

Hokkaido University Syllabus					
<div> <div></div> <div>Course Title</div> </div>					
Surface Nanomaterials' Sciences					
<div> <div></div> <div>Subtitle</div> </div>					
<div> <div></div> <div>Instructor (Institution)</div> </div>					
Kiyotaka ASAKURA(Institute for Catalysis)					
<div> <div></div> <div>Other Instructors (Institution)</div> </div>					
Satoru TAKAKUSAGI(Institute for Catalysis) Kiyotaka ASAKURA(Institute for Catalysis)					
<div> <div></div> <div>Course Type</div> </div>				<div> <div></div> <div>Open To Other Faculties / Schools</div> </div>	
<div> <div></div> <div>Year</div> </div>	2018	<div> <div></div> <div>Semester</div> </div>	2nd Semester (Winter Term)	<div> <div></div> <div>Course Number</div> </div>	092424
<div> <div></div> <div>Type of Class</div> </div>	Lecture	<div> <div></div> <div>Number of Credits</div> </div>	1	<div> <div></div> <div>Year of Eligible Students</div> </div>	~
<div> <div></div> <div>Eligible Department / Class</div> </div>				<div> <div></div> <div>Other Information</div> </div>	
<div> <div></div> <div>Numbering Code</div> </div>	ENG_QSE 6602				
<div> <div></div> <div>Major Category Code</div> </div>	<div> <div></div> <div>Major Category Title</div> </div>				
ENG_QSE	Engineering_Quantum Science and Engineering				
<div> <div></div> <div>Level Code</div> </div>	<div> <div></div> <div>Level</div> </div>				
6	Specialized Subjects (advanced) in graduate level (Master's Course and Professional Course)				
<div> <div></div> <div>Middle Category Code</div> </div>	<div> <div></div> <div>Middle Category Title</div> </div>				
6					
<div> <div></div> <div>Small Category Code</div> </div>	<div> <div></div> <div>Small Category Title</div> </div>				
0					
<div> <div></div> <div>Language Type</div> </div>					
Classes are in Japanese and English (bilingual, or language is decided once the student composition has been finalized).					

Key Words

Surface, Catalyst, Nanomaterial, Synchrotron radiation, Electron microscopy, STM, AFM,Lithography

Course Objectives

To understand the importance of nanomaterials. To understand what are particular features in nanomaterials.

Course Goals

You learn the concept of nanoworld.
You learn the catalysis and electronics

Course Schedule

1. What is nanoscience?
2. What is special in nanoworld?
3. How do we make nanomaterials

■ ■ Homework

You have to know quantum physics and solid state physics completely.
You should do homeworks I give you in the lecture.
The e-learning is available.

■ ■ Grading System

Homework(20%) Days of attended(10%) Presentations(70%)

■ ■ Textbooks

■ ■ Reading List

[Introduction to Solid State Physics / CKittel : Wiley, ISBN:0-471-11181-3](#)
[Introduction to Surface Chemistry / G.Somorjai : Wiley, ISBN:9780470508237](#)

■ ■ Websites

<http://www.cat.hokudai.ac.jp/asakura>

■ ■ Website of Laboratory

<http://www.cat.hokudai.ac.jp/asakura>

■ ■ Additional Information

■ ■ Update

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