

## OPTI 570 Fall 2022 Schedule (version 1)

This is the intended schedule, but is subject to changes if necessary.

Day	2022 Date		TOPIC	CT reading prior to class	PS due (on campus)	PS due (distance)
T	23-Aug		overview of the course, key concepts in QM			
W	24-Aug		<b>DISCUSSION SECTION</b>			
Th	25-Aug		function space, state space, Dirac notation	II A, B	1	
T	30-Aug		representations in state space, QM formalism	II C,D, comps B,C-II		1
W	31-Aug		<b>DISCUSSION SECTION - PS2</b>			
Th	1-Sep		position and momentum representation	II E, F, comp E-II	2	
T	6-Sep		formalism recap, postulates of QM	III A,B,C		2
W	7-Sep		<b>DISCUSSION SECTION - PS3</b>			
Th	8-Sep		consequences of postulates; wavepackets 1	III D,E, comps F,G-III	3	
T	13-Sep		wavepacket example - part 2	V A, B (read to get ahead)		3
W	14-Sep		<b>DISCUSSION SECTION - PS4, Practice Problems</b>			
Th	15-Sep		quantum harmonic oscillator - set up	V C, D	4	
T	20-Sep		quantum HO - 2 - energy eigenstates			4
W	21-Sep	<b>EXAM 1: 4-6pm</b>	<b>Covers all material through Sep 13 lecture &amp; PS 4</b>			
Th	22-Sep		quantum HO - 3 - energy eigenstates	comp E-V		
T	27-Sep		quasi-classical states of HO, displacement operator	comp G-V		
W	28-Sep		<b>DISCUSSION SECTION - PS5</b>			
Th	29-Sep		QC states 2		5	
T	4-Oct		QC states 3. Angular momentum in QM	VI A-D		5
W	5-Oct		<b>DISCUSSION SECTION - PS6</b>			
Th	6-Oct		Angular momentum	IV A,B comp A-IV	6	
T	11-Oct		spin 1/2, stern gerlach, Bloch vector	IV-C		6
W	12-Oct		<b>DISCUSSION SECTION - PS7, Practice Problems</b>			
Th	13-Oct		2-level systems	comp E-III, comp E-IV	7	
T	18-Oct		Catch up or get ahead, as needed			7
W	19-Oct	<b>EXAM 2: 4-6pm</b>	<b>Covers all material through Oct 11 lecture &amp; PS 7</b>			
Th	20-Oct		2-level systems, Rabi oscillations	comp B-VI, comp A-IX		
T	25-Oct		spin 1, spinless hydrogen			
W	26-Oct		<b>DISCUSSION SECTION - PS8</b>			
Th	27-Oct		spinless hydrogen. Addition of AM	VII	8	
T	1-Nov		addition of ang mom, clebsch-gordan coefficients	X-A,B,C		9
W	2-Nov		<b>DISCUSSION SECTION - PS9</b>			
Th	3-Nov		atomic structure	not in CT	9	
T	8-Nov		stationary PT, non-degenerate PT	XI-A,B		9
W	9-Nov		<b>DISCUSSION SECTION - PS10, Practice Problems</b>			
Th	10-Nov		non-degenerate and degenerate SPT	XI-C	10	
T	15-Nov		SPT - examples. Fine structure of hydrogen	comp A-XI		10
W	16-Nov	<b>EXAM 3: 4-6pm</b>	<b>Covers all material through Nov 8 lecture &amp; PS 10</b>			
Th	17-Nov		fine structure of H	XII A,B		
M	21-Nov	Monday help session	<b>DISCUSSION SECTION - PS11</b>			
T	22-Nov		time dependent perturbation theory	XII C,D,E	11	
W	23-Nov		<b>NO DISCUSSION SECTION TODAY</b>			
Th	24-Nov		<b>THANKSGIVING HOLIDAY - NO CLASS</b>			
T	29-Nov		Time-dependent perturbation theory	XIII A,B,C		11
W	30-Nov		<b>DISCUSSION SECTION - PS12, Practice Problems</b>			
Th	1-Dec		TDPT examples		12	
T	6-Dec	last day of OPTI 570	open discussion/review			12
W	7-Dec		<b>HELP SESSION</b>			
TBD	TBD	<b>PROJECT/EXAM</b>	<b>TBD</b>			