

Electrical Engineering 2016/17

Semester	Course Number	Course	Name of lecture	Lecture	Exercise	Lab	Hours per semester	Semster Credits	Yearly Credits
1,3	83102	Physics 1	Dr. Stas Borov	4	2	-	6	6	3
1	83110	Linear algebra	Dr. Meital Eliyahu	4	2	-	6	6	3
1	83112	Calculus 1	Mr. Erez Shainer	4	3	-	7	7	3.5
1	83116	Discrete Mathematics1	Dr. Simcha Haber	2	1	-	3	3	1.5
1	83120	Introduction to computing	Dr. Hillel Kogler	2	2	-	4	4	2
1	83002	Window to engineering	Prof. Orit Shefi	2	-	-	2	0	0
		Total		18	10	0	28	26	13
2	83103	Physics 2	Prof. Aviad Fridman	4	2	-	6	6	3
2	83105	Physics laboratory	Dr. Noa Kurzweil	-	-	2	2	1	0.5
2	83114	Calculus 2	Dr. Ronny Bitan	4	2	-	6	6	3
2	83115	Ordinary differential equations	Dr. Yonatan Beck	2	1	-	3	3	1.5
2	83140	Digital logic systems	Dr. Ofir Weber	3	1	-	4	4	2
2	83002	Window to engineering	Prof. Orit Shefi	2	-	-	2	0	0
		Total		15	6	2	23	20	10
3	83206	Linear systems	Prof. Yosef Keller	3	1	-	4	4	2
3	83210	Harmonic analysis	Dr. Nir Lev	2	1	-	3	3	1.5
3	83211	Complex functions	Mr. Eyal Kaplan	2	1	-	3	3	1.5
3	83215	Partial differential equations	Prof. Yakov Krasnov	2	1	-	3	3	1.5
3	83216	Introduction to probability and statistics	Prof. Reuven Cohen	3	1	-	4	4	2
3	83237	Intoroduction to electrical engineering	Prof. Aryeh Weiss	3	1	-	4	4	2
3	83238	Introduction to electrical engineering laboratory	Prof. Aryeh Weiss	-	-	3	3	1.5	0.75
3	83253	Logic Design and Computer Introduction	Prof. Shmuel Wimer	2	1	1	4	3	1.5
		Total		17	7	4	28	25.5	12.75
4	83204	Applied quantum mechanics	Dr. Michael Stern	3	1	-	4	4	2
4	83207	Electromagnetic fields	Dr. Dror Fixler	3	1	-	4	4	2
4	83214	Tools for numerical analysis	Mr. Idan Altar	2	2	-	4	4	2
4	83243	Basics of semiconductor devices laboratory	Dr. Doron Naveh	-	-	2	2	1	0.5
4	83244	Fundamentals of semiconductor devices	Dr. Doron Naveh	3	1	-	4	4	2
4	83245	Signals and systems	Dr. Anelia Somekh-Baruch	3	1	-	4	4	2
4	83246	Introduction to Control Theory	Dr. Benjamin Zaidel	3	1	-	4	4	2

		Total		17	7	2	26	25	12.5
5	83223	Object Oriented Programming	Dr. Yehuda Elmaliyah	2	2	-	4	4	2
5	83302	Random signals and noise	Prof. Shraga Bross	3	2	-	5	5	2.5
5	83303	Linear electronics	Prof. Jozeph Shor	3	2	-	5	5	2.5
5	83308	Digital electronic circuits	Prof. Alexander Fish	3	2	-	5	5	2.5
6	83315	Digital circuits laboratory	Prof. Alexander Fish	-	-	3	3	1.5	0.75
5	83340	Introduction to modern optics and electro-optics	Prof. Zeev Zalevski	3	1	-	4	4	2
		Total		14	9	3	26	24.5	12.25
6	83325	Analog circuits laboratory	Prof. Jozeph Shor	-	-	3	3	1.5	0.75
		Total		0	0	6	6	3	1.5
7	83305	Micro-computer laboratory	Dr. Avrahamov Benjamin	1	-	3	4	2.5	1.25
7,8	83401	Project	-	7	-	-	7	7	3.5
		Total		8	0	3	11	9.5	4.75
		Total - Required courses		89	39	20	148	133.5	66.75
		Communications track							
		Mandatory Courses							
5	83455	Computer networks and internet 1	Dr. Dror Rawitz	3	2	-	5	5	2.5
6	83310	Digital communications 1	Prof. Ephraim Zehavi	3	2	-	5	5	2.5
6	83320	Digital signal processing 1	Dr. Yair Noam	3	1	-	4	4	2
7	83618	Digital communications 2	Prof. Ephraim Zehavi	2	1	-	3	3	1.5
8	83415	Advanced communications laboratory	Dr. Benjamin Zaidel	-	-	3	3	1.5	0.75
		Total		11	6	3	20	18.5	9.25
		Electives courses							
6	83321	Statistical signal processing algorithms	Prof. Sharon Gannot	3	1	-	4	4	2
6	83410	Analog Communication	Prof. Shraga Bross	3	1	-	4	4	2
7	83619	Radio communications techniques	Dr. Abraham Saad	2	1	-	3	3	1.5
7	83620	Information Theory	Dr. Anelia Somekh-Baruch	2	1	-	3	3	1.5
7	83623	Signal Processing Networks	Prof. Amir Leshem	2	1	-	3	3	1.5
8	83626	Digital encoding and decoding techniques	Prof. Shraga Bross	2	-	-	2	2	1
		Signal processing track							
		Mandatory Courses							

6	83320	Digital signal processing 1	Dr. Yair Noam	3	1	-	4	4	2
6	83321	Statistical signal processing 1	Prof. Sharon Gannot	3	1	-	4	4	2
7	83425	Advanced Signal Processing Laboratory	Prof. Sharon Gannot	-	-	3	3	1.5	0.75
7	83624	Discrete-Time Signal Processing 2	Prof. Sharon Gannot	3	1	-	4	4	2
8	83420	Statistical signal processing 2	Prof. Amir Leshem	3	1	-	4	4	2
		Total		12	4	3	19	17.5	8.75
		Electives courses							
6,8	83119	1 Data Structures & Algorithms	Dr. Hillel Kogler	3	1	-	4	4	2
6	83310	Digital communications 1	Prof. Ephraim Zehavi	3	2	-	5	5	2.5
7	83622	Introduction to machine learning	Prof. Jacob Goldberger	2	1	-	3	3	1.5
7	83623	Signal Processing for Networks	Prof. Amir Leshem	2	1	-	3	3	1.5
7	83629	Digital Image Processing	Prof. Jacob Goldberger	2	1	-	3	3	1.5
		Nano-electronics track							
		Mandatory Courses							
6	83311	Micro-electronics manufacturing processes	Dr. Yoav Weizman	3	1	-	4	4	2
6	83313	Digital integrated circuits	Dr. Adam Teman	3	1	-	4	4	2
6	83314	Nano-electronic devices	Dr. Doron Naveh	3	1	-	4	4	2
7	83435	Advanced nan-electronics and VLSI laboratory	Dr. Adam Teman	-	-	3	3	1.5	0.75
7	83612	Digital VLSI circuits and systems	Prof. Shmuel Wimer	2	1	-	3	3	1.5
		Total		11	4	3	18	16.5	8.25
		Electives courses							
7	83609	Technological advances in 2D materials	Dr. Doron Naveh	3	-	-	3	3	1.5
7	83621	Analog Circuits in Digital Processes	Prof. Jozeph Shor	2	1	-	3	3	1.5
8	83452	Design methods for secure hardware	Dr. Yoav Weizman	2	1	-	3	3	1.5
8	83611	Analog integrated circuits	Prof. Jozeph Shor	2	1	-	3	3	1.5
8	83625	Attacks on hardware	Dr. Yoav Weizman	2	-	2	4	3	1.5
		Electro-optics track							
		Mandatory Course							
5	83316	Physics of Semiconductor	Dr. Moti Fridman	2	1	-	3	3	1.5
6	83440	Introduction to Lasers	Dr. Amos Danieli	3	1	-	4	4	2
7	83306	Transmission lines and microwave systems	Dr. Meir Danino	3	1	-	4	4	2
7	83445	Advanced electro-optic laboratory	Prof. Zeev Zalevski	-	-	3	3	1.5	0.75
7	83466	Optical communications	Prof. Avinoam Zadok	3	1	-	4	4	2
		Total		11	4	3	18	16.5	8.25

		Electives courses							
6	83307	Electronic devices	Dr. Moti Fridman	3	1	-	4	4	2
7	83645	Introduction to MEMS systems	Dr. Meir Danino	2	1	-	3	3	1.5
7	83649	Opto-electronic devices and systems	Dr. Moti Fridman	3	1	-	4	4	2
8	83646	Semiconductor-based optical detectors	Dr. Meir Danino	2	1	-	3	3	1.5
8	83647	Super-resolution imaging systems	Prof. Zeev Zalevski	3	1	-	4	4	2
8	83648	Advanced topics in optical communications	Prof. Avinoam Zadok	3	1	-	4	4	2
		Bio-engineering track							
		Mandatory Courses							
5	83201	Introduction to biology and cell biology	Prof. Aryeh Weiss	3	1	-	4	4	2
6	83413	Big Data Analysis	Dr. Gur Yaari	3	1	-	4	4	2
6	83661	Quantitative physiology	Prof. Orit Shefi	3	1	-	4	4	2
8	83660	Bio-sensors+Bio-chips	Prof. Rachela Popovtzer	3	1	-	4	4	2
8	83411	Advanced bio-engineering laboratory	Prof. Aryeh Weiss	-	-	3	3	1.5	0.75
		Total		12	4	3	19	17.5	8.75
		Electives courses							
8	83412	Genetics and molecular biology	Dr. Tomer Kalisky	2	1	-	3	3	1.5
7	83665	Methods for computational and systems biology	Dr. Tomer Kalisky	2	1	-	3	3	1.5
7	83666	Biological Control systems	Dr. Gur Yaari	2	1	-	3	3	1.5
8	83667	Biomedical Optics-Principles and Imaging	Dr. Amos Danieli	2	1	-	3	3	1.5
7	83668	Medical imaging	Dr. Amos Danieli	2	1	-	3	3	1.5
8	83671	Nano-Medicine	Prof. Rachela Popovtzer	2	1	-	3	3	1.5
							188		89.5

- The Faculty reserves the possibility to make changes in the study program and update accordingly.
- The student has to specialize in two of the five tracks (communications, signal processing, nano-electronics, electro-optics and bio-engineering).
- Each student must learn **Total 5 Electives** - two electives each of the two tracks he chose to specialize in them. That is, 4 electives courses that choose to specialize. Course 5 choose from courses of all the tracks in electrical engineering, provided the student meets the pre.
- A student who studied **communication+signal processing** needs additional elective course in one of the tracks to complete 6 courses in (since "Digital Signal Processing 1" (83-320) is a required course overlaps two tracks).