

## CHEM-E5125 COURSE INFORMATION, 2021

Thin Film Technology (Master's Level), 5 cr.

Course consists of Teaching, Student activities and Exam.

Course contacts:

Responsible teacher: [Jari.Koskinen@aalto.fi](mailto:Jari.Koskinen@aalto.fi)

Course Assistant: [Touko.Liljestrom@aalto.fi](mailto:Touko.Liljestrom@aalto.fi)

### **COURSE GRADING CRITERIA:**

Exam: 40%

Student Activities: 60%

### **SECTION EXPLANATION:**

**LECTURES:** Lectures will be held as per schedule given below. Course material will be made available on MyCourses in advance. Students are expected to study before they attend the lecture. Every lecture session will start by testing the basics in the form of a simple quiz. The lecture will focus on the main details for selected topic for that day. Students are requested to have the lecture slides with them and ask clarifications during the lecture period.

Date	Time	Place	Lecture Schedule
12/01/2021	12.00 – 14.00	Online	Introduction / Jari Koskinen
15/01/2021	12.00 – 14.00	D311	Q1, Vacuum technology/ Jari Koskinen
19/01/2021	12.00 – 14.00	D311	Q2, PVD 1 / Jari Koskinen
22/01/2021	12.00 – 14.00	D311	Q3, PVD 2 / Jari Koskinen
26/01/2021	12.00 – 14.00	D311	Q4, Characterisation / Jari Koskinen
29/01/2021	12.00 – 14.00	D311	Q5, CVD and ALD / Sami Franssila
2/02/2021	12.00 – 14.00	D311	Application 1 discussion / Jari Koskinen
5/02/2021	12.00 – 14.00	D311	Application 1 Students Walking Gallery
9/02/2021	12.00 – 14.00	D311	Q6, Reactors and production methods/ Sami Franssila
12/02/2021	12.00 – 14.00	D311	Application 2 discussion / Jari Koskinen
16/02/2021	12.00 – 14.00	D311	Application 2 Students Walking Gallery
19/02/2021	12.00 – 14.00	D311	5 best VLOG presentations
26/02/2021	12.00 – 14.00	A305	Exam

**STUDENT ACTIVITIES:** Student activities consists of the following:

- a. Student must participate in daily quizzes held before the lecture. The quiz will be of 15 min duration and fixed number of questions have to be answered shortly. The quizzes will be graded and will make up 15% of the points for course grade.
- b. Student has to make a VLOG (Video log) of maximum 10 min duration and submit to Mycourses on or before 11/02/2018. The topic of the VLOG will be given and is related to the theoretical and practical aspects of the course. You will have to find videos from internet and stick them together to make your VLOG. The VLOG will be graded and will make up 25% points for the course grade. Maximum of 5 best VLOGs will be presented in final lecture and bonus points will be awarded to these students.
- c. Student has to participate in walking gallery with their group. The group will have application related articles to read previously. At the start of the gallery the group will have 20-30 mins to make their “poster” on paper. At the end of this time the groups will rotate and discuss other posters. Activity points are granted based on walking gallery activity. Walking gallery points form 20% of the points for course grade.

**POINT SCHEME:** The points earned for students in the course is given below.

**EACH QUIZ \***

<b>Student Participation</b>	Not Attending	Less than half the answers correct	Between half and all the answers correct
<b>Points awarded</b>	0	2	5

**VLOG (Video Log)**

<b>Student Participation</b>	No Submission	Acceptable VLOG submitted	VLOG selected as one of best VLOG
<b>Points awarded</b>	0	0 - 25	Bonus +5

**EACH WALKING GALLERY (group work but individual grading)\***

<b>Student Participation</b>	Not Attending	Low	Active
<b>Points awarded</b>	0	5	Maximum 10

**\*PLEASE REMEMBER IF YOU ARE UNABLE TO MAKE IT TO THE LECTURE OR GROUP WORK PLEASE INFORM IN ADVANCE. IN CASE YOU MISS THE QUIZ OR GROUP WORK DUE TO ILLNESS OR OTHER VALID REASONS AND INFORM IN ADVANCE YOU WILL BE AWARDED THE MINIMUM POINTS BY DEFAULT.**

**MORE DETAILS CAN BE FOUND FROM RELEVANT SECTION IN MYCOURSES.**

## READING/REFERENCE MATERIAL:

Vacuum tech [https://www3.nd.edu/~nsl/Lectures/urls/LEYBOLD\\_FUNDAMENTALS.pdf](https://www3.nd.edu/~nsl/Lectures/urls/LEYBOLD_FUNDAMENTALS.pdf)

“Materials science of thin films : deposition and structure”, Ohring [Mylibrary E-kirja/E-book](#). Kolme yhtäaikaista käyttäjää, huomaa kirjautua ulos (Logout) palvelusta käytön jälkeen.

Thin Films (Ion Beam Processing and Plasma Processing) [Rossnagel, Stephen M.](#) ; [Cuomo, J. J.](#) ; [Westwood, William D.](#) ;

Plasma Processing: [Knovel E-kirja/E-book](#)

More titles can be found by going to Aalto library site (<http://lib.aalto.fi/en/> ) and entering search term for example “Thin film process” or “Physical Vapour Deposition”.