	fall	i	CPSC		Steven Zucker	
Advanced Computational Vision	CPSC 476	2018-19	spring	i	CPSC			
Natural Language Processing	CPSC 477	2018-19	spring		CPSC		Dragomir Radev	Hannah Lawrence (S17)
Spectral Graph Theory	CPSC 662 (also AMTH	2018-19*	fall	e	CPSC		Dan Spielman	Hannah Lawrence (F18)
Deep Learning Theory and Applications	CPSC 663 (also AMTH 663)	2018-19	spring	h	CPSC, S&DS?		Smita Krishnaswamy	
Advanced Topics in Machine Learning & Data Min	CPSC 745	2017-18	spring	h	CPSC, S&DS?		Smita Krishnaswamy, Guy Wolf	
ECON								
Microeconomic Theory	ECON 125	2018-19	fall	f	ECON		Jack Fanning	
Marcoeconomic Theory	ECON 126	2018-19	spring	f	ECON		Giuseppe Moscarini	
Econometrics	ECON 136	2018-19	spring	b, **f?**	ECON / S&DS		Yuichi Kitamura	
Mathematical Economics: General Equilibrium Th	ECON 350	2018-19	fall	f	ECON		Truman Bewley	
Mathematical Economics: Game Theory	ECON 351	2018-19	spring	f	ECON		Johannes Horner	Hannah Lawrence (S19), Burke Snowden (S19)
Computational Methods in Economics	ECON 417	2018-19	spring	f	ECON		Tony Smith	
The Economics of Space	ECON 433	2018-19	varies	f	ECON		Costas Arkolakis	Burke Snowden (F18)
Topics in Cooperative Game Theory	ECON 471	2018-19	spring	f	ECON		Pradeep Dubey	
EENG								
Linear Systems	EENG 342 (also AMTH 342)	2018-19	fall	g			A. Stephen Morse	
Mathematical Methods in Engineering	EENG 397	?	?	g			?	
Dynamic and Discrete Optimization	EENG 400	2017-18	spring	a			Amin Karbasi	Hannah Lawrence (S18)
Systems and Control	EENG 436	2018-19	fall	g			Kumpati Narendra	
Wireless Technologies and the Internet of Things	EENG 451 (also CPSC 456)	2018-19	spring	?	?	course project must be DUS-approved for this course to count!	Wenjun Hu	
Network Algorithms and Stochastic Optimization	EENG 455	2018-19	spring	g, d	?		Leandros Tassiulas	
ENAS								
Applied Numerical Methods for Algebraic Systems	ENAS 440 (also MENG 440)	2018-19	fall, usually	d			Beth Anne Bennett	
Applied Numerical Methods for Differential Equati	ENAS 441	2019-20 (	fall, usually	d			Beth Anne Bennett	
Dynamics of Evolving Systems	ENAS 391	?	?	i			?	
Theoretical Challenges in Network Science	ENAS 962	2017-18	fall	e			Amin Karbasi	Hannah Lawrence (F17)
G&G								
Physics of Weather and Climate	G&G 322	2018-19	varies	j	G&G		Alexey Fedorov	
Climate Dynamics	G&G 323	2016-17	spring	j	G&G		Alexey Fedorov	
Introduction to Earth and Environmental Physics	G&G 342 (also PHYS 342)	2017-18	fall	j	G&G, PHYS		John Wettlaufer	
Geophysical Fluid Dynamics	G&G 421	2018-19	spring	j	G&G		David Bercovici, Mary-Louise Timmermans	
Science of Complex Systems	G&G 428 (also AMTH 428, E&EB	2018-19	fall	j	G&G, PHYS		Jun Korenaga	
Introduction to Seismology	G&G 456	2018-19	fall	j	G&G		Maureen Long	
LING								
Language and Computation	LING 227	2018-19	fall	?	CPSC		Robert Frank	
Topics in Computational Linguistics: Neural Netw	LING 380	2017-18	spring	?	CPSC		Robert Frank	
MATH								
Vector Analysis	MATH 250	2018-19	fall & sprin	c			Caglar Uyanik	Note: for Advanced course for the BS, many more courses count
Basic Analysis in Function Spaces	MATH 260 (also AMTH 260)	2018-19	fall	c			Kirill Serkh	
Topics in Analysis	MATH 300	2018-19	spring	c			Wilhelm Schlag	
Introduction to Analysis	MATH 301	2018-19	fall	c			Peter Jones	
Real Analysis	MATH 305	2018-19	spring	**c?**			Hee Oh	
Introduction to Complex Analysis	MATH 310	2018-19	fall	c			Ronald Coifman	Hannah Lawrence (F17)
Introduction to Abstract Algebra	MATH 350	2018-19	fall	?		Advanced (BS)	Asher Auel	Hannah Lawrence (F16)
Introduction to Algebraic Geometry	MATH 440	2018-19	fall	?		Advanced (BS)	Kalina Mincheva	Hannah Lawrence (F18)
MENG								
Mechanical Engineering I: Strength and Deformati	MENG 280	2018-19	fall	k	Engineering		Eric Brown	
Introduction to Materials Science	MENG 285	2018-19	fall	k	Engineering		Jan Schroers	Adam Madievsky (F18)

Class Name	Course Number	Year last taught	Semester offered	Breadth?	Concentration?	Other areas:	Recent Professors:	Majors who took (when):
Mechanical Engineering II: Fluid Mechanics	MENG 361	2018-19	fall	k	Engineering		Alessandro Gomez	
Mechanical Engineering III: Dynamics	MENG 383	2018-19	spring	k	Engineering		Corey O'Hern	
Theoretical Fluid Dynamics	MENG 463	?	?	k	Engineering		?	
Aerodynamics	MENG 469	2018-19	fall	k	Engineering		Juan Fernandez de la Mora	
PHYS								
Gravity, Astrophysics, and Cosmology	PHYS 343 (also ASTR 343)	2018-19	spring	j			Priyamvada Natarajan, Laura Newburgh	
Quantum and Nanoscale Physics	PHYS 344	2018-19	spring	j			Sean Barrett	Eric Foster (S19)
Advanced Classical Physics from Newton to Einst	PHYS 401, 402	2018-19	fall, then s	j			Nikhil Padmanabhan	
Classical Mechanics	PHYS 410	2018-19	fall	j			Charles Baltay	
Thermodynamics and Statistical Mechanics	PHYS 420 (also APHY 420)	2018-19	fall	j			Nir Navon	
Electromagnetic Fields and Optics	PHYS 430	2018-19	spring	j			David Moore	
Quantum Mechanics and Natural Phenomena I	PHYS 440	2018-19	spring	j			Ramamurti Shankar	
Introduction to Nuclear and Elementary Particle P	PHYS 442	2018-19	spring	j			Charles Baltay	
Mathematical Methods of Physics	PHYS 460	2018-19	fall	j			Nicholas Read	
S&DS								
Theory of Statistics	S&DS 242 (also MATH 242)	2018-19	spring	b	S&DS ?		Andrew Barron	Eric Foster (S18)
Stochastic Processes	S&DS 251 (also S&DS 351)	2018-19	spring	b	S&DS / MATH	Probability core	Yihong Wu and Sahand Ne	Hannah Lawrence (S17)
Linear Models	S&DS 312	2018-19	fall	b	S&DS ?		William Brinda	
Information Theory	S&DS 364	2018-19	spring	b, g	S&DS		Andrew Barron	Hannah Lawrence (S19)
Data Mining and Machine Learning	S&DS 365	2018-19	fall & sprin	h	S&DS	Data analysis c	Derek Feng, John Lafferty,	Eric Foster (S18), Hannah Lawrence (F17)
Advanced Probability	S&DS 400	2018-19	fall	b	S&DS / MATH		Sekhar Tatikonda	
Statistical Inference	S&DS 410	2018-19	fall	b	S&DS		Zhou Fan	
Statistical Case Studies	S&DS 425	2018-19	spring	?	S&DS		Susan Wang	
Statistical Learning Theory	S&DS 669	2018-19	spring	?	S&DS		Sahand Negahban	Hannah Lawrence (S18)
Selected Topics in Neural Nets	S&DS 671	2018-19	spring	?	S&DS		Harrison Zhou	Hannah Lawrence (S19)
Statistical Inference	S&DS 410	2018-19	fall	?	S&DS		Zhou Fan, Harrison Zhou	Daniel Kipnis (F17)
Decision Theory	S&DS 411	2017-18	spring	?	S&DS		Harrison Zhou	