

For entrants in AY 2021

Appended Form 1

Specifications for Major Program

Name of School (Program) [School of Science (Department of Earth and Planetary Systems Science)]

Program name (Japanese)	#+ h " ' « , ÒÚÉβϕ ÚÒ
(English)	Earth and Planetary Systems Science
1. Degree to be obtained: Bachelor of Science	
2. Overview	
<p>The School of Science at Hiroshima University aims to educate students to steadily learn the basics of natural science, and to foster acute sensitivity for exploring truth, in order to provide professionals with an integrated ability to make judgments based on broad and deep intelligence.</p> <p>The Earth and Planetary Systems Science Program aims to provide people of talent who have their intellectual base in earth and planetary science and are capable of working as (1) researchers, (2) engineers, and (3) educators in various fields in society. For example, students are expected to become (1) faculty members at a college or researchers in another research institute, (2) civil engineering consultants and engineers in a company related to natural resources, energy, disaster prevention, and information technology, and (3) science teachers in junior and/or senior high schools. In order to educate students to acquire knowledge, specialized skills, and analytic capabilities that cover the wide field of earth and planetary science, and to provide subjects that meet the various interests and characteristics of each student, the program consists of field exercises and graduation research in addition to lectures, practices, and exercises provided as indoor classes.</p> <p>In this program, students study, from the basics to the application, three categories of subjects required for advanced research in earth and planetary systems science, i.e. (1) minerals, rocks, and ores geology; (2) the solar system, the earth, and the emergence and evolution of life; and (3) the motion mechanisms and internal structure of the solid part of the earth and planets. This program is composed as a bottom-up process that works on a year by year basis to enable students to study earth and planetary science from its basics and finally become capable of the application and practice required for state-of-the-art research.</p>	
3. Diploma policy (policy for awarding degrees and goal of the program)	
<p>This program aims to educate students to become people of talent who can work actively, with an international point of view, as researchers, engineers, and educators in fields related to earth and planetary systems science, in which various areas of earth and planetary science are amalgamated. This program will award the degree bachelor of science to students who have acquired the capabilities described below and earned the required credits defined for the educational course:</p> <ul style="list-style-type: none">í The basic knowledge of mathematics, physics, chemistry, biology, and earth and planetary science required for studying a wide variety of areas of earth and planetary systems science;í The basic skills in English and information processing required for studying a wide variety of areas of earth and	

planetary systems science;

- í The capability for reading academic documents related to earth and planetary science in Japanese and English, and understanding and examining structures and phenomena from the microscopic to the macroscopic level; and
- í The capability for performing specialized research related to earth and planetary systems science, organizing the results into a thesis, and presenting it in English.

4. Curriculum policy (policy for organizing and implementing the curriculum)

This program has been designed to educate students through the study, first of all, of the wide range of basics in earth and planetary systems science that form a fusion of the various areas of the field, before advancing to further specialized areas.

- í In the first year, students study subjects to learn a wide range of the basics of mathematics, physics, chemistry, biology, and earth and planetary science in liberal arts education and specialized education. In addition to this, they

their first and second years to understand basics of those subjects.

Requirements for when a student in a department other than the Department of Earth and Planetary Systems Science chooses this program are separately stipulated based on the provisions regarding transfer between schools/departments.

6. Obtainable qualifications

1: Educational personnel certification

(1) Type 1 License for Junior High School Teacher (Science)

(2) Type 1 License for High School Teacher (Science)

2: Curator license

3: Assistant registered surveyor

7. Class subjects and their contents

* For the class subjects, refer to the subject table in Attachment 1.

* For the details of the class subjects, refer to the syllabus that is published for each academic year.

8. Academic achievement

The evaluation criteria are specified for each evaluation item for academic achievement, and the level of achievement against the criteria is designated at the end of the semester.

The evaluation score for each evaluation item is converted to a numerical value (S = 4, A = 3, B = 2, and C = 1) and the evaluation standard for academic achievement, from when the student entered the university to the end of the last semester, is determined using these values while applying weightings. The evaluation standards consist of three levels, i.e. Excellent, Very Good, and Good.

Evaluation of academic achievement	Converted value
S (90 or more points)	4
A (80 – 89 points)	3
B (70 – 79 points)	2
C (60 – 69 points)	1

Academic achievement	Evaluation criteria
Excellent	3.00 – 4.00
Very Good	2.00 – 2.99
Good	1.00 – 1.99

* Refer to the relationship between evaluation items and evaluation criteria described in Attachment 2.

* Refer to the relationship between evaluation items and class subjects described in Attachment 3.

* Refer to the curriculum map in Attachment 4.

9>. Graduation thesis (graduation research) (meaning, student allocation, timing, etc.)

1. Meaning

To demonstrate achievement in the bachelor's course as a whole.

2. Timing of student allocation

At the beginning of the fourth academic year. To be allocated to a laboratory, students must satisfy the "Conditions for Starting Graduation Research." For the details, refer to Study Guidance for the Earth and Planetary Science Program in the "Students Handbook" (received when the student enters the university).

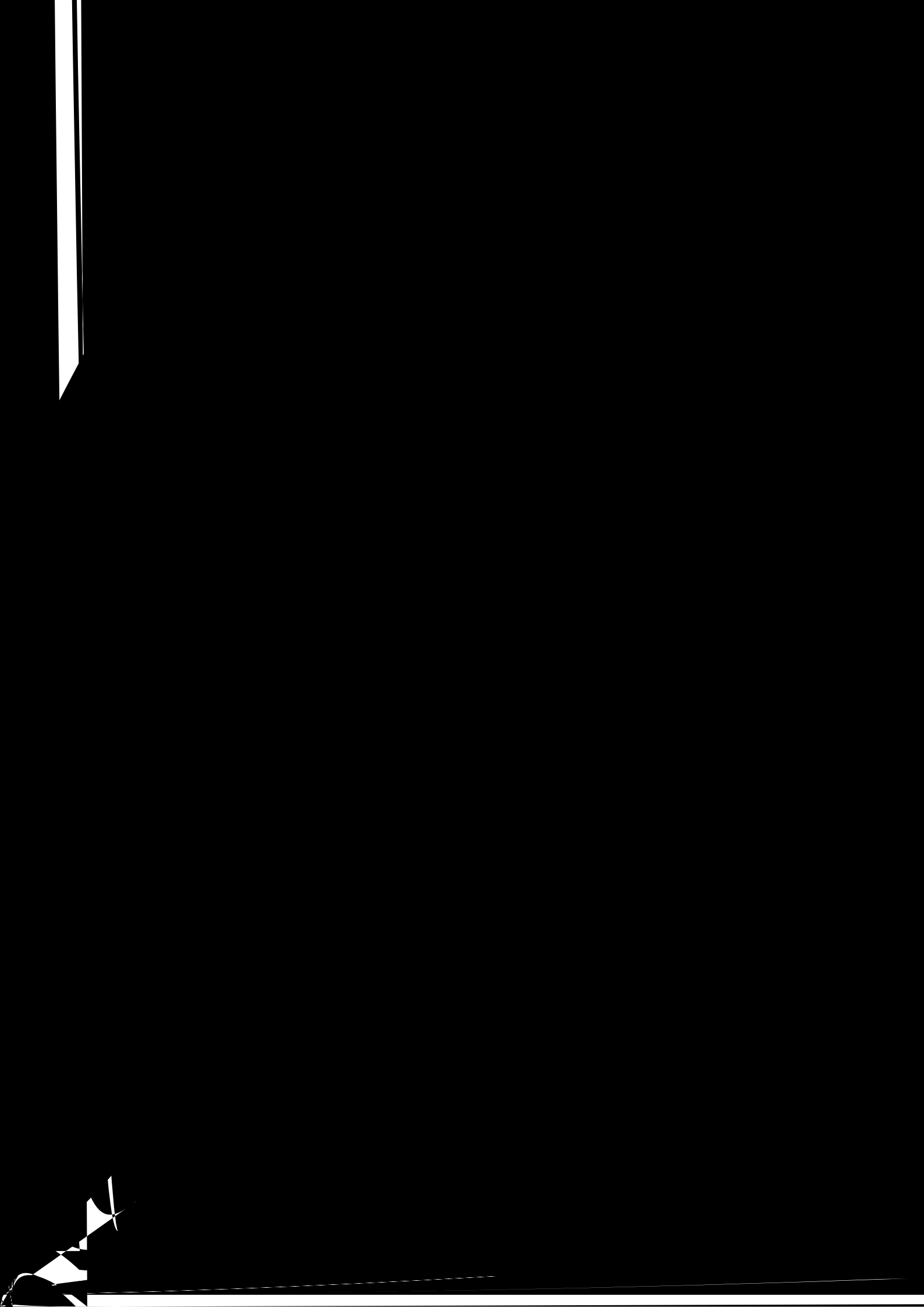
3. Method of student allocation

If the number of students who wish to be allocated to each member of faculty varies significantly, the faculty member to which students are allocated for graduation research is determined based on their academic score at the end of the third academic year.

10>, Responsibility

(1) Responsibility for PDCA (plan, do, check, and act) cycle

If the number of students who wish to be allocated to each member of faculty varies significantly, the faculty member to which students are allocated for graduation research is determined based on their academic score at the end of the third academic year.



Academic achievements of Earth and Planetary Systems Science Program

Relationships between the evaluation items and evaluation criteria

Academic achievements		Evaluation criteria			
Evaluation items		Excellent	Very Good	Good	
Knowledge and Understanding	(1)	To acquire knowledge and understanding about the origin and development of the solar system and the earth.	To be able to very thoroughly understand technical knowledge about the birth and development of the solar system and the earth.	To be able to thoroughly understand technical knowledge about the birth and development of the solar system and the earth.	To be able to understand technical knowledge about the birth and development of the solar system and the earth.
	(2)	To acquire understanding and technical knowledge about earthquake phenomena and the earth's internal structure.	To be able to very thoroughly understand technical knowledge about earthquake phenomena and the earth's internal structure.	To be able to thoroughly understand technical knowledge about earthquake phenomena and the earth's internal structure.	To be able to understand technical knowledge about earthquake phenomena and the earth's internal structure.
	(3)	To acquire understanding and technical knowledge about the progress of Earth surface environment and biosphere.	To be able to thoroughly understand technical knowledge about the progress of supracrustal environment and biosphere.	To be able to understand technical knowledge about the progress of the supracrustal environment and biosphere.	To be able to understand technical knowledge about the progress of the supracrustal environment and biosphere.
	(4)	Being able to collect materials by basic ways. Being able to find issues from specific phenomena and explain them. Being able to make clearly arguable discussion and effective presentation.	Being able to collect materials by basic ways, find issues from specific phenomena and explain them and to make clearly arguable discussion and effective presentation very superbly.	Being able to collect materials by basic ways, find issues from specific phenomena and explain them and to make clearly arguable discussion and effective presentation superbly.	Being able to collect materials by basic ways, find issues from specific phenomena and explain them and to make clearly arguable discussion and effective presentation.
	(5)	To be able to express opinions by thinking of peace from multiple perspectives, including understanding various causes and complex aspects which hinder the realization of peace, as well as conflicts between ideal and reality. Also, to be able to explain one's knowledge.	To be able to express opinions by thinking of peace from multiple perspectives, including understanding various causes and complex aspects which hinder the realization of peace, as well as conflicts between ideal and reality. Also, to be able to explain one's knowledge very well.	To be able to express opinions by thinking of peace from multiple perspectives, including understanding various causes and complex aspects which hinder the realization of peace, as well as conflicts between ideal and reality. Also, to be able to explain one's knowledge well.	To be able to express opinions by thinking of peace from multiple perspectives, including understanding various causes and complex aspects which hinder the realization of peace, as well as conflicts between ideal and reality. Also, to be able to explain one's knowledge.
	(6)	To be able to explain historical or modern issues that human and society face (social structure and the way science should be, significance of intellectual activities, and significance of multicultural relations and coexistence with nature) from multiple perspective.	To be able to excellently explain historical or modern issues that human and society face (social structure and the way science should be, significance of intellectual activities, and significance of multicultural relations and coexistence with nature) from multiple perspective.	To be able to explain historical or modern issues that human and society face (social structure and the way science should be, significance of intellectual activities, and significance of multicultural relations and coexistence with nature) from multiple perspective in a good way.	To be able to explain historical or modern issues that human and society face (social structure and the way science should be, significance of intellectual activities, and significance of multicultural relations and coexistence with nature) from multiple perspective.
	(7)	Being able to explain the process of construction and development in each academic discipline. Being able to explain how each academic discipline relates to culture and society.	Being able to explain the process of construction and development of each academic discipline and very superbly explain the relationship between each academic discipline and culture and society.	Being able to explain the process of construction and development of each academic discipline and superbly explain the relationship between each academic discipline and culture and society.	Being able to explain the process of construction and development of each academic discipline and explain the relationship between each academic discipline and culture and society.

Academic achievements	Evaluation criteria		
Evaluation items	Excellent	Very Good	Good
<p>To acquire the ability to apply and develop the basic knowledge of earth and planetary science by organizing it.</p> <p>Reading related papers and acquiring the ability of understanding the contents.</p> <p>Verbal or written regular/daily communication can be carried out using foreign languages.</p> <p>Understand different languages and acquire the ability of understanding the contents well.</p>	<p>To be able to very thoroughly acquire the ability to apply and develop basic knowledge of earth and planetary science by organizing it.</p> <p>Being able to read related papers and acquire the ability of understanding the contents very well.</p> <p>Verbal or written regular/daily communication can be carried out using foreign languages.</p>	<p>To be able to thoroughly acquire the ability to apply and develop the basic knowledge of earth and planetary science by organizing it.</p> <p>Being able to read related papers and acquire the ability of understanding the contents well.</p> <p>Verbal or written regular/daily communication can be carried out using foreign languages.</p>	<p>To be able to acquire the ability to apply and develop basic knowledge of earth and planetary science by organizing it.</p> <p>Being able to read related papers and acquire the ability of understanding the contents well.</p>
(3)
(4)
(5)
(6)
(7)
(8)
(9)
(10)
(11)
(12)
(13)

Curriculum Map of Earth and Planetary Systems Science Program

Knowledge and Understanding



