

Special Subjects of the Department of Materials Structure Science

Field	Course Code	Subject	Credit	Content of subject	Instructor
Synchrotron Radiation Science	20DMSa02**	Introduction to Synchrotron Radiation Science	2	Introduction to make the best usage of synchrotron radiation for scientific research, including a general review on main analytical approaches and examples of their application.	KIMURA, Masao
	20DMSa03**	Fundamentals and applications of detectors	2	Lectures on the radiation detectors for synchrotron radiation experiments and on their advanced uses.	KISHIMOTO, Shunji
	20DMSa05**	X-ray Imaging Optics	2	Lectures on the principle, the technique and applications of x-ray imaging optics using synchrotron radiation.	HIRANO, Keiichi
	20DMSa06**	Solid State Spectroscopy Using Synchrotron Radiation	2	Lectures on solid state spectroscopy, in particular magnetic properties, using synchrotron radiation.	
	20DMSa07**	X-ray Absorption Spectroscopy for Materials and Chemistry	2	Lectures on x-ray absorption and x-ray fluorescent spectroscopies (XAFS, XRF) for materials and chemistry.	ABE, Hitoshi
	20DMSa08**	Medical Application of Synchrotron Radiation	2	Lectures on the principle and applications of medical imaging and radiation therapy using synchrotron radiation and the outline concerning medical ethics.	HYODO, Kazuyuki
	20DMSa09**	Special Guidance to Synchrotron Radiation Science	2	Lectures on synchrotron radiation science for materials and life science, and advanced techniques for synchrotron radiation production and instrumentation.	Synchrotron Radiation Members
	20DMSa10**	Fundamentals and Applications of Vacuum Technology	2	Lectures on vacuum technology required for materials structure science and synchrotron radiation science.	MASE, Kazuhiko
Materials Structure Science based on Synchrotron Radiation	20DMSb02**	Structure Biology I	2	Lectures on synchrotron X-ray crystallographic analysis of bio-macromolecules.	SENDA, Toshiya
	20DMSb03**	Structure Biology II	2		SENDA, Toshiya
	20DMSb04**	Molecular Biology I	2	Lectures on molecular biology from genes to cells, which is based on modern biology.	KATO, Ryuichi
	20DMSb05**	Molecular Biology II	2		KATO, Ryuichi
	20DMSb06**	Synchrotron Radiation Biophysics	2	Lectures on synchrotron radiation effects on cells, genes, and bio-polymers.	USAMI, Noriko
	20DMSb08**	Dynamic Aspects of Materials Structure	2	Lectures on dynamic aspects of materials structure revealed by utilizing pulsed nature of SR.	ADACHI, Shin-ichi
	20DMSb09**	Synchrotron Radiation Surface Spectroscopy I	2	Lectures on the principle of surface chemistry using synchrotron radiation and its applications.	MASE, Kazuhiko
	20DMSb10**	Synchrotron Radiation Surface Spectroscopy II	2	Lectures on the basics of soft X-ray spectroscopy with a diffraction grating and its application to atomic and electronic structure analyses of surface.	AMEMIYA, Kenta
Neutron and Muon Science	20DMSc01**	Neutron Diffraction and Scattering I	2	Lectures on the relation between the microscopic information obtained by neutron diffraction/scattering and the macroscopic properties of the matter.	ENDO, Hitoshi
	20DMSc02	Neutron Diffraction and Scattering II	2	Lectures on the fundamentals and applications of the neutron scattering/diffraction by various materials.	OTOMO, Toshiya
	20DMSc03**	Neutron Diffraction and Scattering III	2	Lectures on the magnetic state of materials obtained by the neutron scattering.	ITOH, Shinichi
	20DMSc04**	Neutron Crystallography	2	Lectures on the crystallographic research of functional materials using neutron.	SAITO, Takashi
	20DMSc09**	Introduction to Neutron Science I	2	Lectures on neutron science for materials, and advanced techniques for neutron production, transportation, detection and instrumentation.	Neutron Members
	20DMSc10**	Introduction to Neutron Science II	2	Lectures on neutron science for materials, and advanced techniques for neutron production, transportation, detection and instrumentation.	Neutron Members
	20DMSc11**	Introduction to Neutron Science III	2	Lectures on neutron science for materials, and advanced techniques for neutron production, transportation, detection and instrumentation.	Neutron Members
	20DMSc12**	Introduction to Neutron Science IV	2	Lectures on neutron science for materials, and advanced techniques for neutron production, transportation, detection and instrumentation.	Neutron Members

Field	Course Code	Subject	Credit	Content of subject	Instructor
Neutron and Muon Science	20DMSc13**	Introduction to Neutron Science V	2	Lectures on neutron science for materials, and advanced techniques for neutron production, transportation, detection and instrumentation.	Neutron Members
	20DMSc14**	Introduction to Neutron Science VI	2	Lectures on neutron science for materials, and advanced techniques for neutron production, transportation, detection and instrumentation.	Neutron Members
	20DMSc05**	Fundamentals of Neutron Optics	2	Lectures on the functions of monochromators, mirrors and lenses for neutron instrumentation.	INO, Takashi
	20DMSc07**	Muon Science	2	Lectures on the basics of meson physics by muon and pion interaction with matters.	SHIMOMURA, Koichiro
	20DMSc08**	Muon-probed condensed matter physics	2	Applications of muon spin rotation, relaxation, resonance to the studies of magnetism and hydrogen-related phenomena is lectured.	KODA, Akihiro
Common	20DMSd01**	Special Exercise for Materials Structure Science I a	2	Seminars and laboratory exercise to understand the principle and techniques in Materials Structure Science through extensive use of KEK facilities.	All Faculty Members
	20DMSd02**	Special Exercise for Materials Structure Science I b	2		
	20DMSd03**	Special Exercise for Materials Structure Science II	4		
	90DMSd01**	Special Seminar for Materials Structure Science I	4	Research on the specific problems in Materials Structure Science under the guidance of faculty members.	
	90DMSd02**	Special Seminar for Materials Structure Science II	4		
	90DMSd03**	Special Seminar for Materials Structure Science III	4		
	90DMSd04**	Special Seminar for Materials Structure Science IV	4		
	90DMSd05**	Special Seminar for Materials Structure Science V	4		

A two-digit number or letter will be entered to ** according to the semester or the lecturer in charge.