Course Codes	
 Code 	MAE
Number	305
Subletter	
Home Dept?	(<mark>Y</mark>
• Code	MAT
Number	301
Subletter	1997
Home Dept?	N.
Title	Mathematics in Engineering I
Topic	
Subletter	
Description	A treatment of the theory of differential equations. The objective is to provide the student with an ability to solve standard problems in this
	field.
Max. Enrollment	
May PDF?	N Company of the Comp
May Audit?	N
Assignments Website	
Final Exam Type	Final
Grading	1
Sample Reading	List
	e Boyce & DiPrima
Title	Elementary Differential Equations & Boundary Value Problems
Sections	
 Format 	L L
Number	<u>01</u>
Status	0
Max. Enrollm	
SCORE Num	ber 20079
Meetings	
	me 11:00:00
Place	BOWEN 222
Days	DOWLIN 222
• Day	1 _M
 Day 	<u> W</u>
 Day 	lF
TBA?	N
TBA? Instructors	
Instructors • First	N Morton
• First Middle	Norton Daniel
• First Middle	N Morton
Instructors First Middle Last I	Morton Daniel Kostin
Instructors First Middle Last	Norton Daniel
Instructors First Middle Last Middle Mi	Morton Daniel Kostin
Instructors First Middle Last Middle Middle Last Middle Last Middle Last Middle	Morton Daniel Kostin Zheng
Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra
Instructors Instr	Morton Daniel Kostlin Zheng Chen Raghavendra Pradeep
Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra
Instructors First Middle Last First Middle Last First Middle Last First Middle Last	Morton Daniel Kostlin Zheng Chen Raghavendra Pradeep
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Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua MAE
Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua MAE 221
Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua MAE 221
Instructors Instr	Morton Daniel Kostlin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua MAE 221 Y
Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua MAE 221 Y Thermodynamics
Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua MAE 221 Y Thermodynamics Heat and work in physical systems. Concepts of energy conversion and entropy, primarily from a macroscopic viewpoint. Thermodynamic
Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua Ma MAE 221 Thermodynamics Heat and work in physical systems. Concepts of energy conversion and entropy, primarily from a macroscopic viewpoint. Thermodynamic potentials and chemical equilibrium. Applications to engines, heat pumps, and fuel cells. In the laboratory, students will carry out
Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua Ma Ma Ma Heat and work in physical systems. Concepts of energy conversion and entropy, primarily from a macroscopic viewpoint. Thermodynamic potentials and chemical equilibrium. Applications to engines, heat pumps, and fuel cells. In the laboratory, students will carry out experiments in the fields of analog electronics and thermodynamics. FOR MAE CONCENTRATORS ONLY, a combined laboratory grade will
Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua MAE 221 Thermodynamics Heat and work in physical systems. Concepts of energy conversion and entropy, primarily from a macroscopic viewpoint. Thermodynamic potentials and chemical equilibrium. Applications to engines, heat pumps, and fuel cells. In the laboratory, students will carry out experiments in the fields of analog electronics and thermodynamics. FOR MAE CONCENTRATORS ONLY, a combined laboratory grade will be issued in the spring laboratory course MAE 224, which includes the laboratory owk of both MAE 221 and MAE 224.
Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua Ma MAE 221 Thermodynamics Heat and work in physical systems. Concepts of energy conversion and entropy, primarily from a macroscopic viewpoint. Thermodynamic potentials and chemical equilibrium. Applications to engines, heat pumps, and fuel cells. In the laboratory, students will carry out experiments in the fields of analog electronics and thermodynamics. FOR MAE CONCENTRATORS ONLY, a combined laboratory grade will be issued in the spring laboratory course MAE 224, which includes the laboratory work of both MAE 221 and MAE 224.
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Instructors Instr	Morton Daniel Kostin Zheng Chen Raghavendra Pradeep Kukillaya Zhanhua Ma MAE 221 Thermodynamics Heat and work in physical systems. Concepts of energy conversion and entropy, primarily from a macroscopic viewpoint. Thermodynamic potentials and chemical equilibrium. Applications to engines, heat pumps, and fuel cells. In the laboratory, students will carry out experiments in the fields of analog electronics and thermodynamics. FOR MAE CONCENTRATORS ONLY, a combined laboratory grade will be issued in the spring laboratory course MAE 224, which includes the laboratory work of both MAE 221 and MAE 224.

Website
Final Exam Type Final
Grading
• Perc. 20
Type MidTerm Exam
• Perc 40
• Perc. 40 Type Final Exam
туре јелна ехант
• Perc. 40
Type Problem Set(s)
Sample Reading List
Author Name Moran & Shapiro
Title Fundamentals of Engineering Thermodynamics, 5th Ed.
Sections • Format B
Number 01
Status 0
Max. Enrollment 12
SCORE Number 20059
Meetings
• Beg. Time 13:30:00
End Time 16:20:00
Place EQUAJ J209
Days
• Day M
TBA? N
• First Michael
Middle Middle
Last Vocaturo
• First Syed
Middle Sohail Hamid Last Zaidi
Last Zaidi
• First Grunde
Middle
Last Jomaas
• Format B
Number 02
Status X
Max. Enrollment 12
SCORE Number 20060
Meetings
• Beg. Time 13:30:00
End Time 16:20:00
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Instructors
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Last Vocaturo
• First Syed
Middle Sohail Hamid
Last Zaidi
• First Grunde
Middle
Last Jomaas

• Format	B
Number	03
Status	0
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	nber 20061
Meetings	
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	ne <mark>16:20:00</mark>
Place	EQUAJ J209
Days	
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Instructors	
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Middle	Markey
Last	Vocaturo
 First 	Syed
	Sohail Hamid
Last	Zaidi
First	Emanuel Colonia de la Colonia
	Solomon
Last	Stockman
 Format 	B
Number	04
Status	
Max. Enroll	
	nber 20062
Meetings	
Beg. T	me <mark>13:30:00</mark>
	ne 16:20:00
Place	EOUAJ J209
Days	
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TBA?	N N
Instructors	
 First 	Michael
Middle	
Last	Vocaturo
 First 	Syed
	Sohail Hamid
	Zaidi
	Chun-Wei
Middle	
Last	rau
 Format 	L L
Number	01
Status	0
Max. Enroll	ment 60
	nber 20063
Meetings	
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	ne <mark>10:50:00</mark>
Place	FRIEN 004
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	y <mark> F</mark>
TBA?	N
Instructors	
 First 	Daniel
Middle	
Last	Nosenchuck

Format C
Number 01
Status 0
Max. Enrollment 50
SCORE Number 20064
Meetings
• Beg. Time 12:30:00
End Time 13:20:00
Place EQUAD D221
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• Day M
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Instructors
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Middle Mark
Last Nosenchuck
• First Syed
riist Syeu Middle Sohail Hamid
Last Zaidi
Last Zaiui

Course Codes	
Code	MAE
Number	223
Subletter	
Home Dept?	V
· ·	
• Code	<u>CEE</u>
Number	323
Subletter	
Home Dept?	
Title	Modern Solid Mechanics
Topic	
Subletter	
Description	Fundamental principles of solid mechanics: equilibrium equations, reactions, internal forces, stress, strain, Hooke's law, torsion, beam bending and deflection, and analysis of stress and deformation in simple structures. Integrates aspects of solid mechanics that have applications to mechanical and aerospace structures (engines and wings), as well as to microelectronic and biomedical devices (thin films and artificial hearts). Topics include stress concentration, fracture, plasticity, fatigue, visco-elasticity and thermal expansion. The course synthesizes descriptive observations, mathematical theories, and engineering consequences.
Max. Enrollment	60
May PDF?	Y
May Audit?	Y
Assignments	Weekly homework assignments, accounts for 30% of the final grade. Weekly quizzes, accounts for 5% of the final grade.
Website	
Final Exam Type	Final
Grading	
• Perc. 25	
Type MidTe	rm Exam
• Perc. 40	
Type Final I	Exam
• Perc. 5	
Type Quizze	25
• Perc. 30	
Type Proble	m Set(s)
Sample Reading	List
 Author Nam 	e E.J. Hearn
Title	Mechanics of Materials, Volumes 1 & 2 (Pergamon)
Author Nam	e J.P. Den Hartog
Title	Mechanics (Dover)
Sections	[wechanics (bover)
Format	Ti .
Number	01
Status	0
Max. Enrolln	
SCORE Num	
Meetings	
	ne 11:00:00
End Tim	e <mark>12:20:00</mark>
Place	EQUAD D221
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TBA?	IN
Instructors	P. Control of the con
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Middle	
Last	Yang

Course Cooks Number 331 Subsetter Trans Expert Part Flight Dynamics Sobietter Description Introduction to the performance, stability, and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the dynamics of physical systems. Characterization of modes of motion and destrable flying qualities. Case studies in aircraft stability and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the dynamics of physical systems. Characterization of modes of motion and destrable flying qualities. Case studies in aircraft stability and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the dynamics of physical systems. Characterization of modes of motion and destrable flying qualities. Case studies in aircraft stability and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the control of aircraft. Fundamental aerodynamics of physical systems. Characterization of modes of motion and destrable flying qualities. Case studies in aircraft stability and control of aircraft. Fundamentals of control of aircraft. Fundamentals of aircraft stability and control of aircraft. Fight Dynamics, Princeton University Press, 2004 Author Name (Marcagna aerodynamics) physical aerodynamics	- Code Number 3 Subletter Home Dept? Y Title A Topic Subletter Description II Max. Enrollment 6 May PDF? May Audit? Assignments M Website Final Exam Type F Grading - Perc. 20 Type MidTerm - Perc. 35 Type Final Exa - Perc. 10 Type Problem - Perc. 35 Type Problem - Perc. 35 Type Problem - Perc. 10 Type Protect II - Author Name ITitle - Author Name ITitle - Author Name ITitle - Author Name ITitle - Sections - Format Number Status - Max. Enrollmer SCORE Number Meetings - Beg. Time End Time Place Days	Introduction to the performance, stability, and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the tynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and control. All
Code MAE Number 331 Sabeleter Home Dept? Y Title Aircraft Flight Dynamics Toole Sabeleter Home Dept? Y Title Aircraft Flight Dynamics Toole Sabeleter Description	Code Number Subletter Home Dept? Y Title A Topic Subletter Description In Max. Enrollment May PDF? May Audit? Assignments Website Final Exam Type F Grading Perc. 20 Type MidTerm Perc. 35 Type Final Exa Perc. 10 Type Problem Perce 35 Type Problem Sample Reading Lis Author Name I Title Beg. Time End Time Place Days	Introduction to the performance, stability, and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the tynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and control. All
Subletier Tigle Acroal Flight Dynamics Topic Acroal Flight Dynamics Topic Description Introduction to the performance, stability, and control of aircraft. Fundamentals of configuration serodynamics. Methods for analyzing the dynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and Max. Enrollment 500. Max. Enrollment 600. Max. En	Number Subletter Home Dept? Y Title Topic Subletter Description Max. Enrollment 6 May PDF? May Audit? Nassignments Website Final Exam Type F Grading Perc. 20 Type MidTerm Perc. 35 Type Final Exa Perc. 10 Type Precept I Perc. 35 Type Problem Sample Reading Lis Author Name I Title Author Name I Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	Introduction to the performance, stability, and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the tynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and control. All
Title Acraft Fight Dynamics Topic	Home Dept? Y Title Topic Subletter Description Max. Enrollment 6 May PDF? May Audit? Assignments Website Final Exam Type F Grading Perc. 20 Type MidTerm Perc. 35 Type Final Exa Perc. 10 Type Precept I Perc. 35 Type Problem Sample Reading Lis Author Name Title Author Name Title Author Name Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	Introduction to the performance, stability, and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and ontrol. O
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Subletter Description dynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and control control. Max Enrollment 60 May PUP? N May Austir? N Max Spannents NMs of problem sets and short projects. Verballe Trading Per 10 Type Midlerem Exam Perc 10 Type Problem Set(s) Sample Reading List Trade Right Dynamics, Princeton University Press, 2004 Author Name M.J. Azzug and E.E. Larrabee Title Right Dynamics, Princeton University Press, 2004 Author Name M.J. Azzug and E.E. Larrabee Title Right Dynamics Princeton University Press, 2004 Max Enrollment 10 Sections Control Number 10 Status 0 Max Enrollment 20 Set 10 Status 0 Max Enrollment 20 Set 10	Topic Subletter Description In Max. Enrollment 6 May PDF? May Audit? Nassignments Website Final Exam Type F Grading Perc. 20 Type MidTerm Perc. 35 Type Final Exa Perc. 10 Type Precept I Perc. 35 Type Problem Sample Reading Lis Author Name I Title Author Name I Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	Introduction to the performance, stability, and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and ontrol. O
Subletter Description Introduction to the performance, stability, and control of aircraft. Fundamentals of configuration acrodynamics. Methods for analyzing the dynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and control. Max Froriment So May PDF? N May Audiff Is Is Interest I	Subletter Description Ir de	lynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and ontrol. O
Description on Introduction to the performance, stability, and control of aircraft. Fundamentals of configuration aerodynamics. Wethods for analyzing the dynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the dynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and Assignments. May Depth of the Control of t	Description In de Communication Max. Enrollment 6 May PDF? Nay Audit? Nassignments Nassignment	lynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and ontrol. O
dynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and control. Max. Enrollment GO May POP? Nay Audit? Nay Audit? Nay Pope May Pope May Pope May Audit? Nay Pope May Pope Ma	Max. Enrollment 6 May PDF? N May Audit? N Assignments N Website Final Exam Type F Grading Perc. 20 Type MidTerm Perc. 35 Type Final Exa Perc. 10 Type Precept 1 Perc. 35 Type Problem Sample Reading Lis Author Name Title Author Name Title Author Name Title Author Name Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	lynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and ontrol. O
May Audit? N Assignments Mix or problem sets and short projects. Website Final Exam Type Final Groding Perc. 20 Type Midlerem Exam Parc. 35 Type Final Exam Perc. 10 Type Procept Participation Perc. 10 Perc. 20 Perc.	May PDF? May Audit? Assignments Website Final Exam Type F Grading Perc. 20 Type MidTerm Perc. 35 Type Final Exa Perc. 35 Type Precept 10 Percept 10 Author Name Title Author Name Title Author Name Title Sections Format Number Status Max. Enrollmer SCORE Number Meetings Beg. Time End Time Place Days	Alix of problem sets and short projects. Alix of problem sets and short
Max Assignments Mx of problem sets and short projects. Website Final Exem Type Final Grading - Perc, 20 Type MidTorm Exem - Perc, 10 Type Precept Participation - Perc, 155 Type Problem Set(5) Sample Reading List - Author Name IR. Stongel Title Flight Dynamics, Princeton University Press, 2004 - Author Name IM. J. Abzug and E. E. Larrabee Title Alzena Stability and Control Sections - Format I. Number 01 Status 0 Max Enrollment 60 SCORE Rumber 20081 - Meetings - Beg. Time 15:00:00 End Time. 16:20:00 Place EQUAD D221 Days - Day Th TISTAY N TISTAY N TISTAY N TISTAY Middle Last Taylor First Stengel - First Sunil Middle Last Taylor First Stengel - First Sunil Middle Last Iliak - First Sunil Middle Last Sunil Middle Last Iliak - First Sunil Middle Middle Last Iliak - First Sunil Middle Middle Last Iliak - First Sunil Middle Middle Middle Middle Middle Last Iliak - First Sunil Middle	May Audit? Assignments Website Final Exam Type F Grading Perc. 20 Type MidTerm Perc. 35 Type Final Exa Perc. 35 Type Problem Sample Reading Lis Author Name Title Author Name Title Author Name Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	Alix of problem sets and short projects. Inal Description Set(s) St R. Stengel Flight Dynamics, Princeton University Press, 2004
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Final Exam Type Enal Grading	Final Exam Type F Grading Perc. 20 Type MidTerm Perc. 35 Type Final Exa Perc. 10 Percept Perc. 35 Type Problem Sample Reading Lis Author Name Title Author Name Title Author Name Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	Participation Set(s) st R. Stengel Flight Dynamics, Princeton University Press, 2004
Perc. 20	Grading Perc. 20 Type MidTerm Perc. 35 Type Final Exa Perc. 10 Type Precept I Perc. 35 Type Problem Sample Reading Lis Author Name Title Author Name Title Author Name Intitle Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	Participation Set(s) st R. Stengel Flight Dynamics, Princeton University Press, 2004
Perc. 20	Perc. 20 Type MidTerm Perc. 35 Type Final Exa Perc. 10 Type Precept I Perc. 35 Type Problem Sample Reading Lis Author Name I Title Author Name I Title Author Name I Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	Participation Set(s) st R. Stengel Flight Dynamics, Princeton University Press, 2004
Perc. 35 Type Final Exam Perc. 10 Type Precept Participation Perc. 35 Type Problem Set(s) Sample Reading List Author Name R. Stengel Title Airplane Stability and Control Sections Format	Perc. 35 Type Final Exa Perc. 10 Type Precept I Perc. 35 Type Problem Sample Reading Lis Author Name Title Author Name Title Author Name Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	Participation Set(s) st R. Stengel Flight Dynamics, Princeton University Press, 2004
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Perc. 35	Perc. 35 Type Problem Sample Reading Lis Author Name I Title Author Name I Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	Set(s) st R. Stengel Flight Dynamics, Princeton University Press, 2004
Type Problem Set(s) Sample Reading List - Author Name R. Stengel Title Flight Dynamics, Princeton University Press, 2004 - Author Name M. J. Abzug and E. E. Larrabee Title Airplane Stability and Control Sections - Format L. Number 01 Status 0 Max. Enrollment 60 SCORE Number 20081 Meetings - Beg. Time 15:00:00 End Time 16:20:00 Place EQUAD D221 Days - Day T - Day T TBA? N Instructors - First Ellen Middle Meredith Last Taylor - First Robert Middle Meredith Last Stengel - First Milos Middle Last Ital Middle Doulatram Last Ahuja - Format P Number 01 Number 01 Number 01 Number 01	Type Problem Sample Reading Lis Author Name I Title Author Name I Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	st R. Stengel Flight Dynamics, Princeton University Press, 2004
Type Problem Set(s) Sample Reading List - Author Name R. Stengel Title Flight Dynamics, Princeton University Press, 2004 - Author Name M. J. Abzug and E. E. Larrabee Title Airplane Stability and Control Sections - Format L. Number 01 Status 0 Max. Enrollment 60 SCORE Number 20081 Meetings - Beg. Time 15:00:00 End Time 16:20:00 Place EQUAD D221 Days - Day T - Day T TBA? N Instructors - First Ellen Middle Meredith Last Taylor - First Robert Middle Meredith Last Stengel - First Milos Middle Last Ital Middle Doulatram Last Ahuja - Format P Number 01 Number 01 Number 01 Number 01	Type Problem Sample Reading Lis Author Name I Title Author Name I Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	st R. Stengel Flight Dynamics, Princeton University Press, 2004
- Author Name R. Stengel Title Flight Dynamics, Princeton University Press, 2004 - Author Name M.J. Abzug and E.E. Larrabee Title Airplane Stability and Control Sections - Format L. Number 01 Status 0 Max. Enrollment 60 SCORE Number 20081 Meetings - Beg, Time 15:00:00 End Time 16:20:00 Place EQUAD D221 Days - Day Th TBA? N Instructors - First Ellen Middle Meredith Last Taylor - First Robert Middle Frank Last Stengel - First Milos Middle Last Ilak - First Sunli Middle Doulatram Last Ahuja - Format P Number 01 Format P Number 01	Author Name Title Author Name Title Author Name Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	R. Stengel Flight Dynamics, Princeton University Press, 2004
Author Name M.J. Abzug and E.E. Larrabee	Title - Author Name Title Sections - Format Number Status Max. Enrollmer SCORE Number Meetings - Beg. Time End Time Place Days	Flight Dynamics, Princeton University Press, 2004
- Author Name M.J. Abzug and E.E. Larrabee Title Airplane Stability and Control Sections - Format L. Number 01 Status 0 Max. Enrollment 60 SCORE Number 20081 Meetings - Beg. Time 15:00:00 End Time 16:20:00 Place EQUAD D221 Days - Day T - Day Th TBA? N Instructors - First Ellen Middie Meetith Last Taylor - First Robert Middie Frank Last Stengel - First Milos Middie Last Ilak - First Sunil Middie Doulatram Last Ahuja - Format P Number 01 Format P Number 01	Author Name Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	
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Sections Sections	Title Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	M.J. ADZUQ and E.E. Larradee
Format	Sections Format Number Status Max. Enrollmer SCORE Numbe Meetings Beg. Time End Time Place Days	
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Instructors First Ellen Middle Meredith Last Taylor First Robert Middle Frank Last Stengel First Milos Middle Last Illak First Sunil Middle Doulatram Last Ahuja Format P Number 01		
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Middle Meredith Last Taylor First Robert Middle Frank Last Stengel First Milos Middle Last Illak First Sunil Middle Doulatram Last Ahuja Format P Number 01		en
Last Taylor First Robert Middle Frank Last Stengel First Milos Middle Last Ilak First Sunil Middle Doulatram Last Ahuja Format P Number 01		
First Robert Middle Frank Last Stengel First Milos Middle Last Illak First Sunil Middle Doulatram Last Ahuja Format P Number 01		
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First Sunil Middle Doulatram Last Ahuja Format P Number 01		
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Number 01	Last Ah	uja
Number 01	• Format	lp
JIGIUS IA	Status	TX
Max. Enrollment 60		
SCORE Number 22359		
Meetings		
Instructors	Instructors	
	Course Codes	

• Code	MAE
Number	<u>321 </u>
Subletter	
Home Dept?	
Title	Engineering Design
Topic	
Subletter	
Description	Focus on engineering fundamentals, design processes and procedures. Course covers materials selection and design, machine design and
	innovation, and design and manufacture for a global environment. Parametric-design and finite-element simulation techniques are
	introduced in the computer-design laboratory. Instruction in basic and computer-based fabrication and prototyping methods is given in the
	manufacturing laboratory. Teams of students conduct design projects which involve the complete design cycle from concept and
	fundamental engineering through optimization, prototype, and test. Description continued in Other Information.
Max. Enrollment	
May PDF?	N Company of the comp
May Audit?	N Control of the cont
Assignments	Reading from references and notes. One major project. Lab reports and problem sets. Mid-term exam. The project will involve design
	concepts, component and system design, construction and device fabrication.
Website	
Final Exam Type	Take-Home
Grading	
 Perc. 25 	
Type MidTer	rm Exam
• Perc. 25	
	Desirate)
Type Design	Project(s)
• Perc. 25	
	lome Final Exam
31	
• Perc. 10	
Type Lab Re	eports
• Perc. 15	
Type Proble	m Sat(a)
Sample Reading	
	Shigley and Mische
Title	Mechania Ingineering Design
Title	International Engineering Design
 Author Name 	M.F. Ashby
Title	Materials Selection in Mechanical Design
Sections	
 Format 	В
Number	01
Status	x
Max. Enrollm	ent 15
SCORE Numl	per 20065
Meetings	
Beg. Tim	ne 13:30:00
End Tim	e 16:20:00
Place	EQUAC C119
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TBA?	N N
Instructors	
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Middle A	Arther
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Middle	
Last F	u

Format	В	
Number	02	
Status	0	
Max. Enrollmer		
SCORE Number		
Meetings	2 1	
Beg. Time	13:30:00	
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	EQUAC C119	
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Instructors		
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Middle Art		
Last No	rthey	
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Format	B	
Number	03	
Status	0	
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SCORE Number		
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	EQUAC C119	
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Cormot	B	
Format	04	
Number		
Status		
Max. Enrollmer		
SCORE Number	er <mark>20068</mark>	
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End Time		
Place	EQUAC C119	
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Instructors		
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	orthey	

Format B	
Number 05	
Status O	
Max. Enrollment 15	
SCORE Number 20069	
Meetings	
• <u>Beg. Time</u> 13:30:00	
End Time 16:20:00	
Place EQUAC C119	
Days	
• Day F	
TBA? N	
Instructors	
• First Glenn	
Middle Arther Last Northey	
Last Nottney	
Format L	
Number 01	
Status O	
Max. Enrollment 59	
SCORE Number 20070	
Meetings	
Beg. Time 11:00:00	
End Time 12:20:00 Place FRIEN 004	
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Days Day T Day Th TBA? N Instructors	
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Days Day T Day Th TBA? N Instructors	

Course Codes	
Code	MAE
Number	324
Subletter	
Home Dept?	
Title	Structure and Properties of Materials
Topic	
Subletter	
Description	Provides the materials background needed to satisfy the department requirement in this area. Relates properties of metals, alloys, polymers, composite materials, semiconductors, and ceramics to their atomic level and microscopic structure. Relates special materials properties to their exploitation in advanced technology and will illustrate this with specific examples.
Max. Enrollment	55
May PDF?	Y
May Audit?	Y
Assignments	Weekly problem sets, question cards, and reading in reference texts.
Website	Flori
Final Exam Type Grading	Final
Perc. 20	
Type MidTer	m Exam
• Perc. 40 Type Final E	xam
• Perc. 20	
Type Other	Exam
• Perc. 5	
Type Precep	t Participation
• Perc. 15	
Type Proble	
 Sample Reading Author Name 	
Title	Materials Science & Engineering
Sections	waterials Science & Engineering
Format	I.
Number	01
Status	0
Max. Enrollm	ent 55
SCORE Num	per 20082
Meetings	
	e 13:30:00
	E 14:50:00
Place Days	EQUAD D221
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TBA? Instructors	N
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Format	P established
Number Status	01 X
Max. Enrollm	
SCORE Num	ter J20083
Meetings	
	ne 12:30:00
End Tim	e <u>13:20:00</u>
Place	EQUAD D221
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TBA?	N Section 1 and 1
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Middle	n-varisin
	Muralidharan

• Code	l MAE
Number	335
Subletter	
Home Dept?	Y
Title	Fluid Dynamics
Topic	
Subletter	
	The first half of the course deals with one-dimensional compressible flows, with special emphasis on jet propulsion applications. The second half of the course deals with aerodynamics of two and three-dimensional wings and bodies, concepts of thrust, lift and drag (frictional and lift-induced). Homework will include design problems and computational examples.
Max. Enrollment	50
May PDF?	Y
May Audit?	Y
Assignments	Reading 30-40 pages of text. Weekly problem sets.
Website	
Final Exam Type	Final
Grading	
• Perc. 30	
Type MidTer	rm Exam
 Perc. 40 	
Type Final E	xam
• Perc. 30	
Type Proble	m Sat(s)
Sample Reading	
Author Name	
Title	Fundamentals of Aerodynamics
Author Name	elKuethe & Chow
Title	Foundations of Aerodynamics
Author Name	Smits
Title	A Physical Introduction to Fluid Mechanics

Author Name Liepmann and Roshko
Title Elements of Gas Dynamics

Sect	ions
	Format L
	Number 01
	Status O
	Max. Enrollment 50
	SCORE Number 20071
	Meetings
	• Beg. Time 10:00:00
	End Time 10:50:00
	Place EQUAD D221
	Days
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	TBA? N
	Instructors
	• First Maria
	Middle Pino
	Last Martin
	Format P
	Format P Number 01
	Status X
	Status A A A A A A A A A A A A A A A A A A A
	Waa. Lindinger 30084
	Secret Number 120004 Meetings
	Beg. Time 19:30:00
	End Time 20:50:00
	Place EQUAD D221
	Days
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	TBA? N
	Instructors
	· First Bo
	Middle
	Last Xu
	· First Zhili
	Middle
	Last Zhang

Course Codes	
• Code	MAE
Number	501
Subletter	
Home Dept?	
Title	Mathematical Methods of Engineering Analysis I
Topic	
Subletter	
Description	Methods of mathematical analysis for the solution of problems in physics and engineering. Topics include an introduction to functional analysis, linear analysis & eigenvalue problems for matrices & operators, Sturm-Liouville theory, Green's functions for the solution of linear ordinary differential equations and Poisson's equation, and the calculus of variations, and the inverse and implicit function theorems.
Max. Enrollment	
May PDF?	N Company of the comp
May Audit?	Y
Assignments	
Website	
Final Exam Type	Other
Grading	
Sample Reading	
	L. Debnath & PR Mikusinski
Title	Introduction to Hilbert Spaces with Applications
	RA Horn & CR Johnson
Title	Matrix Analysis
Author Name	M. Greenberg
Title	Foundations of Applied Mathematics
	IS Sokolniroff & RM Redheffer
Title	Mathematics of Physics & Modern Engineering
Sections	
 Format 	L L
Number	<mark>01</mark>
Status	0
Max. Enrollm	
SCORE Numb	per <mark>20311</mark>
Meetings	
	le <mark>09:00:00</mark>
	e <mark>10:20:00</mark>
Place	EQUAA A224
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Last L	eonard

Cou	ırse Codes	
•	Code	MSE
	Number	501
	Subletter	
	Home Dept?	Y
	2 1	
•	Code	MAE
	Number Subletter	561
	Home Dept?	N.
Title		Introduction to Materials
Top		miroduction to waterials
	letter	
	cription	Emphasizes the connection between microstructural features of materials and their properties, and how processing conditions control
		structure. Topics include atomic bonding, crystal structure, thermodynamics, phase diagrams, defects, microstructure, diffusion, phase transformations, nucleation, coarsening, glasses, elastic and plastic deformation, fracture, processing, composites, and electronic properties.
Max	k. Enrollment	
	y PDF?	<u>Y</u>
	y Audit?	Y
Ass	ignments	
	bsite	
	al Exam Type	Other
	ding	
San	nple Reading	
•	Author Name Title	Physical Properties of Crystals
	Author Name	
•	Title	Physical Metallurgy
	Author Name	
-	Title	Polymers Materials
•	Title	Y.T. Ciang, D. Birnie, and W.D. Kingery Physical Ceramics
•		D.A. Porter and K.E. Easterling
	Title	Phase Transformations in Metals and Alloys
•	Author Name	
	Title	Introduction to Solid State Physics
Sec	tions	
•	Format	
	Number Status	01 0
	Max. Enrollm	
	SCORE Numb	
	Meetings	
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	End Time	e 15:50:00
	Place	BOWEN 222
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Course Codes	
Code	MAE
Number	339
Subletter	337
Home Dept?	v.
Title	Independent Work
Topic	
Subletter	
Description	Student selects subject and advisor - defines problem to be studied and proposes work plan. A list of possible subjects of particular interest to faculty and staff members is provided. Written report and oral presentation at end of semester to faculty, staff, fellow students and quests. Independent work is intended for juniors or seniors doing only a one term project. 339 Fall Term project; 340 Spring Term project.
Max. Enrollment	40
May PDF?	N
May Audit?	N
Assignments	
Website	
Final Exam Type	Othor
Grading	Other
• Perc. 75	la Liou of Final
Type Paper	In Lieu of Final
• Perc. 20	
	esentation(s)
	V .
• Perc. 5	
	t Participation
Sample Reading	List
Sections	
 Format 	C C
Number	<mark>01</mark>
Status	
Max. Enrollm	
SCORE Num	per <mark>20072</mark>
Meetings	
 Beg. Tim 	ne <mark>12:30:00</mark>
End Tim	e <u>13:20:00</u>
Place	FRIEN 110
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Instructors	
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 Format 	
Number	02
Status	02
Max. Enrollm	
SCORE Numl	
Meetings	20073
	e 19:30:00
	e 20:20:00
Place	FRIEN 110
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Instructors	
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Course Codes	
Code	MAE
Number	339
Subletter	<u>D</u>
Home Dept?	
Title	Independent Work with Design
Topic	independent work with besign
Subletter	D
Description	
	Course similar to MAE 339-340. Principal difference is that the project must incorporate aspects and principals of design for a system, product, vehicle, device, apparatus, or other design element. Written report and oral presentation at end of semester to faculty, staff, fellow students and guests. Independent work with design is intended for juniors or seniors doing only a one term project. 339D Fall Term

Description	This course will develop an overview of technology and emission control of modern internal combustion power plants. Fundamental concepts of phenomena associated with mobile power plant design and applications, including both air-breathing and non-airbreathing propulsion will be discussed. Material on spark ignition and diesel power plants, as well as air-breathing propulsion devices, primarily gas turbines, and chemical rockets, will be covered. In addition, combustion emission and emission control will be discussed. Throughout the course, (See other information)
Max. Enrollment	40
May PDF?	N.
May Audit?	N Company of the comp
Assignments	Homework problems, readings, and a sharply focused paper, (10 pages). Check within two weeks of Course Initiation for Recommended Textbook Purchases. Library reserve of all references will be available.
Website	
Final Exam Type	Final
Grading	
 Perc. 30 	
Type MidTer	rm Exam
• Perc. 35	
Type Final E	xam
• Perc. 5	
Type Precep	t Participation
• Perc. 30	
Type Proble	m Set(s)
Sample Reading	List
Author Name	Ferguson and Kirkpatrick
Title	Internal Combustion Engines:Applied Thermal Sciences, 2nd Ed
Author Name	Hill and Peterson
Title	Mechanics and Thermodynamics of Propulsion
	Wark, Warner, and Davis
Title	Air Pollution, Its Origin and Control
Author Name	
Title	Rocket Propulsion Elements

Author Name Lecture notes are generally distributed throughout
Title the course

Sec	ons
	Format L
	Number 01
	Status O
	Max. Enrollment <mark>40</mark>
	SCORE Number 20076
	Meetings
	Beg. Time 11:00:00
	End Time 11:50:00
	Place EQUAD D221
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	• Day W
	• Day F
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	nstructors First Frederick
	rist Frederick Middle Lewis
	made cens Last Dryer
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	Number 01
	Status O
	Max. Enrollment 40
	SCORE Number 20077
	Meetings Page Time 10:00:00
	End Time 10:00:00
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	TBA? N
	nstructors
	First Frederick
	Middle Lewis
	Last Dryer
	•
	First Timothy
	Middle Michael
	Last Ombrello

Course Codes	
• Code	ELE
Number	<mark>521 </mark>
Subletter	
Home Dep	!? <mark> Y</mark>
• Code	MAE
Number	MAE 547
Subletter	341
Home Dep	P N
Title	Linear System Theory
Topic	Elicar System ricory
Subletter	
Description	This course covers the fundamentals of linear system theory. Various topics important for further study in dynamic systems, control and
B oson priori	communication and signal processing are presented.
Max. Enrollmer	
May PDF?	Y
May Audit?	Y
Assignments	
Website	
Final Exam Typ	e Final
Grading	
Sample Readin	g List
Author Na	ne Brockett
Title	Finite Dimensional Linear Systems
	ne Delchamps
Title	State Space and Input Output Linear Systems
 Author Na 	ne Kailath
Title	Linear Systems
	me Wonham
Title	Linear Multivariable Control: A Geometric Approach
Author Na	ne lRugh
Title	Linear Systems Theory
Sections	
 Format 	L
Number	01
Status	0
Max. Enrol	lment 36
	mber 20487
Meetings	
	ime 15:00:00
End Ti	me 16:20:00
Place	FRIEN 108
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TBA?	N N
Instructors	
First	Peter
	Jeffrey
Last	Ramadge
Last	
 First 	Jiaping
Middle	
Last	Liu

Course Codes	
Code	MAE
Number	435
Subletter	
Home Dept	? <u>Y</u>
Title	Special Topics in Mechanical and Aerospace Engineering
Topic	Entrepreneurial Engineering
Subletter	
Description	This course builds on the technical foundations established in the engineering program, and extends the scope to include the business, financial, and marketing components that lead to successful entrepreneurial ventures. Students will be directly engaged in the process of identifying, creating and exploiting entrepreneurial opportunities. Entrepreneurial design will be introduced and developed. Students, working in small multidisciplinary teams, will identify, design and prototype a highly marketable, consumer product. Classic and modern market analysis, manufacture and distribution will be introduced along with business planning & finance.
Max. Enrollmen	
May PDF?	Y
May Audit?	Y
Assignments	Reading/Writing Assignments: Reading will be from distributed materials and printed and web-based references. Midterm and final reports (business plans and design reports). Presentations.
Website	
Final Exam Typ	e <mark>Utner</mark>
Grading	
• Perc. 50	Project(A)
	ın Project(s)
• Perc. 25	
-,-	Presentation(s)
• Perc. 25	AR HI H
	pt Participation
Sample Reading	
	H.H. Stevenson, M.J. Roberts & H. Grousbeck (5th Ed.)
Title	New Business Ventures & the Entrepreneur, 1999 McGraw Hill
 Author Nan 	The Indus Entrepreneurs (TiE) (Wiley 2003) - Essentials
Title	of Entrepreneurship: What it Takes to Create Successful
	T.R. Hawthorne, NTC Business Books, 1997
Title	The Complete Guide to Infomercial Marketing
Author Nan	L.C. Farrell (Wiley 2003) - Getting Entrepreneurial:
Title	Creating & Growing Your Own Business in the 21st Century
Sections	I see and the second se
 Format 	L
Number	01
Status	0
Max. Enroll	ment 30
	nber 20078
Meetings	
Beg. Ti	me 15:00:00
End Tir	ne 16:20:00
Place	EQUAD D221
Days	
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Instructors	
	<u>Daniel</u>
Middle	
Last	Nosenchuck

Course Codes	
• Code	MAE
Number	437
	101
Subletter	ly
Home Dept?	1 ^Y
• Code	EGR
Number	437
	437
Subletter	
Home Dept?	
Title	Introduction to Innovation Process Management
Topic	
Subletter	
Description	In today's hypercompetitive global marketplace, innovation is the lifeblood of any business enterprise. This course exposes students to all
·	fundamental aspects of the technological innovation process: invention/concept development, intellectual property, business plan
	preparation, competitive intelligence, R&D management, and critical success factors, project management, commercialization. It covers the
	basic management practices required to excel in the craft of successful innovation and prepares students to become technology-savvy
	leaders of industry or government, as well as managers and executives in a complex technological society.
Max. Enrollment	30
May PDF?	v
May Audit?	I and the second
Assignments	Specific reading assignments will be given out at the beginning of each lecture. Attendance counts for 20% of the final grade.
Website	
Final Exam Type	Take-Home
Grading	
 Perc. 40 	
	ome Final Exam
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 Perc. 20 	
Type Oral P	resentation(s)
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 Perc. 20 	
Type Precep	ot Participation
_	
• Perc. 20	
	(See Instructor)
Sample Reading	
	W.L. Miller and L. Morris
Title	Fourth Generation R&D
A Ale Al	lui parana
	M.L. Patterson
Title	Accelerating Innovation
Author Name	E.I. Schwartz
Title	Juice: The Creative Fuel that Drives World-Class Inventors
THIC	Suice. The dreamer fact that blives word-class inventors
 Author Name 	P. Drucker
Title	Management Challenges for the 21st Century
	J.A. Heim and W.D. Compton
Title	Manufacturing Systems: Foundations of World-Class Practice
Author Nove	D.C. Copper, Winning at New Bradwater
Title	R.G. Cooper, Winning at New Products:
	Accelerating the Process from Idea to Launch, 3rd Ed.
Sections	I.
Format	L. C.
Number	01
Status	<u>0</u>
Max. Enrollm	nent 30
SCORE Num	ber <mark>22100</mark>
Meetings	
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Course Codes	MAE
Code Number	541
Subletter	341
Home Dept?	v -
Home Dept:	l e e e e e e e e e e e e e e e e e e e
• Code	APC
Number	<u>571</u>
Subletter	
Home Dept?	
Title	Applied Dynamical Systems
Topic	
Subletter	
Description	Phase-plane methods and single-degree-of-freedom nonlinear oscillators; invariant manifolds, local and global analysis, structural stability
	and bifurcation, center manifolds, and normal forms; averaging and perturbation methods, forced oscillations, homoclinic orbits, and chaos;
Mary Francisco	and Melnikov's method, the Smale horseshoe, symbolic dynamics, and strange attractors.
Max. Enrollment May PDF?	<u>30</u> Y
May Audit?	T V
Assignments	
Website	
Final Exam Type	Other
Grading	VIII.
Sample Reading	List
	J. Guckenheimer & P. Holmes
Title	Nonlinear Oscillations, Dynamical Systems & Bifurcations of
	A.A. Andronov, E.A. Vitt, S.E. Khaiken
Title	Theory of Oscillators
 Author Name 	M.W. Hirsch, S. SImale adn R.L. Devaney
Title	Dirrential Equations, Dynamical Systems & An Intro to Chaos
Sections	
 Format 	L. C.
Number	<mark>01 </mark>
Status	
Max. Enrollm	
SCORE Numb	per 20316
Meetings	
	e <mark>13:30:00</mark>
	e <u>14:50:00</u>
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TBA?	N N
Instructors	
	Clarence
Middle V	Vorth
Last F	Rowley

Course Codes	
• Code	MAE_
Number	542
Subletter	
Home Dept?	
Title	Advanced Dynamics
Topic	
Subletter	
Description	Principles and methods for formulating and analyzing mathematical models of physical systems; Newtonian, Lagrangian, and Hamiltonian formulations of particle and rigid and elastic body dynamics; canonical transformations, Hamilton-Jacobi theory; and integrable and nonintegrable systems. Additional topics are explored at the discretion of the instructor.
	30
May PDF?	N Control of the cont
May Audit?	Y
Assignments	
Website	
Final Exam Type	Other
Grading	
Sample Reading	List
	H. Goldstein
Title	Classical Mechanics
Author Name	
Title	Mathematical Methods of Classical Mechanics
Author Name	
Title	The Variational Principles of Mechanics
Sections	
 Format 	<mark>S S</mark>
Number	01
Status	0
Max. Enrollm	
SCORE Numb	per <mark>20317</mark>
Meetings	
Beg. Tim	ne 11:00:00
End Time	e 12:20:00
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Course Codes	
 Code 	AST
Number	<mark>551</mark>
Subletter	
Home Dept	? <mark> Y</mark>
• Code	MAE
Number	WAE
Subletter	020
Home Dept	? N
Title	General Plasma Physics I
Topic	Constant Admit 111/2001
Subletter	
Description	An introductory course to plasma physics, with sample applications in fusion, space and astrophysics, semiconductor etching, microwave
·	generation, plasma propulsion, high power laser propagation in plasma; characterization of the plasma state, Debye shielding, plasma and
	cyclotron frequencies, collision rates and mean-free paths, atomic processes, adiabatic invariance, orbit theory, magnetic confinement of
	single-charged particles, two-fluid description, magnetohydrodynamic waves and instabilities, heat flow, diffusion, kinetic description, and
	Landau damping. The course may be taken by undergraduates with permission of the instructor.
Max. Enrollmen	
May PDF?	Y Y
May Audit?	Y
Assignments Website	
	Other
Final Exam Typ Grading	Unier
Sample Reading	Liet
	Los use Coldston and Rutherford
Title	Introduction to Plasma Physics
	e Stix and von Goeler
Title	GPPI lecture notes
Author Nan	Hazeltine and Waelbroeck
Title	The Framework of Plasma Physics
Sections	
 Format 	С
Number	01
Status	0
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Course Codes	
• Code	GEO
Number	425
Subletter	
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• Code	MAE
Number	425
Subletter	
Home Dept?	N Company of the comp
Title	Introduction to Physical Oceanography
Topic	
Subletter	
Description	The study of the oceans as a major influence on the atmosphere and the world environment. The contrasts between the properties of the
	upper and deep oceans; the effects of stratification; the effect of rotation; the wind-driven gyres; the thermohaline circulation.
Max. Enrollment	
May PDF?	N .
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Assignments	Three to four problems every two weeks.
Website	THE COLOUR PRODUCTS OF THE WORKS.
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Final Exam Type	riidi
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• Perc. 40	
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Sample Reading	List
	Pond & Pickard
Title	Introductory Dynamical Oceanography, 2nd ed.
	Pickard & Emery
Title	Descriptive Physical Oceanography: An Introduction
Author Name	Open University Course Team
Title	Ocean Circulation (2001)
ritte	ocean circulation (2001)
 Author Name 	Open University Course Team
Title	Waves, tides, and Shallow-Water Processes
Sections	
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COL	urse Codes	NAC .
•		MAE
	Number	521
	Subletter	N. Company of the Com
Tiel	Home Dept?	
Titl		Optics and Lasers
	oletter	
		An introduction to principles of lasers. Topics include propagation theory, interaction of light and matter, Fourier optics, and a description of
Des	scription	operational characteristics of lasers, light scattering, and nonlinear optics.
Ma	x. Enrollment	
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	ignments	
	bsite	
	al Exam Type	Other
	ding	
Sar	nple Reading	ist
•	Author Name	Eckbreth, Alan C
	Title	Laser Diagnostics for Combustion Temperature & Species
Sec	tions	
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	Number	<mark>01</mark>
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Course Codes	
• Code	MAE
Number	551
Subletter	
Home Dept?	
Title	Fluid Mechanics
Topic	
Subletter	
Description	An introduction to fluid mechanics. The course explores the development of basic conservation laws in integral and differential form; one- dimensional compressible flows, shocks and expansion waves; effects of energy addition and friction; unsteady and two-dimensional flows and method of characteristics. Reviews classical incompressible flow concepts, including vorticity, circulation, and potential flows. Introduces viscous and diffusive phenomena.
Max. Enrollment	20
May PDF?	N .
May Audit?	Y
Assignments	
Website	
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Sample Reading	List
Sections	
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Course Codes	
Code	CEE
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Subletter	
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• Code	MAE
Number	325
Subletter	N.
Home Dept?	
Topic	Structural Analysis and Introduction to Finite Element Methods
Subletter	
Description	Basic concepts of matrix structural analysis. Direct stiffness method. Axial force member. Beam bending member. Formation of element
Description	stiffness matrix. Assembling of global stiffness matrix. Introduction of boundary conditions. Solution of linear algebraic equations. Special analysis procedures. The finite element method. Introduction and basic formulation. Plane stress and plane strain problems. Plate bending problems. The use and implementation of structural analysis and finite element computer codes using Mathlab is emphasized throughout the course.
Max. Enrollment	20
May PDF?	Y
May Audit?	N N
Assignments	Eight homework sets, two midterm exams, one final project.
Website	
Final Exam Type	Other

Gra	ng	
•	erc. 30	
	ype MidTerm Exam	
•	erc. <mark>30</mark>	
	ype Design Project(s)	
•	erc. 40	
	ype Problem Set(s)	
Sar	le Reading List	
•	uthor Name McGuire & Gallagher, John Wiley	
	Matrix Structural Analysis	
•	uthor Name Kwon and Bang, CRC	
	The Finite Element Method Using MatLab	
	uthor Name Zienkiewicz, Taylor and Zhu; Elsevier	
	The Finite Element Method: Its Basis and Fundamentals	

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Course Codes	
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Number	585
Subletter	B
Home Dept?	
	MAE
Number	580
Subletter	
Home Dept?	
Title	Topics in Science, Technology, and Environmental Policy
Горіс	Living in a Greenhouse: Technology & Policy
Subletter	
	These are courses intended to help students develop and apply skills in the application of scientific, technological, and environmental
Max. Enrollment	analyses to problems of policy interest. Fall courses are numbered 585, Spring courses are numbered 586.
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Course Codes	
	MAE
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Number	527
Subletter	N. Company of the Com
Home Dept?	
Title	Physics of Gases
Topic	
Subletter	
·	Physical and chemical topics of basic importance in modern fluid mechanics, plasma dynamics, and combustion science: statistical calculations of thermodynamic properties of gases; chemical and physical equilibria; adiabatic temperatures of complex reacting systems; quantum mechanical analysis of atomic and molecular structure and atomic-scale collision phenomena; transport properties; reaction kinetics, including chemical, vibrational, and ionization phenomena; and propagation, emission, and absorption of radiation.
Max. Enrollment	<u>15</u>
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Code	MAE
Number	wint. 531
Subletter	100 I
Home Dept?	J. V. The state of
tle	Combustion
opic	Combustion
ubletter	
escription	Chemical thermodynamics, theory of chemical kinetics, oxidation of hydrogen and hydrocarbons, transport phenomena, conservation
escription	equations of chemically reacthing flows, Rankin-Hugoniot relations, laminar premixed and diffusion flames, turblent flames, detonation waves, droplet and spray combustion, ignition and extinction, flame stabilization and blowoff, pollutant chemistry.
Max. Enrollment	<u>15</u>
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lay Audit?	Y
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inal Exam Type	Other
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ample Reading	List
Author Nam	e SR Turns
Title	An Introduction to Combustion; Concepts and Applications
Author Nam	e I Glassman
Title	Combustion
Author Nam	
Title	Principles of Combustion
ections	
Format	L L
Number	<mark>01 </mark>
Status	
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SCORE Num	ber <mark>20314</mark>
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Code	MAE
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Subletter	333
Home Dept?	v -
itle	Non-Equilibrium Gas Dynamics
opic	Non-Equilibrium Gas Dynamics
Subletter	
Description	Noncontinuum descritpion of transport and reactive flow. The course examins mlecular collisions Bolzmunn equation, and Chapmann-Easkog expansion for near-equilibrium flows; flows with transnational, vibrational and chemical non-equilibrium; shock structure; and plasma with chemical reactions
Max. Enrollment	<u>15 </u>
May PDF?	Y
/lay Audit?	Y
Assignments	
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inal Exam Type	Other
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ample Reading	
Author Name Title	GA Bird Molecular Gas dynamics and direct simulation
Author Name Title Tections	WG Vincenti & CH Kruger Jr Introduction to Physical Gas Dynamics
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Status	0
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Code MAE Number 553 Subletter Home Dept? Y Title Turbulent Flow Topic Subletter Description Physical and statistical descriptions of turbulence, and a critical review of phenomenological theories for turbulent flows. The course examines scales of motion; correlations and spectra; homogeneous turbulent flows; inhomogeneous shear flows; turbulent flows in pipe and channels; turbulent boundary layers; calculation methods for turbulent flows (Reynolds stress equations, LES, DNS); and current directions in turbulence research. This course is offered in alternate years. Max. Enrollment 15 May PDF? N May Audit? Y Assignments Website Final Exam Type Grading Sample Reading List		
Subletter Home Dept? Y	Course Codes	
Subletter Home Dept? Y Title Turbulent Flow Topic Subletter Description Physical and statistical descriptions of turbulence, and a critical review of phenomenological theories for turbulent flows. The course examines scales of motion; correlations and spectra; homogeneous turbulent flows; inhomogeneous shear flows; turbulent flows in pipe and channels; turbulent boundary layers; calculation methods for turbulent flows (Reynolds stress equations, LES, DNS); and current directions in turbulence research. This course is offered in alternate years. Max. Enrollment 15 May PDF? N May Audit? Y Assignments Website Sections Format L Number 01 Status 0 Max. Enrollment 115 SCORE Number 20319 Meetings Beg. Time 11:00:00 End Time 12:20:00 Place EQUAJ J201 Days Days Day T TBA? N Instructors First Alexander Middle John	• Code	MAE
Home Dept? Y Turbulent Flow	Number	553
Title Turbulent Flow Topic Subletter Poscificial Control Cont	Subletter	
Topic Subletter Description Physical and statistical descriptions of turbulence, and a critical review of phenomenological theories for turbulent flows. The course examines scales of motion; correlations and spectra; homogeneous turbulent flows; inhomogeneous shear flows; turbulent flows in pipe and channets; turbulent boundary layers; calculation methods for turbulent flows (Reynolds stress equations, LES, DNS); and current directions in turbulence research. This course is offered in alternate years. Max. Enrollment 15 May PDF? N May Audit? Y Assignments Website Final Exam Type Other Grading Sample Reading List Sections Format L Number 01 Status 0 Max. Enrollment 15 SCORE Number 20319 Meetings Beg. Time 11:00:00 End Time 12:20:00 Place EQUAJ J201 Days Day T Day T TBA? N Instructors First Alexander Middle John	Home Dept?	Y
Subletter Description Physical and statistical descriptions of turbulence, and a critical review of phenomenological theories for turbulent flows. The course examines scales of motion; correlations and spectra; homogeneous turbulent flows; inhomogeneous shear flows; turbulent flows in pipe and channels; turbulent boundary layers; calculation methods for turbulent flows (Reynolds stress equations, LES, DNS); and current directions in turbulence research. This course is offered in alternate years. Max. Enrollment Max. Enrollment Mebitide Format Number O1 Status O Max. Enrollment Status O Max. Enrollment Status O Meetings Beg. Time 11:00:00 End Time 12:20:00 Place EQUAJ J201 Days Day T Day T Bay T Ba/ N Instructors First Alexander Middle John	Title	Turbulent Flow
Physical and statistical descriptions of turbulence, and a critical review of phenomenological theories for turbulent flows. The course examines scales of motion; correlations and spectra; homogeneous turbulent flows; inhomogeneous shear flows; turbulent flows in pipe and channels; turbulent boundary layers; calculation methods for turbulent flows (Reynolds stress equations, LES, DNS); and current directions in turbulence research. This course is offered in alternate years. Max. Enrollment 15 May PDF? N May Audit? Y Assignments Website Final Exam Type Other Grading Sample Reading List Sections Format L Number 01 Status 0 Max. Enrollment 15 SCORE Number 20319 Meetings Beg. Time 11:00:00 End Time 12:20:00 Place EQUAJ J201 Days Days Day Th TBA? N Instructors First Alexander Middle John	Topic	
examines scales of motion: correlations and spectra; homogeneous turbulent flows; inhomogeneous shear flows; turbulent flows in pipe and channels; turbulent boundary layers; calculation methods for turbulent flows (Reynolds stress equations, LES, DNS); and current directions in turbulence research. This course is offered in alternate years. Max. Enrollment 15	Subletter	
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le	Structural Materials
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bletter	
scription	Stress/strain behavior of materials; dislocation theory and strengthening mechanisms; yield strength; materials selection. Fundamentals of plasticity, Tresca and Von Mieses yield criteria. Case study on forging: upper and lower bounds. Basic elements of fracture. Fracture mechanics. Mechanisms of fracture. The fracture toughness. Case studies and design. Fatigue mechanisms and life prediction methodologies.
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