Materials Science & Engineering
Materials Science Engineering (MATSCIE)

220	**Intro Mat & Man**					4.00		ENFORCED
10868	A R LEC 100	MWF	1130-1230PM	AUD CHRYS		Wynarsky		

Structure, properties, and processing relationships in engineering materials. This section is particularly well-suited for Aerospace and NERS students (minor added emphasis on composites and radiation effects on materials).

10869	P RW DIS 101	TH	1130-1230PM	3427 EECS		Repetto		
10870	P RW DIS 102	TH	1030-1130AM	1006 DOW		Dawahre		
10871	P RW DIS 103	TH	130-230PM	1010 DOW		Halvey		
26311	P RW DIS 104	TH	1130-1230PM	185 EWRE		Dawahre		
30434	P RW DIS 105	TH	130-230PM	1018 DOW		Repetto		
23573	P R LEC 200	TTH	330-530PM	133 CHRYS		Yalisove		

This section of MSE 220 is a team based and project based version of the class where the first introduction to the material is NOT lecture, but rather annotated reading. Class time will consist of active learning activities. There will be three group projects in this class. Students will be required to purchase an electronic textbook via the Canvas site that will be live in December. Students will also be required to purchase a subscription to Learning Catalytics ($12). There are no other fees for the course. Homework is graded for effort and honesty - not accuracy. Quizzes are graded by averaging a closed book, closed notes, individual effort, with an open book, open internet, group effort. You will be rewarded for hard work and honesty on homework and exams without the angst of 100% summative assessment. Do not purchase the book at this time. More information will be available on the following website: http://java.engin.umich.edu/220w19

242	**Physics of Matls**					4.00		ADVISORY, ENFORCED
10872	P R LEC 001	MW	12-130PM	1014 DOW		Kioupakis		
242	**Physics of Matls**					4.00		ADVISORY, ENFORCED
	P R LEC 001	F	1130-1230PM	1670 BEYSTER				
250	**Prin Engr Matl**					4.00		ENFORCED
10873	S R LEC 100	MWF	930-1030AM	1017 DOW		Goldman		
16249	P RW DIS 101	TH	1130-1230PM	1006 DOW		Lu		
19730	P RW DIS 103	TH	130-230PM	2166 DOW		Lu		
280	**MSE Ugrad Res Opp**					1.00-4.00		ADVISORY
	D IND +		ARR	ARR				
335	**Kin&Transport**					4.00		ENFORCED
10876	P RW LEC 001	MW	1030-12PM	2150 DOW		Shahani		
335	**Kin&Transport**					4.00		ENFORCED
	P RW LEC 001	F	830-930AM	2150 DOW				
365	**Materials Lab II**					3.00		ENFORCED
10874	S R LEC 001	M	330-430PM	224 GFL		Chambers		

Labs for MSE 365 are held in the Van Vlack Undergraduate Lab, second floor of the H.H. Dow building. For permission to register, contact Patti Vogel at pvogel@umich.edu.

16712	P RW LAB 002	T	1230-430PM	ARR		Valle		
10875	P RW LAB 003	W	130-530PM	ARR		Mensah		
31475	P RW LAB 004	TH	12-4PM	ARR		Bregman		
440	**Ceramic Materials**					3.00		ADVISORY
17607	P LEC 001	TTH	10-1130AM	2150 DOW		Poudeu-Poudeu		
470	**Phys Met**					3.00		ADVISORY, ENFORCED
16251	P R LEC 001	WF	130-3PM	1008 FXB		Allison		
480	**Matls Engr Design**					3.00		ENFORCED
17134	A R LEC 001	TTH	2-330PM	1109 FXB		Taub, Tuteja		
23090	P R LAB 002	TTH	1-2PM	1121 LBME		Taub, Tuteja		

Lab for MSE 480 will be held in either Design lab 1 or 3 in the Duderstat or 1100 Dow North Campus, this will be determined by your instructor

485	**Design Problems**					1.00-4.00		ENFORCED
	R IND +		ARR	ARR				
490	**Research Problems**					1.00-3.00		ENFORCED
	R IND +		ARR	ARR				
500	**Mater Phys Chem**					3.00		
16714	P LEC 001	MW	130-3PM	1006 DOW		Heron		
512	**Phys Polymers**					3.00		ADVISORY
21362	P LEC 001	MW	430-6PM	3150 DOW		Kim		
514	**Comp Matrls**					3.00		ADVISORY
18361	P W LEC 001	TTH	10-1130AM	165 CHRYS		Sevener		
23034	P LEC 881	TTH	10-1130AM	ARR		Sevener		
535	**Kin,Ph Trnsfm&Trnsp**					3.00		ADVISORY
16250	P LEC 001	MW	9-1030AM	2150 DOW		Kieffer		
593	**MSE Special Topics**					3.00		ADVISORY
33205	P W LEC 001	MW	11-1230PM	1018 DOW		Goldsmith		

Applied Data Science for Engineers - The classroom instruction in this course will be aimed to prepare engineering students to use data science tools during their master?s and PhD thesis research as well as for post-graduation in industry, government, and academia. Course content will expand the students? horizons of the utility of data science in real-world contexts and help them reflect on their own understanding of the course material to equip them with the tools and mindset to address the big challenges facing society. This course will familiarize students with the principles of modern data science techniques in the context of chemical engineering, materials science, and research. The course will focus on an overview of data science tools used in engineering and science applications such as data curation, supervised and unsupervised machine learning, and data mining. Algorithms and frameworks covered include the perceptron, dimensionality reduction tools, kernel ridge regression, neural networks, subgroup discovery, compressed sensing, random forests, support vector machines, and causal inference,

among others. Homework exercises include hands-on practice of using data science to solve science and engineering problems. Students will be responsible for a data science project on a topic of interest."

CAT# Class #	Course Title CODE CMP SEC	DAYS	TIME	LOCATION	CR INSTRUCTOR	PREREQ
622	**Ion Beam Mod**				**3.00**	**ADVISORY**
33066	P LEC 001	TTH	1030-12PM	1045 GGBL	Atzmon	
690	**Research Problems**				**1.00-16.00**	
	IND +		ARR	ARR		
890	**Colloq in Mat Sci**				**1.00**	
19279	P R SEM 001	F	10-1130AM	1670 BEYSTER	Heron, Qi, Shahani, Hovden	
990	**Diss-Precand**				**1.00-8.00**	**ADVISORY**
	IND +		ARR	ARR		
995	**Diss-Cand**				**8.00**	**ENFORCED**
	R IND +		ARR	ARR		