Subject Code	SD11010013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Mathematical Structures		
Subject Number	SAMSM1701		
Credit(s)	2 Credits	Teaching Method	Seminar
Lecturer(s)	Mitsuyasu Hashimoto,Hirotaka Akiyoshi,Masato Okado,Masamichi Yoshida,Hiroshi Tamaru,Shunsuke Yamana,Ken Abe,Hideyuki Ishi,Futoshi Takahashi,Shin Kato, Hideaki Sunagawa,Takamichi Sano,Masaaki Furusawa,Hyohe Miyachi,Sachiko Hamano,Yoshihiro Ohnita,Takayuki Koike		
Main Theme of the Subject	Latest research developments and results in the theory of mathematical structures.		
Goal of the Subject	To learn the latest research developments and results in some areas of mathematical structures.		
Contents of the Subject /Subject Plan	This course is given in the seminar format conducted by the faculty members.		
Preparation and Review	To be assigned later.		
Evaluation Method	The grade is given based on the presentations and the participations in the seminar.		
Comments to Students	To be communicated later.		
Teaching Materials	To be assigned later.		
Remarks1			

Subject Code	SD11020013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Mathematical Analysis		
Subject Number	SAMSM1702		
Credit(s)	2 Credits	Teaching Method	Seminar
Lecturer(s)	Mitsuyasu Hashimoto,Hirotaka Akiyoshi,Masato Okado,Masamichi Yoshida,Hiroshi Tamaru,Shunsuke Yamana,Ken Abe,Hideyuki Ishi,Futoshi Takahashi,Shin Kato, Hideaki Sunagawa,Takamichi Sano,Masaaki Furusawa,Hyohe Miyachi,Sachiko Hamano,Yoshihiro Ohnita,Takayuki Koike		
Main Theme of the Subject	Latest research developments and results in mathematical analysis.		
Goal of the Subject	To learn the latest research developments and results in some areas of mathematical analysis.		
Contents of the Subject /Subject Plan	This course is given in the seminar format conducted by the faculty members.		
Preparation and Review	To be assigned later.		
Evaluation Method	The grade is given based on the presentations and the participations in the seminar.		
Comments to Students	To be communicated later.		
Teaching Materials	To be assigned later.		
Remarks1			

Subject Code	SD12010013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Fundamental Physics		
Subject Number	SAPS11701		
Credit(s)	2 Credits	Teaching Method	Special Seminar
Lecturer(s)	Eiichi Nakano, Hiroyuki Sakuragi, Nobuyuki Kanda, Katsuichi Kanemoto, Sanefumi Moriyama, Nobuhito Maru, Hiroshi Itoyama, Hideo Yano, Masaki Arima, Shin Inouye, Osamu Ishikawa, Akira Oguri, Kazuhiro Yamamoto, Ken Obara, Masako Iwasaki, Hiromitsu Takeuchi, Mitsuru Sugisaki, Yoshihiro Seiya, Yousuke Itoh, Ken-ichi Nakao, Yunori Nishikawa, Hideki Ishihara, Yoshiki Tsunesada, Shoichi Ogio, Makoto Tsubota		
Main Theme of the Subject	In this seminar, the recent developments in fundamental physics are broadly studied.		
Goal of the Subject	In this lecture, every student is encouraged to set up voluntary research theme and plan. Proper academic advice leading to Doctoral thesis will be given.		
Contents of the Subject /Subject Plan	In this seminar, the recent developments in fundamental physics are broadly studied.		
Preparation and Review	It will be announced in the class.		
Evaluation Method	Evaluation is based on attendance, report and discussion in a class.		
Comments to Students	It will be announced in the class.		
Teaching Materials	It will be announced in the class.		
Remarks1			

Subject Code	SD12020013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Astroparticle and High Energy Physics		
Subject Number	SAPS21701		
Credit(s)	2 Credits	Teaching Method	Special Seminar
Lecturer(s)	Eiichi Nakano, Hiroyuki Sakuragi, Nobuyuki Kanda, Katsuichi Kanemoto, Sanefumi Moriyama, Nobuhito Maru, Hiroshi Itoyama, Hideo Yano, Masaki Arima, Shin Inouye, Osamu Ishikawa, Akira Oguri, Kazuhiro Yamamoto, Ken Obara, Masako Iwasaki, Hiromitsu Takeuchi, Mitsuru Sugisaki, Yoshihiro Seiya, Yousuke Itoh, Ken-ichi Nakao, Yunori Nishikawa, Hideki Ishihara, Yoshiki Tsunesada, Shoichi Ogio, Makoto Tsubota		
Main Theme of the Subject	Learn a wide range of recent research results and development in the field of astrophysics and high energy physics from classes given by multiple faculty members.		
Goal of the Subject	Discuss research program leading to the writing of Doctoral thesis. Special emphasis will be placed on encouraging students to be independent in making research plans, and to think throughly on significance of the topic.		
Contents of the Subject /Subject Plan	Learn a wide range of recent research results and development in the field of astrophysics and high energy physics from classes given by multiple faculty members.		
Preparation and Review	To be announced separately.		
Evaluation Method	Grading will be given based on attendance, reports, and the discussions in the class.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD12030013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Condensed Matter Physics		
Subject Number	SAPS31701		
Credit(s)	2 Credits	Teaching Method	Special Seminar
Lecturer(s)	Eiichi Nakano, Hiroyuki Sakuragi, Nobuyuki Kanda, Katsuichi Kanemoto, Sanefumi Moriyama, Nobuhito Maru, Hiroshi Itoyama, Hideo Yano, Masaki Arima, Shin Inouye, Osamu Ishikawa, Akira Oguri, Kazuhiro Yamamoto, Ken Obara, Masako Iwasaki, Hiromitsu Takeuchi, Mitsuru Sugisaki, Yoshihiro Seiya, Yousuke Itoh, Ken-ichi Nakao, Yunori Nishikawa, Hideki Ishihara, Yoshiki Tsunesada, Shoichi Ogio, Makoto Tsubota		
Main Theme of the Subject	Learn a wide range of recent research results and development in the field of condensed matter physics from classes given by multiple faculty members.		
Goal of the Subject	Discuss research program leading to the writing of Doctoral thesis. Special emphasis will be placed on encouraging students to be independent in making research plans, and to think throughly on significance of the topic.		
Contents of the Subject /Subject Plan	Learn a wide range of recent research results and development in the field of condensed matter physics from classes given by multiple faculty members.		
Preparation and Review	To be announced separately.		
Evaluation Method	Grading will be given based on attendance, reports, and the discussions in the class.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD13010013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D1 Mathematics)		
Subject Number			
Credit(s)	3 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Mitsuyasu Hashimoto,Hirotaka Akiyoshi,Masato Okado,Masamichi Yoshida,Hiroshi Tamaru,Shunsuke Yamana,Ken Abe,Hideyuki Ishi,Futoshi Takahashi,Shin Kato, Hideaki Sunagawa,Takamichi Sano,Masaaki Furusawa,Hyohe Miyachi,Sachiko Hamano,Yoshihiro Ohnita,Takayuki Koike		
Main Theme of the Subject	Fundamental theory of each specialty.		
Goal of the Subject	To understand systematically fundamentals of the theory which is necessary to solve the research problem for the doctoral thesis.		
Contents of the Subject /Subject Plan	This is intended to gain a systematic understanding of fundamentals of the theory to solve the research problem for the doctoral thesis. For that purpose, each student is assigned reading materials and is expected to formulate and to solve the research problem for the doctoral thesis under the guidance of the thesis adviser. Also a guidance is given on how to give presentations at research conferences and on how to write a research paper and submit it to an academic journal.		
Preparation and Review	To be assigned later.		
Evaluation Method	The grade is assigned based on the presentations and the participations in the seminar.		
Comments to Students	To be communicated later.		
Teaching Materials	To be assigned later.		
Remarks1			

Subject Code	SD13010023	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D1 Physics)		
Subject Number			
Credit(s)	3 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Eiichi Nakano, Hiroyuki Sakuragi, Nobuyuki Kanda, Katsuichi Kanemoto, Sanefumi Moriyama, Nobuhito Maru, Hiroshi Itoyama, Hideo Yano, Masaki Arima, Shin Inouye, Osamu Ishikawa, Akira Oguri, Kazuhiro Yamamoto, Ken Obara, Masako Iwasaki, Hiromitsu Takeuchi, Mitsuru Sugisaki, Yoshihiro Seiya, Yousuke Itoh, Ken-ichi Nakao, Yunori Nishikawa, Hideki Ishihara, Yoshiki Tsunesada, Shoichi Ogio, Makoto Tsubota		
Main Theme of the Subject	Acquiring the systematic knowledge and skills on the theories and experiments leading to the writing of the Doctoral thesis.		
Goal of the Subject	We aim to acquire the systematic knowledge and skills on the theories and experiments leading to the writing of Doctoral thesis.		
Contents of the Subject /Subject Plan	We aim to acquire the systematic knowledge and skills on the theories and experiments leading to the writing of Doctoral thesis. For this purpose, discuss research program leading to the writing of Doctoral thesis. Special emphasis will be placed on encouraging students to make research plans, to read textbooks and journal articles, and to acquire the experimental skills. It also provides guidance on the presentation of research results at academic conferences and the preparation and submission of manuscripts to academic journals.		
Preparation and Review	To be announced separately.		
Evaluation Method	Evaluation will be made totally on a basis of attendance, reports and discussions at the seminar.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD13020013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D2 Mathematics)		
Subject Number			
Credit(s)	3 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Mitsuyasu Hashimoto,Hirotaka Akiyoshi,Masato Okado,Masamichi Yoshida,Hiroshi Tamaru,Shunsuke Yamana,Ken Abe,Hideyuki Ishi,Futoshi Takahashi,Shin Kato, Hideaki Sunagawa,Takamichi Sano,Masaaki Furusawa,Hyohe Miyachi,Sachiko Hamano,Yoshihiro Ohnita,Takayuki Koike		
Main Theme of the Subject	Fundamental theory of each specialty.		
Goal of the Subject	To understand systematically fundamentals of the theory which is necessary to solve the research problem for the doctoral thesis.		
Contents of the Subject /Subject Plan	This is intended to gain the systematic understanding of the fundamentals of the theory to solve the research problem for the doctoral thesis. For that purpose, each student is assigned reading materials and is expected to formulate and to solve the research problem for the doctoral thesis under the guidance of the thesis adviser. Also a guidance is given on how to give presentations at research conferences and on how to write a research paper and submit it to an academic journal.		
Preparation and Review	To be assigned later.		
Evaluation Method	The grade is assigned based on the presentations and the participations in the seminar.		
Comments to Students	To be communicated later.		
Teaching Materials	To be assigned later.		
Remarks1			

Subject Code	SD13020023	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D2 Physics)		
Subject Number			
Credit(s)	3 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Eiichi Nakano, Hiroyuki Sakuragi, Nobuyuki Kanda, Katsuichi Kanemoto, Sanefumi Moriyama, Nobuhito Maru, Hiroshi Itoyama, Hideo Yano, Masaki Arima, Shin Inouye, Osamu Ishikawa, Akira Oguri, Kazuhiro Yamamoto, Ken Obara, Masako Iwasaki, Hiromitsu Takeuchi, Mitsuru Sugisaki, Yoshihiro Seiya, Yousuke Itoh, Ken-ichi Nakao, Yunori Nishikawa, Hideki Ishihara, Yoshiki Tsunesada, Shoichi Ogio, Makoto Tsubota		
Main Theme of the Subject	Acquiring the systematic knowledge and skills on the theories and experiments leading to the writing of the Doctoral thesis.		
Goal of the Subject	We aim to acquire the systematic knowledge and skills on the theories and experiments leading to the writing of Doctoral thesis.		
Contents of the Subject /Subject Plan	We aim to acquire the systematic knowledge and skills on the theories and experiments leading to the writing of Doctoral thesis. For this purpose, discuss research program leading to the writing of Doctoral thesis. Special emphasis will be placed on encouraging students to make research plans, to read textbooks and journal articles, and to acquire the experimental skills. It also provides guidance on the presentation of research results at academic conferences and the preparation and submission of manuscripts to academic journals.		
Preparation and Review	To be announced separately.		
Evaluation Method	Evaluation will be made totally on a basis of attendance, reports and discussions at the seminar.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD13030013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D3 Mathematics)		
Subject Number			
Credit(s)	2 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Mitsuyasu Hashimoto,Hirotaka Akiyoshi,Masato Okado,Masamichi Yoshida,Hiroshi Tamaru,Shunsuke Yamana,Ken Abe,Hideyuki Ishi,Futoshi Takahashi,Shin Kato, Hideaki Sunagawa,Takamichi Sano,Masaaki Furusawa,Hyohe Miyachi,Sachiko Hamano,Yoshihiro Ohnita,Takayuki Koike		
Main Theme of the Subject	Fundamental theory of each specialty.		
Goal of the Subject	To understand systematically the fundamentals of the theory which are necessary to solve the research problem for the doctoral thesis.		
Contents of the Subject /Subject Plan	This is intended to gain a systematic understanding of the fundamentals of theory to solve the research problem for the doctoral thesis. For that purpose, each student is assigned reading materials and is expected to formulate and to solve the research problem for the doctoral thesis under the guidance of the thesis adviser. Also a guidance is given on how to give presentations at research conferences and on how to write a research paper and submit it to an academic journal.		
Preparation and Review	To be assigned later.		
Evaluation Method	The grade is assigned based on the presentations and the participations in the seminar.		
Comments to Students	To be communicated later.		
Teaching Materials	To be assigned later.		
Remarks1			

Subject Code	SD13030023	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D3 Physics)		
Subject Number			
Credit(s)	2 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Eiichi Nakano, Hiroyuki Sakuragi, Nobuyuki Kanda, Katsuichi Kanemoto, Sanefumi Moriyama, Nobuhito Maru, Hiroshi Itoyama, Hideo Yano, Masaki Arima, Shin Inouye, Osamu Ishikawa, Akira Oguri, Kazuhiro Yamamoto, Ken Obara, Masako Iwasaki, Hiromitsu Takeuchi, Mitsuru Sugisaki, Yoshihiro Seiya, Yousuke Itoh, Ken-ichi Nakao, Yunori Nishikawa, Hideki Ishihara, Yoshiki Tsunesada, Shoichi Ogio, Makoto Tsubota		
Main Theme of the Subject	Acquiring the systematic knowledge and skills on the theories and experiments leading to the writing of the Doctoral thesis.		
Goal of the Subject	We aim to acquire the systematic knowledge and skills on the theories and experiments leading to the writing of Doctoral thesis.		
Contents of the Subject /Subject Plan	We aim to acquire the systematic knowledge and skills on the theories and experiments leading to the writing of Doctoral thesis. For this purpose, discuss research program leading to the writing of Doctoral thesis. Special emphasis will be placed on encouraging students to make research plans, to read textbooks and journal articles, and to acquire the experimental skills. It also provides guidance on the presentation of research results at academic conferences and the preparation and submission of manuscripts to academic journals.		
Preparation and Review	To be announced separately.		
Evaluation Method	Evaluation will be made totally on a basis of attendance, reports and discussions at the seminar.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD21100013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Creative Molecular Science		
Subject Number	SBCMS1701	Teaching Method	Seminar
Credit(s)	2 Credits		
Lecturer(s)	Toshiyuki Moriuchi, Yoshio Teki, Tomoyuki Yatsuhashi, Eiko Mieda, Ken-ichi Yuyama, Yasuyuki Tsuboi, Yoshinosuke Usuki, Daisuke Shiomi, Yutaka Amao, Hiroshi Nakajima, Harukazu Yoshino, Satoshi Shinoda, Kazuo Toyota, Tetsuya Satoh, Masumi Itazaki, Ritsuko Fujii, Takanori Nishioka, Kenji Sakota, Hiroyuki Miyake, Ikuko Miyahara, Chie Hosokawa, Yoshimitsu Tachi, Masatoshi Kozaki, Tetsuro Shinada, Takahiro Nishimura, Yoshiki Morimoto, Atsushi Nakayama, Kazuhiko Sakaguchi, Keisuke Nishikawa, Kazunobu Sato		
Main Theme of the Subject	The aim of this course is to provide an opportunity for students to learn current research topics in the field of creative molecular science to gain an overview of developments in this field.		
Goal of the Subject	The goals of this course will be informed at the beginning of the class.		
Contents of the Subject /Subject Plan	Course contents will be provided at the beginning of the class.		
Preparation and Review	To be announced separately.		
Evaluation Method	Grading will be based on lab reports and assessment of performance in the seminar.		
Comments to Students	To be announced separately.		
Teaching Materials	Teaching materials will be introduced in the class.		
Remarks1			

Subject Code	SD21110013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Functional Molecular Science		
Subject Number	SBFMS1701		
Credit(s)	2 Credits	Teaching Method	Seminar
Lecturer(s)	Toshiyuki Moriuchi, Yoshio Teki, Tomoyuki Yatsuhashi, Eiko Mieda, Ken-ichi Yuyama, Yasuyuki Tsuboi, Yoshinosuke Usuki, Daisuke Shiomi, Yutaka Amao, Hiroshi Nakajima, Harukazu Yoshino, Satoshi Shinoda, Kazuo Toyota, Tetsuya Satoh, Masumi Itazaki, Ritsuko Fujii, Takanori Nishioka, Kenji Sakota, Hiroyuki Miyake, Ikuko Miyahara, Chie Hosokawa, Yoshimitsu Tachi, Masatoshi Kozaki, Tetsuro Shinada, Takahiro Nishimura, Yoshiki Morimoto, Atsushi Nakayama, Kazuhiko Sakaguchi, Keisuke Nishikawa, Kazunobu Sato		
Main Theme of the Subject	The aim of this course is to provide an opportunity for students to learn current research topics in the field of functional molecular science to gain an overview of developments in this field.		
Goal of the Subject	The goals of this course will be informed at the beginning of the class.		
Contents of the Subject /Subject Plan	Course contents will be provided at the beginning of the class.		
Preparation and Review	To be announced separately.		
Evaluation Method	Grading will be based on lab reports and assessment of performance in the seminar.		
Comments to Students	To be announced separately.		
Teaching Materials	Teaching materials will be introduced in the class.		
Remarks1			

Subject Code	SD21120013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Leadership Training Program		
Subject Number	SBLTP1701		
Credit(s)	2 Credits	Teaching Method	Special Seminar
Lecturer(s)	Masatoshi Kozaki		
Main Theme of the Subject	We will develop "leadership" and "communication" abilities based on real instructing experience by setting opportunities for practical educational experience at high school in which graduate students take the initiative.		
Goal of the Subject	Acquisition of education and practical skills through guidance of high school students aiming for presentation at the Grand Contest on Chemistry for High School Students.		
Contents of the Subject /Subject Plan	Students go to a high school (or a college of technology) where high school students (college students) is planning entry in Grand Contest on Chemistry for High School Students and teaches, consults and discusses research conducted by high school students (college students) in cooperation with high school teachers (college teachers). Additionally, students provide instruction from time to time by e-mail and telephone. Through these experiences, students will acquire leadership skills and communication skills practically.		
Preparation and Review	I will show students separately.		
Evaluation Method	Students will be evaluated based on student reports and high school teacher reports.		
Comments to Students	Review the undergraduate education of the university and the general chemistry learned in the previous doctoral program.		
Teaching Materials	none		
Remarks1			

Subject Code	SD21130013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Academic Exchange Study		
Subject Number	SBAES1701		
Credit(s)	2 Credits	Teaching Method	Special Seminar
Lecturer(s)	Yoshio Teki		
Main Theme of the Subject	The aim of this course is to provide an opportunity for students to learn research fields that differ from their advanced research for doctoral thesis.		
Goal of the Subject	The goal of this course is for students to have the ability and the wide field of vision for the different research field from their advanced research for doctoral thesis or the interdisciplinary researches		
Contents of the Subject /Subject Plan	Course contents will be provided at the beginning of the class.		
Preparation and Review	Course contents will be provided at the beginning of the class.		
Evaluation Method	Grading will be based on reports and assessment of performance in the research or the seminar attended in the different fields from their advanced research for doctoral thesis.		
Comments to Students	Students are expected to attend actively to the research or the seminar.		
Teaching Materials	Guidance will be provided at the beginning of the class.		
Remarks1			

Subject Code	SD21140013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Interdisciplinary Planner TrainingProgram		
Subject Number	SBIPT1701		
Credit(s)	2 Credits	Teaching Method	Special Seminar
Lecturer(s)	Toshiyuki Moriuchi,Hiroshi Nakajima		
Main Theme of the Subject	This class fosters interdisciplinary and international perspectives through short-term overseas dispatch and international research exchange.		
Goal of the Subject	The purpose of this class is to conduct short-term dispatch to overseas collaborative research laboratories, presentations and discussions at international conferences, discussions with foreign researchers invited at international seminars, etc. to foster		
Contents of the Subject /Subject Plan	(1) The teacher will do with consultation and confirmation of the applicant's hope and implementation plan with the supervising advisor. (2) Following the implementation plan, short-term stay at overseas collaborative research laboratories, presentations and discussions at international conferences, discussions with foreign researchers invited at international seminars, etc, will be carried out. (3) The student submits a report on the contents of the studies. (4) The teacher evaluates the submitted report from the viewpoint of the achievement level of the goal.		
Preparation and Review	It will be announced separately.		
Evaluation Method	The teacher evaluates the submitted report from the viewpoint of the achievement level of the goal.		
Comments to Students	We would like you to expand your perspective by actively participating.		
Teaching Materials	It will be announced separately.		
Remarks1			

Subject Code	SD23010013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D1)		
Subject Number	SBARC1701		
Credit(s)	3 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Toshiyuki Moriuchi, Yoshio Teki, Tomoyuki Yatsuhashi, Eiko Mieda, Ken-ichi Yuyama, Yasuyuki Tsuboi, Yoshinosuke Usuki, Daisuke Shiomi, Yutaka Amao, Hiroshi Nakajima, Harukazu Yoshino, Satoshi Shinoda, Kazuo Toyota, Tetsuya Satoh, Masumi Itazaki, Ritsuko Fujii, Takanori Nishioka, Kenji Sakota, Hiroyuki Miyake, Ikuko Miyahara, Chie Hosokawa, Yoshimitsu Tachi, Masatoshi Kozaki, Tetsuro Shinada, Takahiro Nishimura, Yoshiki Morimoto, Atsushi Nakayama, Kazuhiko Sakaguchi, Keisuke Nishikawa, Kazunobu Sato		
Main Theme of the Subject	The aim of this course is to help students cultivate the ability to organize an academic discipline by developing knowledge and experimental skills to conduct research projects as well as by improving peripheral science. Students are expected to cultivat		
Goal of the Subject	The goals of this course are to Obtain the highly advanced knowledge and skills for research experiments.Acquire communication and discussion skills in English by disseminating research findings to the world.Cultivate research leadership for undergraduat		
Contents of the Subject /Subject Plan	Students will belong to one of the following labs and do chemical research provided by a supervisor in each lab. Field of Physical Chemistry: Quantum Functionality Materials, Molecular Physical Chemistry, Photophysical Chemistry, Biophysical Chemistry Field of Organic Chemistry: Synthetic Organic Chemistry, Molecular Conversion, Physical Organic Chemistry, Organic Reaction Chemistry, Fine Organic Chemistry Field of Inorganic Chemistry: Advanced Analytical Chemistry, Bio-functional Molecular Design, Hybrid Molecular Chemistry, Function Chemistry Students are expected to (1) Set experimental plans on the basis of the research projects provided by their supervisors. Students are also encouraged to give younger students guidance in the study based on the research plan. (2) Understand the background and significance of the research projects by online information retrieval. Students will also be able to extend the research project. (3) Be able to summarize the research results and present them at at domestic and international meetings. (4) Acquire skills necessary for preparation and submission of research papers in scientific journals. (5) Pass cross-sectional research proposals (proposal defense).		
Preparation and Review	To be announced separately.		
Evaluation Method	Grading will be based on assessment of a performance to the research subjects, publishing capability of the studies, and research leadership for undergraduate and Master's course students. Students must present their research results in the scientific me		
Comments to Students	To be announced separately.		
Teaching Materials	Students are required to use specialized books and academic journals, which are selected by themselves, supervisors, and lab's members.		
Remarks1			

Subject Code	SD23020013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D2)		
Subject Number	SBARC2801		
Credit(s)	3 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Toshiyuki Moriuchi, Yoshio Teki, Tomoyuki Yatsuhashi, Eiko Mieda, Ken-ichi Yuyama, Yasuyuki Tsuboi, Yoshinosuke Usuki, Daisuke Shiomi, Yutaka Amao, Hiroshi Nakajima, Harukazu Yoshino, Satoshi Shinoda, Kazuo Toyota, Tetsuya Satoh, Masumi Itazaki, Ritsuko Fujii, Takanori Nishioka, Kenji Sakota, Hiroyuki Miyake, Ikuko Miyahara, Chie Hosokawa, Yoshimitsu Tachi, Masatoshi Kozaki, Tetsuro Shinada, Takahiro Nishimura, Yoshiki Morimoto, Atsushi Nakayama, Kazuhiko Sakaguchi, Keisuke Nishikawa, Kazunobu Sato		
Main Theme of the Subject	The aim of this course is to help students cultivate the ability to organize an academic discipline by developing knowledge and experimental skills to conduct research projects as well as by improving peripheral science. Students are expected to cultivat		
Goal of the Subject	The goals of this course are to Obtain the highly advanced knowledge and skills for research experiments.Acquire communication and discussion skills in English by disseminating research findings to the world.Cultivate research leadership for undergraduat		
Contents of the Subject /Subject Plan	Students will belong to one of the following labs and do chemical research provided by a supervisor in each lab. Field of Physical Chemistry: Quantum Functionality Materials, Molecular Physical Chemistry, Photophysical Chemistry, Biophysical Chemistry Field of Organic Chemistry: Synthetic Organic Chemistry, Molecular Conversion, Physical Organic Chemistry, Organic Reaction Chemistry, Fine Organic Chemistry Field of Inorganic Chemistry: Advanced Analytical Chemistry, Bio-functional Molecular Design, Hybrid Molecular Chemistry, Function Chemistry Students are expected to (1) Set experimental plans on the basis of the research projects provided by their supervisors. Students are also encouraged to give younger students guidance in the study based on the research plan. (2) Understand the background and significance of the research projects by online information retrieval. Students will also be able to extend the research project. (3) Be able to summarize the research results and present them at at domestic and international meetings. (4) Acquire skills necessary for preparation and submission of research papers in scientific journals. (5) Pass cross-sectional research proposals (proposal defense).		
Preparation and Review	To be announced separately.		
Evaluation Method	Grading will be based on assessment of a performance to the research subjects, publishing capability of the studies, and research leadership for undergraduate and Master's course students. Students must present their research results in the scientific me		
Comments to Students	To be announced separately.		
Teaching Materials	Students are required to use specialized books and academic journals, which are selected by themselves, supervisors, and lab's members.		
Remarks1			

Subject Code	SD23030013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D3)		
Subject Number	SBARC3901		
Credit(s)	2 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Toshiyuki Moriuchi,Yoshio Teki,Tomoyuki Yatsuhashi,Eiko Mieda,Ken-ichi Yuyama,Yasuyuki Tsuboi,Yoshinosuke Usuki,Daisuke Shiomi,Yutaka Amao,Hiroshi Nakajima,Harukazu Yoshino,Satoshi Shinoda,Kazuo Toyota,Masazumi Fujiwara,Tetsuya Satoh,Masumi Itazaki,Ritsuko Fujii,Takanori Nishioka,Kenji Sakota,Hiroyuki Miyake,Ikuko Miyahara,Chie Hosokawa,Yoshimitsu Tachi,Masatoshi Kozaki,Tetsuro Shinada,Takahiro Nishimura,Yoshiki Morimoto,Atsushi Nakayama,Kazuhiko Sakaguchi,Keisuke Nishikawa,Kazunobu Sato		
Main Theme of the Subject	The aim of this course is to help students cultivate the ability to organize an academic discipline by developing knowledge and experimental skills to conduct research projects as well as by improving peripheral science. Students are expected to cultivat		
Goal of the Subject	The goals of this course are to Obtain the highly advanced knowledge and skills for research experiments.Acquire communication and discussion skills in English by disseminating research findings to the world.Cultivate research leadership for undergraduat		
Contents of the Subject /Subject Plan	Students will belong to one of the following labs and do chemical research provided by a supervisor in each lab. Field of Physical Chemistry: Quantum Functionality Materials, Molecular Physical Chemistry, Photophysical Chemistry, Biophysical Chemistry Field of Organic Chemistry: Synthetic Organic Chemistry, Molecular Conversion, Physical Organic Chemistry, Organic Reaction Chemistry, Fine Organic Chemistry Field of Inorganic Chemistry: Advanced Analytical Chemistry, Bio-functional Molecular Design, Hybrid Molecular Chemistry, Function Chemistry Students are expected to (1) Set experimental plans on the basis of the research projects provided by their supervisors. Students are also encouraged to give younger students guidance in the study based on the research plan. (2) Understand the background and significance of the research projects by online information retrieval. Students will also be able to extend the research project. (3) Be able to summarize the research results and present them at at domestic and international meetings. (4) Acquire skills necessary for preparation and submission of research papers in scientific journals. (5) Pass cross-sectional research proposals (proposal defense).		
Preparation and Review	To be announced separately.		
Evaluation Method	Grading will be based on assessment of a performance to the research subjects, publishing capability of the studies, and research leadership for undergraduate and Master's course students. Students must present their research results in the scientific me		
Comments to Students	To be announced separately.		
Teaching Materials	Students are required to use specialized books and academic journals, which are selected by themselves, supervisors, and lab's members.		
Remarks1			

Subject Code	SD31010013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Science of Biomolecules		
Subject Number	SCB011702		
Credit(s)	2 Credits	Teaching Method	Seminar
Lecturer(s)	Mitsumasa Koyanagi,Kazuyuki Wakabayashi,Toshihiro Yamada,Makoto Miyata,Masanori Koda,Taro Fuchikawa,Tohru Komiya,Yoshihiro Yamaguchi,Kazuo Ito,Ken-ichi Fujita,Akihisa Terakita,Toshiro Mizuno,Kouichi Soga,Satoshi Nanami,Satoshi Awata,Akira Itoh,Chiyomi Uematsu,Satoshi Koi,Shinsuke Goto,Ryoji Masui,Taro Nakamura		
Main Theme of the Subject	Current advances in sciences of biomolecules are studied and discussed.		
Goal of the Subject	Students will deepen their understanding on sciences of biomolecules and make use of obtained knowledge for own research project.		
Contents of the Subject /Subject Plan	Details are notified from each faculty.		
Preparation and Review	To be announced separately.		
Evaluation Method	By class attendance, report submission, and attitude towards debate and discussion.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD31020013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Functional Biosciences		
Subject Number	SCB021702		
Credit(s)	2 Credits	Teaching Method	Seminar
Lecturer(s)	Mitsumasa Koyanagi,Kazuyuki Wakabayashi,Toshihiro Yamada,Makoto Miyata,Masanori Koda,Taro Fuchikawa,Tohru Komiya,Yoshihiro Yamaguchi,Kazuo Ito,Ken-ichi Fujita,Akihisa Terakita,Toshiro Mizuno,Kouichi Soga,Satoshi Nanami,Satoshi Awata,Akira Itoh,Chiyomi Uematsu,Satoshi Koi,Shinsuke Goto,Ryoji Masui,Taro Nakamura		
Main Theme of the Subject	Current advances in sciences of molecular biofunctions are studied and discussed.		
Goal of the Subject	Students will deepen their understanding on sciences of molecular biofunctions and make use of obtained knowledge for own research project.		
Contents of the Subject /Subject Plan	Details are notified from each faculty.		
Preparation and Review	To be announced separately.		
Evaluation Method	By class attendance, report submission, and attitude towards debate and discussion.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD31030013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Functional Biology of Natural History		
Subject Number	SCB031702		
Credit(s)	2 Credits	Teaching Method	Seminar
Lecturer(s)	Mitsumasa Koyanagi,Kazuyuki Wakabayashi,Toshihiro Yamada,Makoto Miyata,Masanori Koda,Taro Fuchikawa,Tohru Komiya,Yoshihiro Yamaguchi,Kazuo Ito,Ken-ichi Fujita,Akihisa Terakita,Toshiro Mizuno,Kouichi Soga,Satoshi Nanami,Satoshi Awata,Akira Itoh,Chiyomi Uematsu,Satoshi Koi,Shinsuke Goto,Ryoji Masui,Taro Nakamura		
Main Theme of the Subject	Current advances in sciences of functional biology of natural history are studied and discussed.		
Goal of the Subject	Students will deepen their understanding on sciences of functional biology of natural history and make use of obtained knowledge for own research project.		
Contents of the Subject /Subject Plan	Details are notified from each faculty.		
Preparation and Review	To be announced separately.		
Evaluation Method	By class attendance, report submission, and attitude towards debate and discussion.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD32010013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Environmental Geosciences		
Subject Number	SCG021701		
Credit(s)	2 Credits	Teaching Method	Seminar
Lecturer(s)	Satoru Yamaguchi,Shinji Masumoto,Tatsuya Nemoto,Tsuyoshi Haraguchi,Muneki Mitamura,Jun Inoue		
Main Theme of the Subject	In the class, the student will study research topics in each of the fields in Environmental Geosciences.		
Goal of the Subject	After completion of the class, the student is expected to have developed a profound knowledge in a specific topic in each of the fields.		
Contents of the Subject /Subject Plan	Details will be given by the respective professors.		
Preparation and Review	Details will be given by the respective professors.		
Evaluation Method	Attendance, reports, and discussion and presentation in the seminar		
Comments to Students	Details will be given by the respective professors.		
Teaching Materials	Details will be given by the respective professors.		
Remarks1			

Subject Code	SD32020013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Seminar in Earth Evolution Sciences		
Subject Number	SCG031701		
Credit(s)	2 Credits	Teaching Method	Seminar
Lecturer(s)	Natsuko Adachi,Keiji Shinoda,Takamoto Okudaira,Tetsuya Sakuyama,Harue Masuda,Yoichi Ezaki		
Main Theme of the Subject	Learn a wide range of recent research results and developments in various fields of Earth Evolution Chemistry through seminar classes by multiple academic staffs		
Goal of the Subject	Understand recent research results and development situation in each field of Earth Evolution Chemistry.		
Contents of the Subject /Subject Plan	Details will be shown later by each academic staff.		
Preparation and Review	Details will be shown later by each academic staff.		
Evaluation Method	Comprehensively evaluate attendance, reports and discussions at the seminar.		
Comments to Students	Details will be shown later.		
Teaching Materials	Details will be shown later by each academic staff.		
Remarks1			

Subject Code	SD33010013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D1 Biology)		
Subject Number			
Credit(s)	3 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Mitsumasa Koyanagi,Kazuyuki Wakabayashi,Toshihiro Yamada,Makoto Miyata,Masanori Koda,Taro Fuchikawa,Tohru Komiya,Yoshihiro Yamaguchi,Kazuo Ito,Ken-ichi Fujita,Akihisa Terakita,Toshiro Mizuno,Kouichi Soga,Satoshi Nanami,Satoshi Awata,Akira Itoh,Chiyomi Uematsu,Satoshi Koi,Shinsuke Goto,Ryoji Masui,Taro Nakamura		
Main Theme of the Subject	Based on knowledge on biology, students will perform own research project and finally make a doctoral dissertation.		
Goal of the Subject	Students are expected to obtain knowledge and skills those are required to plan and perform own research project. Furthermore, students will develop critical ways in evaluating scientific subjects.		
Contents of the Subject /Subject Plan	(1) Establishment of the theme of own research project, (2) Planning of the research, (3) Finding suitable experimental techniques including fieldwork activities for the research, (4) Analysis and evaluation of obtained results, (5) Presentation of obtained results, (6) Preparation (how to write) of scientific articles including a doctoral dissertation.		
Preparation and Review	To be announced separately.		
Evaluation Method	By the progress in own research project.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD33010023	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D1 Geosciences)		
Subject Number			
Credit(s)	3 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Yoichi Ezaki, Natsuko Adachi, Satoru Yamaguchi, Shinji Masumoto, Tatsuya Nemoto, Keiji Shinoda, Takamoto Okudaira, Tetsuya Sakuyama, Harue Masuda, Tsuyoshi Haraguchi, Muneki Mitamura, Jun Inoue		
Main Theme of the Subject	Using the systematic knowledge and techniques on the theory and experiments in biology and geology, students will practice the following. To set up specific research subjects on your own To plan research projects To conduct experiments and field sur		
Goal of the Subject	In order to found the cornerstone of development in future study, students acquire the ability to discover and solve research subjects in biology and geology on his own. In addition, students acquire the ability to transmit their research results internat		
Contents of the Subject /Subject Plan	Students are advised to arrange research tasks, design research plans, experiments and field surveys, to interpret and summarize research results, and to complete the doctoral dissertation. Also, academic staffs will instruct students about conference presentations on research results, manuscript creation and posting it to academic journals.		
Preparation and Review	Details will be shown later by each academic staff. Also, depending on the each research topic and its progress, students are required to find necessary textbooks and papers on their own.		
Evaluation Method	Students will be comprehensively evaluated by research result, research attitude, and presentation content.		
Comments to Students	Be sure to join "Student Education Research Disaster Accident Insurance (Gakken)" and incidental liability (incidental liability) ".		
Teaching Materials	Details will be shown later by each academic staff		
Remarks1			

Subject Code	SD33020013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D2 Biology)		
Subject Number			
Credit(s)	3 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Mitsumasa Koyanagi,Kazuyuki Wakabayashi,Toshihiro Yamada,Makoto Miyata,Masanori Koda,Taro Fuchikawa,Tohru Komiya,Yoshihiro Yamaguchi,Kazuo Ito,Ken-ichi Fujita,Akihisa Terakita,Toshiro Mizuno,Kouichi Soga,Satoshi Nanami,Satoshi Awata,Akira Itoh,Chiyomi Uematsu,Satoshi Koi,Shinsuke Goto,Ryoji Masui,Taro Nakamura		
Main Theme of the Subject	Based on knowledge on biology, students will perform own research project and finally make a doctoral dissertation.		
Goal of the Subject	Students are expected to obtain knowledge and skills those are required to plan and perform own research project. Furthermore, students will develop critical ways in evaluating scientific subjects.		
Contents of the Subject /Subject Plan	(1) Establishment of the theme of own research project, (2) Planning of the research, (3) Finding suitable experimental techniques including fieldwork activities for the research, (4) Analysis and evaluation of obtained results, (5) Presentation of obtained results, (6) Preparation (how to write) of scientific articles including a doctoral dissertation.		
Preparation and Review	To be announced separately.		
Evaluation Method	By the progress in own research project.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD33020023	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D2 Geosciences)		
Subject Number			
Credit(s)	3 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Yoichi Ezaki, Natsuko Adachi, Satoru Yamaguchi, Shinji Masumoto, Tatsuya Nemoto, Keiji Shinoda, Takamoto Okudaira, Tetsuya Sakuyama, Harue Masuda, Tsuyoshi Haraguchi, Muneki Mitamura, Jun Inoue		
Main Theme of the Subject	Using the systematic knowledge and techniques on the theory and experiments in each field of biology and geology, students will practice the following To set up specific research subjects on your own To plan research projects To conduct experiments		
Goal of the Subject	In order to found the cornerstone of development in future study, students acquire the ability to discover and solve research subjects in biology and geology on his own. In addition, students acquire the ability to transmit their research results internat		
Contents of the Subject /Subject Plan	Students are advised to arrange research tasks, design research plans, experiments and field surveys, to interpret and summarize research results, and to complete the doctoral dissertation. Also, academic staffs will instruct students about conference presentations on research results, manuscript creation and posting it to academic journals.		
Preparation and Review	Details will be shown later by each academic staff. Also, depending on the each research topic and its progress, students are required to find necessary textbooks and papers on their own.		
Evaluation Method	Students will be comprehensively evaluated by research result, research attitude, and presentation content.		
Comments to Students	Be sure to join "Student Education Research Disaster Accident Insurance (Gakken)" and incidental liability (incidental liability) ".		
Teaching Materials	Details will be shown later by each academic staff		
Remarks1			

Subject Code	SD33030013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D3 Biology)		
Subject Number			
Credit(s)	2 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Mitsumasa Koyanagi,Kazuyuki Wakabayashi,Toshihiro Yamada,Makoto Miyata,Masanori Koda,Taro Fuchikawa,Tohru Komiya,Yoshihiro Yamaguchi,Kazuo Ito,Ken-ichi Fujita,Akihisa Terakita,Toshiro Mizuno,Kouichi Soga,Satoshi Nanami,Satoshi Awata,Akira Itoh,Chiyomi Uematsu,Satoshi Koi,Shinsuke Goto,Ryoji Masui,Taro Nakamura		
Main Theme of the Subject	Based on knowledge on biology, students will perform own research project and finally make a doctoral dissertation.		
Goal of the Subject	Students are expected to obtain knowledge and skills those are required to plan and perform own research project. Furthermore, students will develop critical ways in evaluating scientific subjects.		
Contents of the Subject /Subject Plan	(1) Establishment of the theme of own research project, (2) Planning of the research, (3) Finding suitable experimental techniques including fieldwork activities for the research, (4) Analysis and evaluation of obtained results, (5) Presentation of obtained results, (6) Preparation (how to write) of scientific articles including a doctoral dissertation.		
Preparation and Review	To be announced separately.		
Evaluation Method	By the progress in own research project.		
Comments to Students	To be announced separately.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD33030023	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	Advanced Research Course for Doctoral Thesis of Science (D3 Geosciences)		
Subject Number			
Credit(s)	2 Credits	Teaching Method	Seminar／Laboratory
Lecturer(s)	Yoichi Ezaki, Natsuko Adachi, Satoru Yamaguchi, Shinji Masumoto, Tatsuya Nemoto, Keiji Shinoda, Takamoto Okudaira, Tetsuya Sakuyama, Harue Masuda, Tsuyoshi Haraguchi, Muneki Mitamura, Jun Inoue		
Main Theme of the Subject	Using the systematic knowledge and techniques on the theory and experiments in each field of biology and geology, students will practice the following To set up specific research subjects on your own To plan research projects To conduct experiments		
Goal of the Subject	In order to found the cornerstone of development in future study, students acquire the ability to discover and solve research subjects in biology and geology on his own. In addition, students acquire the ability to transmit their research results internat		
Contents of the Subject /Subject Plan	Students are advised to arrange research tasks, design research plans, experiments and field surveys, to interpret and summarize research results, and to complete the doctoral dissertation. Also, academic staffs will instruct students about conference presentations on research results, manuscript creation and posting it to academic journals.		
Preparation and Review	Details will be shown later by each academic staff. Also, depending on the each research topic and its progress, students are required to find necessary textbooks and papers on their own.		
Evaluation Method	Students will be comprehensively evaluated by research result, research attitude, and presentation content.		
Comments to Students	Be sure to join "Student Education Research Disaster Accident Insurance (Gakken)" and incidental liability (incidental liability) ".		
Teaching Materials	Details will be shown later by each academic staff		
Remarks1			

Subject Code	SD40030013	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	International Advanced Research Course for Doctoral Thesis of Science 3 (Mathmatics)		
Subject Number			
Credit(s)	1 Credit	Teaching Method	Lecture
Lecturer(s)	Mitsuyasu Hashimoto,Hirotaka Akiyoshi,Masato Okado,Masamichi Yoshida,Hiroshi Tamaru,Shunsuke Yamana,Ken Abe,Hideyuki Ishi,Futoshi Takahashi,Shin Kato, Hideaki Sunagawa,Takamichi Sano,Masaaki Furusawa,Hyohe Miyachi,Sachiko Hamano,Yoshihiro Ohnita,Takayuki Koike		
Main Theme of the Subject	International research experience through research activities and scholarly exchanges abroad.		
Goal of the Subject	Each student is expected not only to make advancements in research towards the doctoral thesis, but also to participate in international scientific communities.		
Contents of the Subject /Subject Plan	Each student will be advised on where to go, what to do there, and also on how to give a research presentation in English, by his or her adviser. After returning to Japan, he or she is expected to present a research report.		
Preparation and Review	To be assigned individually. Also each student is expected to seek research problems actively.		
Evaluation Method	The grade is assigned based on the advancements in research and also on the improvements of the skill in research presentation and scientific communication in the international setting.		
Comments to Students	It is required to consult the adviser before registering this course.		
Teaching Materials	To be assigned later.		
Remarks1			

Subject Code	SD40030023	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	International Advanced Research Course for Doctoral Thesis of Science 3 (Physics)		
Subject Number			
Credit(s)	1 Credit	Teaching Method	Lecture
Lecturer(s)	Eiichi Nakano, Hiroyuki Sakuragi, Nobuyuki Kanda, Katsuichi Kanemoto, Sanefumi Moriyama, Nobuhito Maru, Hiroshi Itoyama, Hideo Yano, Masaki Arima, Shin Inouye, Osamu Ishikawa, Akira Oguri, Kazuhiro Yamamoto, Ken Obara, Masako Iwasaki, Hiromitsu Takeuchi, Mitsuru Sugisaki, Yoshihiro Seiya, Yousuke Itoh, Ken-ichi Nakao, Yunori Nishikawa, Hideki Ishihara, Yoshiki Tsunesada, Shoichi Ogio, Makoto Tsubota		
Main Theme of the Subject	Students are expected to experience research in international fields through research activities and academic exchanges outside Japan.		
Goal of the Subject	Through research activities outside Japan, we aim to make progress in research plans of the Doctoral thesis, to achieve research goals, and to participate in international scientific communities of students and researchers in each research field.		
Contents of the Subject /Subject Plan	The university or research institute to be dispatched and research plans will be determined through discussion with the supervisor. Encourage students to make research proposal and plan and to acquire the presentation of research (in English) or experimental skills. After returning to Japan, research results are to be reported.		
Preparation and Review	To be assigned by faculty. In addition, students are encouraged to make research subjects by oneself, and to study actively the subject before and after the project.		
Evaluation Method	Grading will be given based on research results and progress of research. Improvement of overseas presentation and communication skills is also confirmed and evaluated.		
Comments to Students	Regarding international research plans, etc., consult with the supervisor before registering for the course.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD40030033	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	International Advanced Research Course for Doctoral Thesis of Science 3		
Subject Number			
Credit(s)	1 Credit	Teaching Method	Lecture
Lecturer(s)	Toshiyuki Moriuchi, Yoshio Teki, Tomoyuki Yatsuhashi, Eiko Mieda, Ken-ichi Yuyama, Yasuyuki Tsuboi, Yoshinosuke Usuki, Daisuke Shiomi, Yutaka Amao, Hiroshi Nakajima, Harukazu Yoshino, Satoshi Shinoda, Kazuo Toyota, Tetsuya Satoh, Masumi Itazaki, Ritsuko Fujii, Takanori Nishioka, Kenji Sakota, Hiroyuki Miyake, Ikuko Miyahara, Chie Hosokawa, Yoshimitsu Tachi, Masatoshi Kozaki, Tetsuro Shinada, Takahiro Nishimura, Yoshiki Morimoto, Kazuhiko Sakaguchi, Keisuke Nishikawa, Kazunobu Sato		
Main Theme of the Subject	The aim of this course is to provide an opportunity for students to gain research experience abroad.		
Goal of the Subject	The goals of this course are to (1) Develop and achieve a dissertation research project of the doctoral course by the research experience abroad. (2) Join the scientific community of overseas students and researchers in the research field.		
Contents of the Subject /Subject Plan	Students will be advised about how to select the overseas university and research institute, how to plan a research project and experimental procedures, how to present the research results in English. Students are required to provide the research reports.		
Preparation and Review	To be announced separately.		
Evaluation Method	Grading will be based on assessment of the research progress and results. Your grade will also be decided based on the presentation and communication skills abroad.		
Comments to Students	Before registration of the course, students should be approved by their supervisors.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD40030043	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	International Advanced Research Course for Doctoral Thesis of Science 3 (Biology)		
Subject Number			
Credit(s)	1 Credit	Teaching Method	Lecture
Lecturer(s)	Mitsumasa Koyanagi,Kazuyuki Wakabayashi,Toshihiro Yamada,Makoto Miyata,Masanori Koda,Taro Fuchikawa,Tohru Komiya,Yoshihiro Yamaguchi,Kazuo Ito,Ken-ichi Fujita,Akihisa Terakita,Toshiro Mizuno,Kouichi Soga,Satoshi Nanami,Satoshi Awata,Akira Itoh,Chiyomi Uematsu,Satoshi Koi,Shinsuke Goto,Ryoji Masui,Taro Nakamura		
Main Theme of the Subject	Students will perform own research project and have the presentation abroad. Students will acquire a worthwhile educational experience abroad.		
Goal of the Subject	Students are expected to learn manner for performing own research project abroad and also to develop ability to communicate with foreigner.		
Contents of the Subject /Subject Plan	The course consists of three steps. (1) Before study abroad: students will discuss with faculties about the theme of own research project and the potential candidate institute abroad for the study. Students will learn skills to communicate with foreign researchers. (2) Study abroad: students will perform own research project and have the presentation abroad. (3) After study abroad: when students will return to Japan, they make a presentation of the results and experiences of the study abroad.		
Preparation and Review	To be announced separately.		
Evaluation Method	By the progress in own research project and the quality of the presentation.		
Comments to Students	Students should consult with faculties about the program of study abroad in advance.		
Teaching Materials	To be announced separately.		
Remarks1			

Subject Code	SD40030053	Offering Academic Year/Semester	2021 First Semester 2021 Second Semester
Subject Name(English)	International Advanced Research Course for Doctoral Thesis of Science 3 (Geosiences)		
Subject Number			
Credit(s)	1 Credit	Teaching Method	Lecture
Lecturer(s)	Yoichi Ezaki, Natsuko Adachi, Satoru Yamaguchi, Shinji Masumoto, Tatsuya Nemoto, Keiji Shinoda, Takamoto Okudaira, Tetsuya Sakuyama, Harue Masuda, Tsuyoshi Haraguchi, Muneki Mitamura, Jun Inoue		
Main Theme of the Subject	Through research activities and academic exchanges abroad, to have experience in international field.		
Goal of the Subject	Through overseas research activities, this course aims to enable students to advance the research goals of the doctoral thesis, to achieve research goals, and to participate in the scientific community of overseas students and researchers in the research		
Contents of the Subject /Subject Plan	Academic staffs assist each student to find the universities or research institutes that fit his/her research topics, to set up research plan, and to present research or experimental results in English. After returning home, students are required to report their research activities abroad.		
Preparation and Review	Details will be shown later by each academic staff. Students are required to discover issues on their own and learn materials in advance and afterwards.		
Evaluation Method	Students are graded according to research results and research progress. Improvement of presentation and communication skills in English will also be taken into account.		
Comments to Students	Students are required to consult with their supervisor before registering about their research plans.		
Teaching Materials	Details will be shown later by each academic staff.		
Remarks1			