

Pilot test description/feedback on 3 courses and lab recordings video repository, by Tel Aviv University

The courses are:

- 1. Introduction to surface sciences**
- 2. Micro-Nano Technologies**
- 3. Atomistic Simulation of Materials**

The lab video recordings repository was on fabrication of Microelectromechanical System (MEMS) Devices

Introduction to surface sciences

The course was taught and recorded for 2 times. During the second time an extra effort was put on the improvement of the face2face teaching environment and the video recordings quality.

35 students from Tel Aviv University attended to the Face2Face instance of the course, in addition to students from: CIME(2), Polito(7), Weizmann (16).

The pilot test reports from students taking the course remotely will be submitted by their own institute. Some of students from TAU preferred to learn from the course recordings on their own pace, though the Face2face class was available for them.

Students gaining credit by attending courses on other than their own institute, is quite new practice in Israel and from this perspective EduNano consortium is implementing an innovative approach.

The assessment process of remote students was done by homework's and final assignment via Skype.

Remote student credits were provided by their home institute. The accreditation approval process was led by consortium contact point at student's institute of origin.

Students evaluated very highly the content of the course and some of the concepts visualized by the lecturer. The live demonstrations during the lectures made the classes more interesting.

The Open University of Israel and Tel Aviv University successfully negotiated for mutual use of Introduction to Surface Sciences course. According this memorandum of understanding: the Surface Sciences course (which its instance uploaded on EduNano consortium learning management system, the Open University will send list of students to be registered to the

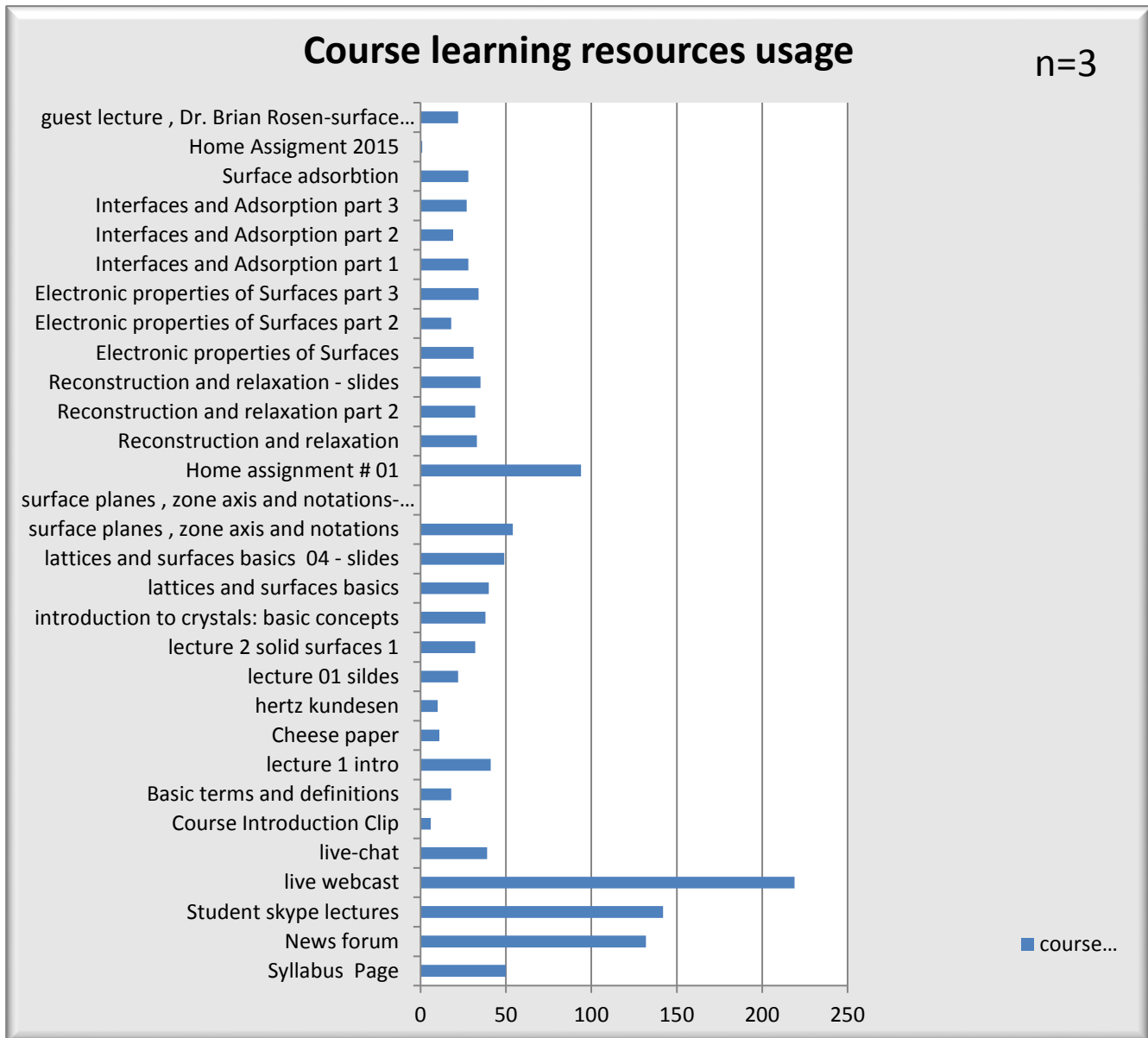
EduNano LMS and they will use the online course materials in the framework a same course at their university. All teaching learning workload, including homework/assignments inspection, exams and course content update will be done by the professor in charge of the course at the Open University

The students filled course evaluation report on the university platform

שם המורה :		פרופ' אשר רגסור														
שם הקורס :		מבוא לפני סמס - שינוי														
שם החוג :		המחלקה למדעי הבריאות של תל אביב														
שם הפקולטה :		הפקולטה למדעים על-ישים אוניברסיטת תל אביב														
מספר הקורס :		0581.5121.01														
מספר תלמידים :		35														
אחוז משיבים :		51%														
מספר תשובות :		18														
תאריך קבלת התשובות :		05/05/2017														
1	הערכת כללית של המורה (#)	7.00	6.53	0.62	5.71	0.59	10	0	0	1	0	0	0	0	0	1.00
2	השימוש בשיטות הוראה	7.00	6.71	0.41	6.83	0.88	11	0	0	0	0	0	0	0	0	0.58
3	העניין והמחויבות	8.00	6.35	0.70	6.31	0.85	7	0	0	0	0	0	0	0	0	0.68
4	היחסינות והתחייבות	8.00	6.12	0.93	5.48	0.98	8	0	0	0	0	0	0	0	0	0.01
5	יחס המורה לתלמידים ביה חינוכי	7.00	6.68	0.33	6.10	1.01	11	0	0	0	0	0	0	0	0	0.03
6	רמת הידעון בין המורה בקורס למהלך (אסור קיים שינוי מהלך)	7.00	7.00	0.00	6.10	1.00	2	0	0	0	0	0	0	0	0	0.00
7	שאר הקורס חוץ מלמדתי הקורס	8.00	5.81	1.11	4.98	1.52	9	0	0	0	0	0	0	0	0	0.51

Higher resolution image attached to this document by the name "Surface pilot evaluation"

Resource usage chart from project LMS



Some comments citations made by **not TAU** students taking this course completely online

Did you encounter difficulties (technical or other) during the course - if so what, and were they adequately resolved?

“Yes. The online course wasn't always available. I entered after it was fixed. “

“problems logging . addressed quickly and well by staff”

“Many couldn't watch lectures from home (because it was a weekend or because we didn't log-in from the institute).”

“some problems with uploading the videos which were solved very fast”

Please write a few words about your impression of this mode of learning relative to frontal (face-to-face) learning: advantages and disadvantages.

“Advantages: Numerous choices for schools; Disadvantage: Not all courses required to complete the degree may be offered online”

“I can learn from home”

“As a PhD student it has many advantages. The largest one is that I can arrange my time properly. “

more accessible, can pause -positive. asking questions is ca bit clumsy

It was very similar to sitting in a lecture, only that I could stop and replay a certain section I didn't understand.

“This was I can access the lecture at my convenience and concentrate better. “

Micro-Nano course

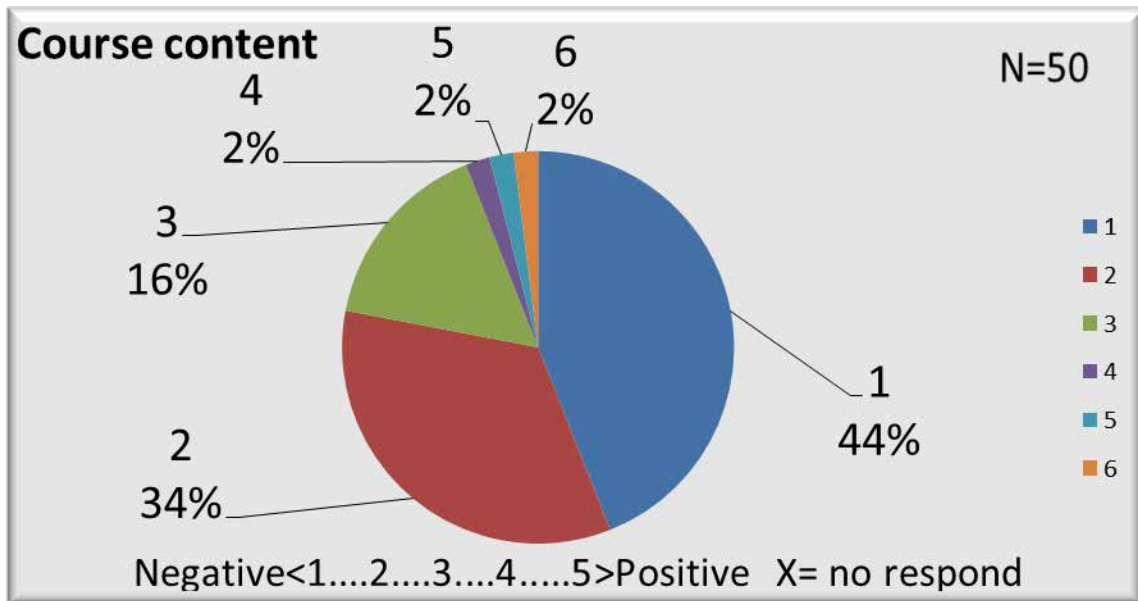
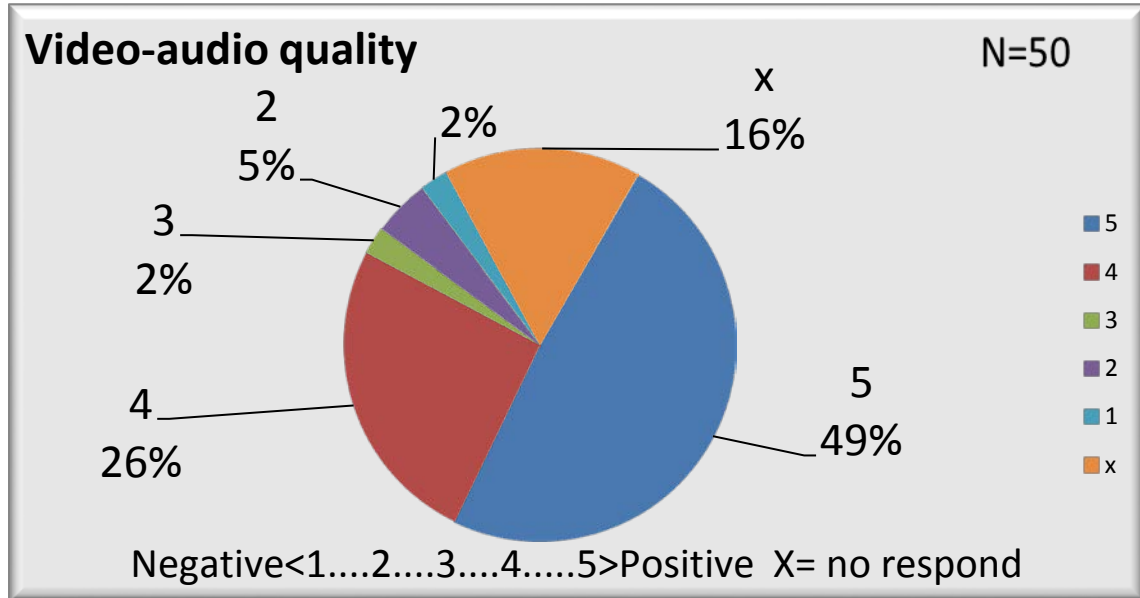
The course was taught in the first semester of 2015-2017 academic year and over 90 students from TAU attested the course Face2Face and remotely. In addition to TAU, students from Polito and Mechon Lev Jerusalem remotely attended the course.

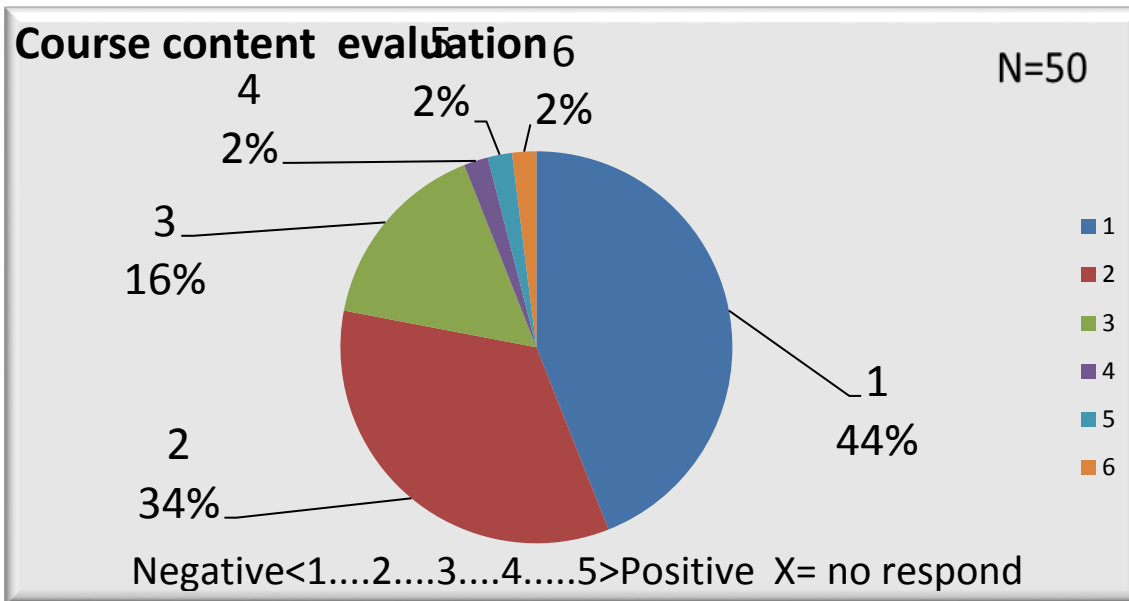
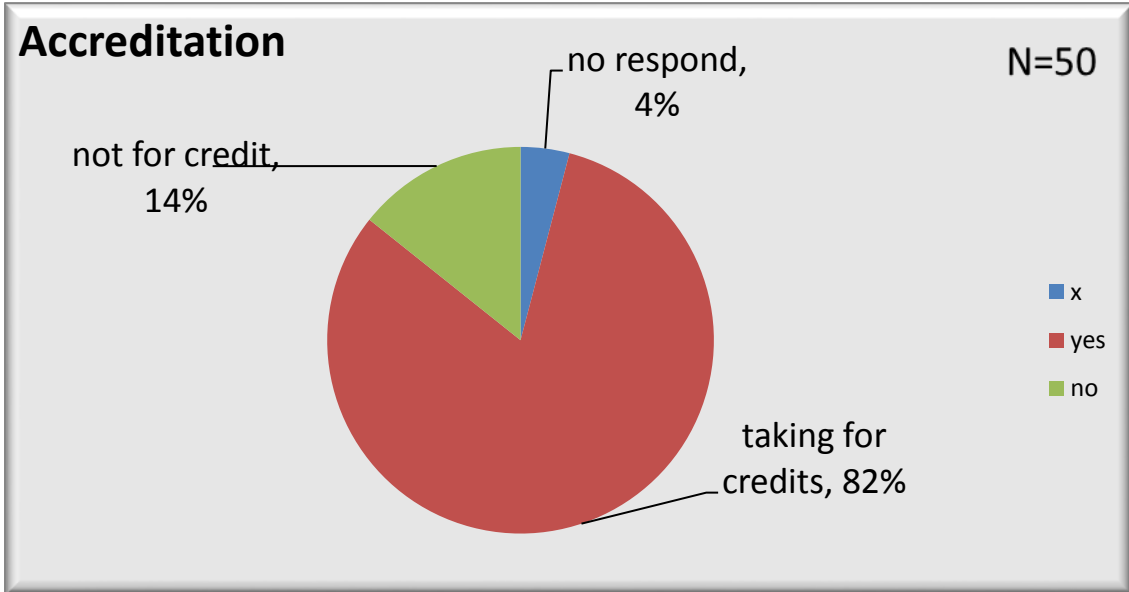
The course was live webcasted during the semester on every Tuesday from 16:00-19:00. Though the course was taught frontally (during which it was video recorded for production of the online content to be placed on EduNano LMS) many of the students preferred to follow the lectures either via live webcasts or using the recordings on EduNano LMS (VOD). The recordings of Face2Face lectures were uploaded to the project LMS by the end of the very same week.

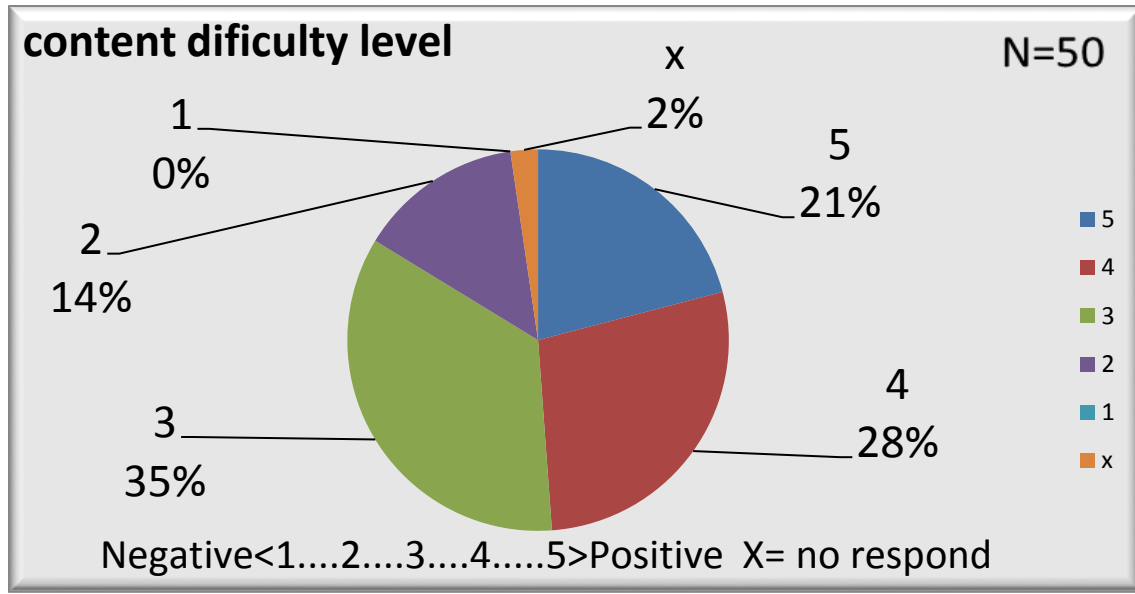
Already in the early stages of course preparation, cooperation among universities of TAU, POLITO and EPFL stablished by using different communication means as Zoom, Skype and email exchange among the professors in order to coordinated the course content. 4 different lecturers delivered lectures during the course. Most of the lectures delivered by prof. Yosi Shacham (the author of the course) and Yakov Rosin from Tower Jazz semiconductors. Prof. Danilo Demarchi (POLITO) and Prof. Sandro Carrera (EPFL) delivered their lectures remotely using skype in front of live student audience at TAU.

The analysis of students feedback based on a form filled after the course final exam:

The survey questions/statements had 5 degree of freedom where: 1 most negative up to 5 indicating most positive attitude







Some comments citations from project LMS online survey form:

Did you encounter difficulties (technical or other) during the course - if so what, and were they adequately resolved?

"Sometimes it took a few days for the videos to be uploaded, but issue was solved quickly by technical staff"

"no, this course was performed well"

Please write a few words about your impression of this mode of learning relative to frontal (face-to-face) learning: advantages and disadvantages.

"Very convenient and flexible in hours"

"It depends on your self-discipline, you could take many breaks or stop whenever you want, but you can also rewind"

"It is easier to focus in a frontal learning environment, but the lecture recordings can be viewed later."

"it is good for those who cannot be at the frontal lectures such as myself"

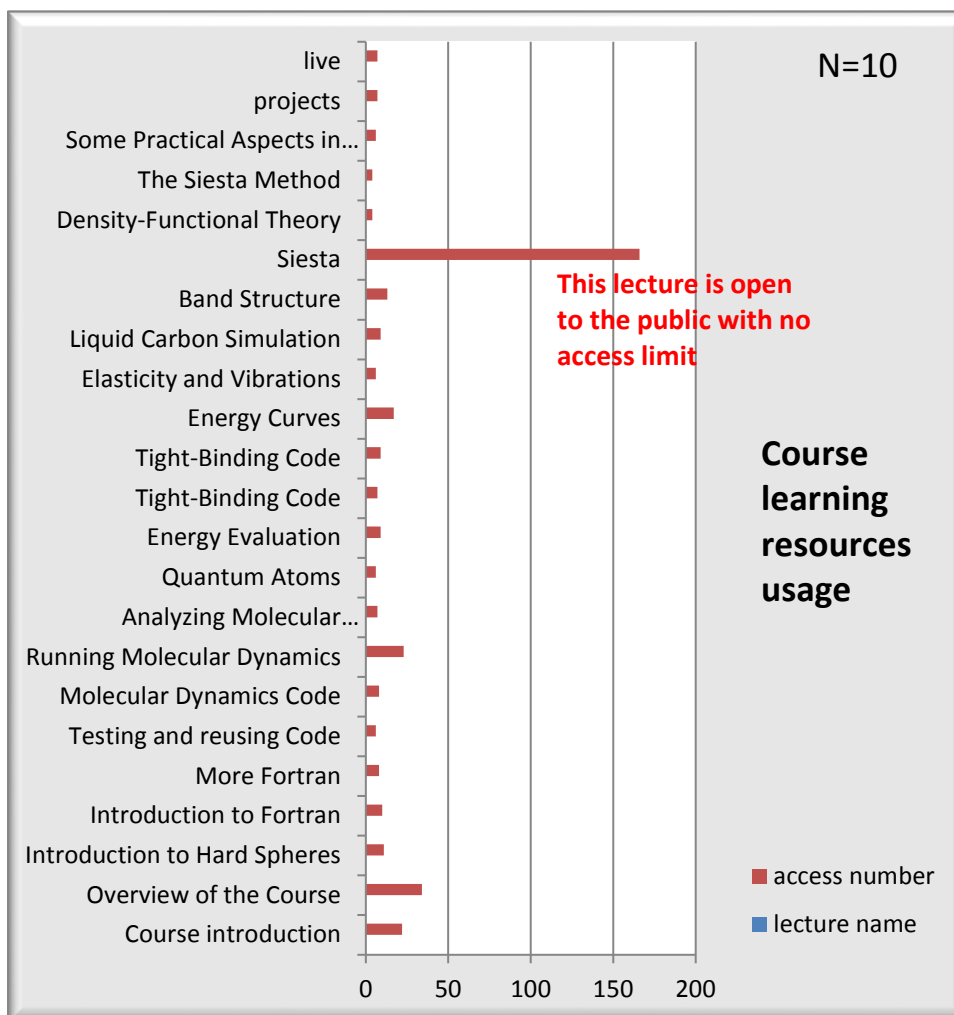
Atomistic Simulations:

The course is completely theoretical course in the framework of master degree and less than 10 students were registered. The course also video recorded in face2face class at tau on the second semester of 2014-2015.

All the course material including the video recording of frontal lectures, the lecture slides and the homework's uploaded to the project LMS and students made use of the online instance of the course by the next semester (the co.

The course recording and all other resources were uploaded simultaneously to the Tel Aviv University and EduNano project LMS, we couldn't enforce the users to choose our platform

Course learning resources usage chart taking from EduNano LMS logs

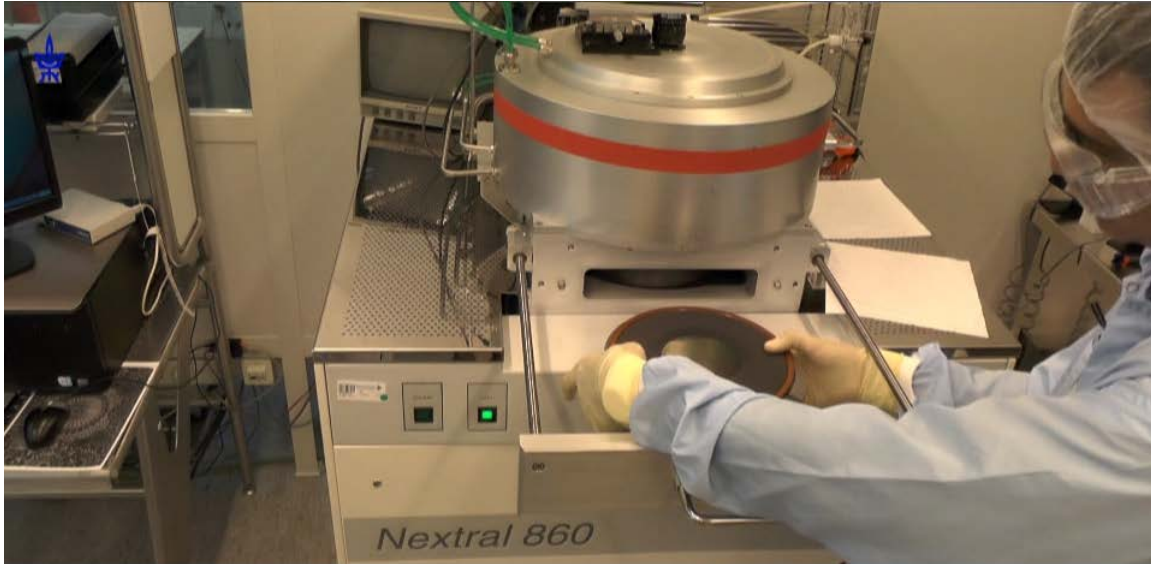


Data the course evaluation report from TAU course assessment survey:

שם המרצה : ד"ר אוסבלדו דיאנו לופז
שם הקורס : סימולציה אטומיסטית של חומרים - שיעור
שם החוג : המחלקה למדע והנדסה של חומרים
שם הפקולטה : הפקולטה להנדסה על-שם איבי ואלדר פליישמן
קוד הקורס : 0581.5221.01
מספר נרשמים : 9
מספר משיבים : 2
שיעור תיאור קבוצת השוואה : 0581 - המגמה למדע והנדסה של חומרים - שיעור - סמסטר ב' תשע"ו
שיעור אחוז המשיבים נמוך מ - 40% : 22% שים לב כי אחוז המשיבים נמוך מ - 40%

גרף השוואה מול קבוצת השוואה	קורלציה עם הפריט (#)	התפלגות הערכות בקורס שלך							קבוצת השוואה		הערכת הקורס שלך			הפריט	
		1	2	3	4	5	6	7	ס"ת	ממוצע	ס"ת	ממוצע	חציון		
1 2 3 4 5 6 7															
----(-)-*-	1.00	0	0	0	0	1	1	0.92	5.42	0.71	6.50	6.50	1. הערכה כללית של המרצה (#)		
----(-)-*-	1.00	0	0	0	0	1	1	0.96	5.45	0.71	6.50	6.50	2. השיעורים היו מאורגנים		
-(--)-*-	1.00	0	0	0	0	1	1	0.98	5.03	0.71	6.50	6.50	3. השיעורים היו בהירים		
----(-)-*-	1.00	0	0	0	0	1	1	1.06	4.97	0.71	5.50	5.50	4. השיעורים היו מעניינים		
-----(-)-*	0.00	0	0	0	0	0	2	0.97	5.98	0.00	7.00	7.00	5. יחס המרצה לתלמידים היה חיבי		
(-)-	0.00	0	0	0	0	0	0	0.59	6.16	0.00	0.00	0.00	6. רמת התיאום בין המרצה בקורס למתרגל (כאשר קיים שיעור תרגול)		
--(-)-*-	1.00	0	0	0	0	1	0	0.94	5.45	1.41	6.00	6.50	7. אתר הקורס תרם ללמידה בקורס		

Cleanroom – Nano fabrication lab procedures recordings:



A video recordings repository of Nano Fabrication procedures were recorded at TAU center cleanroom facilities in the framework of Edunano project.

The recordings are uploaded as part of Learning Objects (LO) repository to the project LMS. The recordings will be integrated in the relevant courses to be developed in the future to visualize and support theoretical learning.

During the recording process a special efforts has been done to connect various cutting edge lab equipment with recording computer and camera to capture high quality images from the equipment and their computer controlled interfaces.

Recording made by TAU team in previous projects also inserted in this lab recording repository