6730 : Outline

DAY	DATE	PROFESSOR	L/R	SUBJECT
M	5-Feb			Registration Day
W	7-Feb	SDS	L1	Overview of Solid Matter
F1	9	TPO	L2	Bonding in Solids I
F2		SDS	R1	Background Refresher
M	12	TPO	L3	Bonding in Solids II
W	14	TPO	L4	Metal as Free Electron Gas
F1	16	TPO	L5	Elastic Waves I
F2		TPO	R2	**Problem Session**
M	19			*Vacation Day*
Tues	20	SDS	L6	Elastic Waves II
W	21	SDS	L7	Debye & Einstein Models
F1	23	SDS	L8	Periodic Structures : Geometry
F2		TPO	R3	**Problem Session**
M	26	TPO	L9	Periodic Structures:Math
W	28	TPO	L10	Periodic Structures:Math
F1	1-Mar	SDS	L11	Lattice Waves: 1D monatomic
F2		SDS	R4	**Problem Session**
M	4-Mar	SDS	L12	Lattice Waves: 1D diatomic
W	6	SDS	L13	2D Lattice Waves
F1	8		Q1	**Quiz 1**
F2			Q1	**Quiz 1**
M	11	SDS	L14	Acoustic and Optical Phonons
W	13	SDS	L15	Acoustic and Optical Phonons
F1	15	TPO	L16	Tight Binding: Atomic Basis Set
F2		SDS	R5	**Problem Session**
M	18	TPO	L17	Bloch's Theorem & Central Eqn.
W	20	TPO	L18	1D Band Structures (numerics)
F1	22	TPO	L19	Weak Potential Approximation
F2		TPO	R6	**Problem Session**
M	25			*Spring Break*
W	27			*Spring Break*
F	29			*Spring Break*
M	1-Apr	TPO	L20	Properties of Bloch Functions
W	3	TPO	L21	3D Band Structures: I
F1	5	TPO	L22	3D Band Structures: II
F2		TPO	R7	**Problem Session**
M	8	TPO	L23	Effective Mass Theorem
W	10	TPO	L24	Hydrogenic Impurity States
F1	12	TPO	L25	Semiclassical Eqns of Motion
F2		SDS	R8	**Problem Session**
M	15			*Holiday*
W	17	SDS	L26	Electrons and Holes: I
F1	19		Q2	**QUIZ 2**

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F2			Q2	**QUIZ 2**
M	22	SDS	L27	Electrons and Holes: II
W	24	SDS	L28	Boltzmann Transport :I
F1	26	SDS	L29	Electrochemical Potential
F2		TPO	R9	**Problem Session**
M	29	SDS	L30	Band Bending in Semiconductors
W	1-May	SDS	L31	Non-Equilibrium: A Case Study
F1	3	SDS	L32	Boltzmann Transport: II
F2		TPO	R10	**Problem Session**
M	6	TPO	L33	Scattering Rates
W	8	TPO	L34	Scattering Rates
F1	10	TPO	L35	Velocity Saturation
F2		SDS	R11	**Problem Session**
M	13	TPO	L36	Velocity Saturation
W	15	SDS	L37	Summary

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READ	PROBLEM SET OUT	PROBLEM SET DUE	TRAVEL
SDS-1	1		
A&M 19 and 20			
A&M 19 and 20			SDS
PSSA 5.1-5.5, A&M 2	2	1	SDS
SDS 3.1-3.2			SDS
			SDS
SDS 3.2-3.3			
SDS 3.4-3.5	3	2	
A&M 4 and 5			
PSSA 6			
Periodic Structures:Math	4	3	
A&M 22 and 23; (PSSA 8.2.1)			TPO
			TPO
A&M 22 and 23; (PSSA 8.2.2)			
A&M 22 and 23	5	4	
			SDS
			SDS
SDS			
SDS	6	5	
PSSA 7.2; A&M 10			
PSSA 7.3-7.4; A&M 8			SDS
PSSA 7.4	7	6	SDS
PSSA 7.5; A&M 9			SDS
			SDS
PSSA 7.4.1-7.4.4			SDS
A&M 9	8	7	SDS
A&M 10			SDS
			SDS
PSSA 9.2			
PSSA 9.3	9	8	
PSSA 9.4			
PSSA 10.3-10.4	10	9	

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PSSA 10.5			
SDS 11	11	10	
SDS 4			
SDS 8			
SDS 9	12	11	
SDS 11			
			TPO?
		12	