

Subject : Semiconductor Physics & Devices

Venue : Lecture - Online / LT4 at HCI
Tutorials - B301 and B302 at HCI

Schedule : Lecture - Thursdays 4.00 pm - 6.30 pm
Tutorial Group 1: Mondays 3:00 pm - 5:00 pm
Tutorial Group 2: Mondays 5:00 pm - 7:00 pm
Tutorial Group 4: Tuesdays 5:00 pm - 7:00 pm

H3 WK No.	Duration	Day/Date	Timings/Groupings	Lesson Topic	Nature of Lesson (Lecture/Tutorial)	Remarks
Week 1 (10 Jan - 14 Jan 2022)	2.5 hours	Tue / 11 Jan	4.00 pm – 6.30 pm ALL	Introduction to Semiconductors	LECTURE 01	
	2.5 hours	Thu / 13 Jan	4.00 pm – 6.30 pm ALL	Semiconductor Crystal Structure Energy Bands of Semiconductor	LECTURE 02	
Week 2 (17 Jan - 21 Jan 2022)	2 hours	Mon / 17 Jan	3.00 pm - 5.00 pm Tutorial group T1		Tutorial 01	
			5.00 pm - 7.00 pm Tutorial group T2			
	2 hours	Tue / 18 Jan	5.00 pm - 7.00 pm Tutorial group T4		Tutorial 01	
	2.5 hours	Thu / 20 Jan	4.00 pm – 6.30 pm ALL	Doping of Semiconductors	LECTURE 03	
Week 3 (24 Jan - 28 Jan 2022)	3.5 hours	Mon / 24 Jan	3.30 pm -7.00 pm Lab group L1	Basic Hands-on with Laboratory Equipment	Laboratory 01	NTU Venue: Electronics II Room: S2-B4a-04
	3.5 hours	Tue / 25 Jan	3.30 pm -7.00 pm Lab group L2	Basic Hands-on with Laboratory Equipment	Laboratory 01	NTU Venue: Electronics II Room: S2-B4a-04
	2.5 hours	Thu / 27 Jan	4.00 pm – 6.30 pm ALL	Semiconductor in Equilibrium	LECTURE 04	
	3.5 hours	Fri / 28 Jan	3.30 pm -7.00 pm Lab group L4	Basic Hands-on with Laboratory Equipment	Laboratory 01	NTU Venue: Electronics II Room: S2-B4a-04

H3 WK No.	Duration	Day/ Date	Timings/ Groupings	Lesson Topic	Nature of Lesson (Lecture/Tutorial)	Remarks
Week 4 (31 Jan - 4 Feb 2022)	One Week Break (31 Jan - 4 Feb 2022)					
Week 5 (7 Feb - 11 Feb 2022)	2 hours	Mon / 7 Feb	3.00 pm - 5.00 pm Tutorial group T1		Tutorial 02	
			5.00 pm - 7.00 pm Tutorial group T2			
	2 hours	Tue / 8 Feb	5.00 pm - 7.00 pm Tutorial group T4		Tutorial 02	
	2.5 hours	Thu / 10 Feb	4.00 pm – 6.30 pm ALL	Semiconductor in Equilibrium Carrier Transport	LECTURE 05	
Week 6 (14 Feb - 18 Feb 2022)	2 hours	Mon / 14 Feb	3.00 pm - 5.00 pm Tutorial group T1		Tutorial 03	
			5.00 pm - 7.00 pm Tutorial group T2			
	2 hours	Tue / 15 Feb	5.00 pm - 7.00 pm Tutorial group T4		Tutorial 03	
	2.5 hours	Thu / 17 Feb	4.00 pm – 6.30 pm ALL	Carrier Transport Characterizations Non-equilibrium Excess Carrier	LECTURE 06	

H3 WK No.	Duration	Day/ Date	Timings/ Groupings	Lesson Topic	Nature of Lesson (Lecture/Tutorial)	Remarks
Week 7 (21 Feb - 25 Feb 2022)	2 hours	Mon / 21 Feb	3.00 pm - 5.00 pm Tutorial group T1		Tutorial 04	
			5.00 pm - 7.00 pm Tutorial group T2			
	2 hours	Tue / 22 Feb	5.00 pm - 7.00 pm Tutorial group T4		Tutorial 04	
	3.5 hours	Wed / 23 Feb	3.30 pm - 7.00 pm Lab group L1	L2003A – Semiconductor Parameter Measurements	Laboratory 02	NTU Venue: Electronics II Room: S2-B4a-04
	2.5 hours	Thu / 24 Feb	4.00 pm – 6.30 pm ALL	Non-equilibrium Excess Carrier	LECTURE 07	
3.5 hours	Fri / 25 Feb	3.30 pm - 7.00 pm Lab group L2	L2003A – Semiconductor Parameter Measurements	Laboratory 02	NTU Venue: Electronics II Room: S2-B4a-04	
Week 8 (28 Feb - 4 Mar 2022)	2 hours	Mon / 28 Feb	3.00 pm - 5.00 pm Tutorial group T1		Tutorial 05	
			5.00 pm - 7.00 pm Tutorial group T2			
	2 hours	Tue / 1 Mar	5.00 pm - 7.00 pm Tutorial group T4		Tutorial 05	
	2.5 hours	Thu / 3 Mar	4.00 pm – 6.30 pm ALL	PN Junction	LECTURE 08	
3.5 hours	Fri / 4 Mar	3.30 pm - 7.00 pm Lab group L4	L2003A – Semiconductor Parameter Measurements	Laboratory 02	NTU Venue: Electronics II Room: S2-B4a-04	

H3 WK No.	Duration	Day/Date	Timings/Groupings	Lesson Topic	Nature of Lesson (Lecture/Tutorial)	Remarks
Week 09 (7 Mar - 11 Mar 2022)	2 hours	Mon / 7 Mar	3.00 pm - 5.00 pm Tutorial group T1		Tutorial 06	
			5.00 pm - 7.00 pm Tutorial group T2			
	2 hours	Tue / 8 Mar	5.00 pm - 7.00 pm Tutorial group T4		Tutorial 06	
	2.5 hours	Thu / 10 Mar	4.00 pm – 6.30 pm ALL	PN Junction	LECTURE 09	
Week 10 (14 Mar - 18 Mar 2022)	One Week Break (14 Mar - 18 Mar 2021)					
Week 11 (21 Mar - 25 Mar 2022)	1 hours	Tue / 22 Mar	3.00 pm - 4.00 pm Tutorial group T1		Tutorial 07	
			4.00 pm - 5.00 pm Tutorial group T2, T4			
	1 hour	Tue / 22 Mar	5.00 pm- 7.00 pm ALL		TEST 01 (1 hour)	HCI Venue: AVT and LT1
	2.5 hours	Thu / 24 Mar	4.00 pm – 6.30 pm ALL	PN Junction	LECTURE 10	
Week 12 (28 Mar - 1 Apr 2022)	2 hours	Mon / 28 Mar	3.00 pm - 5.00 pm Tutorial group T1		Tutorial 08	
			5.00 pm - 7.00 pm Tutorial group T2			
	2 hours	Tue / 29 Mar	5.00 pm - 7.00 pm Tutorial group T4		Tutorial 08	
	3.5 hours	Wed / 30 Mar	3.30 pm –7.00 pm Lab group L1	L2003B - PN Junction Devices	Laboratory 03	NTU Venue: Electronics II Room: S2-B4a-04
	2.5 hours	Thu / 31 Mar	4.00 pm – 6.30 pm ALL	Metal-Semiconductor Contacts	LECTURE 11	

H3 WK No.	Duration	Day/Date	Timings/Groupings	Lesson Topic	Nature of Lesson (Lecture/Tutorial)	Remarks
Week 13 (4 Apr - 8 Apr 2022)	2 hours	Mon / 4 Apr	3.00 pm - 5.00 pm Tutorial group T1		Tutorial 09	
			5.00 pm - 7.00 pm Tutorial group T2			
	2 hours	Tue / 5 Apr	5.00 pm - 7.00 pm Tutorial group T4		Tutorial 09	
	3.5 hours	Wed / 6 Apr	3.30 pm – 7.00 pm Lab group L2	L2003B - PN Junction Devices	Laboratory 03	
2.5 hours	Thu / 7 Apr	4.00 pm – 6.30 pm ALL	Metal-Semiconductor Contacts	LECTURE 12		
Week 14 (11 Apr - 15 Apr 2022)	2 hours	Mon / 11 Apr	3.00 pm - 5.00 pm Tutorial group T1		Tutorial 10	
			5.00 pm - 7.00 pm Tutorial group T2			
	2 hours	Tue / 12 Apr	5.00 pm - 7.00 pm Tutorial group T4		Tutorial 10	
	3.5 hours	Wed / 13 Apr	3.30 pm – 7.00 pm Lab group L4	L2003B - PN Junction Devices	Laboratory 03	
2.5 hours	Thu / 14 Apr	4.00 pm – 6.30 pm ALL	Light-Emitting Diodes	LECTURE 13		

H3 WK No.	Duration	Day/Date	Timings/Groupings	Lesson Topic	Nature of Lesson (Lecture/Tutorial)	Remarks
Week 15 (18 Apr - 22 Apr 2022)	2 hours	Mon / 18 Apr	3.00 pm - 5.00 pm Tutorial group T1		Tutorial 11	
			5.00 pm - 7.00 pm Tutorial group T2			
	2 hours	Tue / 19 Apr	5.00 pm - 7.00 pm Tutorial group T4		Tutorial 11	
	2.5 hours	Thu / 21 Apr	4.00 pm – 6.30 pm ALL	Junction Photodetectors	LECTURE 14	
Week 16 (25 Apr - 29 Apr 2022)	1 hour	Tue / 26 Apr	3.00 pm - 4.00 pm Tutorial group T1		Tutorial 12	
			4.00 pm - 5.00 pm Tutorial group T2, T4			
	1 hour	Tue / 26 Apr	5.00 pm – 7.00 pm ALL		TEST 02 (1 hour)	HCI Venue: AVT and LT1
Week 17 (2 May - 6 May 2022)	Study Week (2 May - 6 May 2022)					
Week 18 (9 May - 13 May 2022)	Study Week (9 May - 13 May 2022)					
Week 19 (16 May - 20 May 2022)	2.5 hours	Tue / 17 May	2.00 pm - 4.30 pm ALL	NTU-H3 Written Examination	EXAM (2.5 hours)	NTU Venue: Exhibition Hall, Level 3 Nanyang Auditorium

Three Laboratory Experiments:

- Laboratory 01 - BASIC HANDS-ON WITH LABORATORY EQUIPMENT
- Laboratory 02 - SEMICONDUCTOR PARAMETER MEASUREMENTS
- Laboratory 03 - PN JUNCTION DEVICES

Group	Day/Date	Time	Experiment No.
Grp 1	Mon, 24 Jan 2022	3.30 pm – 7 pm	Laboratory 01
	Wed, 23 Feb 2022	3.30 pm – 7 pm	Laboratory 02
	Wed, 30 Mar 2022	3.30 pm – 7 pm	Laboratory 03
Grp 2	Tue, 25 Jan 2022	3.30 pm – 7 pm	Laboratory 01
	Fri, 25 Feb 2022	3.30 pm – 7 pm	Laboratory 02
	Wed, 6 Apr 2022	3.30 pm – 7 pm	Laboratory 03
Grp 4	Fri, 28 Jan 2022	3.30 pm – 7 pm	Laboratory 01
	Fri, 4 Mar 2022	3.30 pm – 7 pm	Laboratory 02
	Wed, 13 Apr 2022	3.30 pm – 7 pm	Laboratory 03

Comments:

All classes are in HCI, except for the three laboratory experiments which will be conducted in NTU.

Tests will be conducted in HCI, while the final examination will be conducted in NTU.

There will only be one Lecture Group, THREE Tutorial Groups (T1, T2 and T4) and THREE Laboratory Groups (L1, L2 and L4)

Venue:

HCI	
Lecture	- LT4 at HCI
Tutorial	- B301 and B302 at HCI
Test	- AVT and LT1 at HCI
Exam	- Exhibition Hall, Level 3, Nanyang Auditorium, NTU

NTU	
Laboratory 01	- ELECTRONICS II (Room: S2-B4a-04)
Laboratory 02	- ELECTRONICS II (Room: S2-B4a-04)
Laboratory 03	- ELECTRONICS II (Room: S2-B4a-04)

2022 School term break and Public Holidays:

Commencement of lessons for NTU H3 taught modules		10 Jan 2022
Term I	JC2 1-week break	Sat, 12 Mar 2022 – Sun, 20 Mar 2022
	New Year's Day	Sat, 1 Jan 2022
	Chinese New Year	Tue, 1 Feb 2022 – Wed, 2 Feb 2022
Term II	JC2 School vacation	Sat, 28 May 2022 – Sun, 26 Jun 2022
	Good Friday	Fri 15 Apr 2022
	Labour Day	Sun 1 May 2022*
	Hari Raya Puasa	Mon 2 May 2022
	Vesak Day	Sun 15 May 2022**

* Tue, 3 May 2022 is a public holiday

** Mon, 16 May 2022 is a public holiday