

**Course List and Graduation Requirements for International Programs,
Automotive Engineering Program – School of Engineering (for Undergraduates Enrolled in October 2021)**
(Major : Electrical Engineering, Electronics, and Information Engineering)

Course Category		Course	Term	No of Credits	Compulsory	Credits			Minimum Requirement	
						Compulsory Elective	Elective			
Liberal Arts and Sciences Courses	Basic General Education Courses	First Year Seminar	First Year Seminar A	I	2	2			2	
		Language and Culture	Japanese/Languages except English	I, II	12	12			12	
		Health and Sports Science	Health and Sports Science: Lecture		I	2			2	
			Health and Sports Science: Practicum I		II	1			1	2
	Health and Sports Science: Practicum II			III	1			1		
	Basic Courses in Humanities and Social Sciences ★	History		II	2			2	4	
		Literature		I	2			2		
		Comparative Studies of Cultures		III	2			2		
		Introduction to Cultural Studies		II	2			2		
	Liberal Education Courses in Humanities and Social Sciences ★	Culture and Representation		II	2			2	4	
		Past and Present of Democracy		III	2			2		
		International Society of Globalization Age		I	2			2		
	Liberal Education Courses in Natural Sciences	Biotechnology		I	2			2	4	
		Modern Biology		II	2			2		
		Science of Materials		III	2			2		
	Liberal Education Courses in Interdisciplinary Fields ★	Exploration of Japan: From the Outside Looking Inside		II	2			2	2	
		Introduction to Career Development Theory		I	2			2		
		Preparedness for Imminent Natural Disasters		III	2			2		
		Thinking about Japanese Society in the 21st Century from Gender Perspectives		III	2			2		
		Special Lecture (Studium Generale I)		I	2			2		
		Special Lecture (Studium Generale II)		II	2			2		
		Special Lecture (Go in Japanese Culture)		III	1			1		
		Special Lecture (Summer Camp for General Academic Skills)		IV	2			2		
	Basic Courses in Natural Sciences	Calculus I		I	2	2			10	
		Calculus II		II	2	2				
		Linear Algebra I		I	2	2				
		Linear Algebra II		II	2	2				
		Complex Analysis		III	2	2				
		Fundamentals of Physics I		I	2	2			6	
		Fundamentals of Physics II		I	2	2				
		Fundamentals of Physics III		II	2	2				
		Fundamentals of Chemistry I		I	2	2			4	
		Fundamentals of Chemistry II		II	2	2				
		Fundamentals of Biology I		I	2			2	6	
		Fundamentals of Biology II		II	2			2		
		Fundamentals of Earth Science I		I	2			2		
Fundamentals of Earth Science II			II	2			2	1.5		
Laboratory in Physics			III	1.5	1.5					
Laboratory in Chemistry		II	1.5			1.5				
Sum for Liberal Arts and Sciences Courses						35.5	0	12	47.5	
Basic Specialized Courses	Compulsory Courses ①	Computer Software I		I	2	2			36.5	
		Mathematics I and Tutorial		III	4	4				
		Mathematics II and Tutorial		III	4	4				
		Analytical Dynamics and Tutorial		III	2.5	2.5				
		Electrical Circuits Engineering		III	2	2				
		Mechanics of Materials and Tutorial		III	3	3				
		Thermodynamics and Tutorial		III	2.5	2.5				
		Electronic Circuits		IV	2	2				
		Electricity and Magnetism		IV	2	2				
		Metallic and Ceramic Materials		IV	2	2				
		Fluid Mechanics I and Tutorial		IV	2.5	2.5				
		Vibration Engineering and Tutorial		IV	3	3				
		Control Engineering and Tutorial		V	3	3				
	Scientific Measurements		V	2	2					
	Elective Courses ②	Fundamental Physics Tutorial I a		I	1			1	6	
		Fundamental Physics Tutorial I b		I	1			1		
		Fundamental Physics Tutorial II a		II	1			1		
		Fundamental Physics Tutorial II b		II	1			1		
		Kinematics of Machines		III	2			2		
		Solid Mechanics		IV	2			2		
Automobile Chemical Systems I			V	2			2			
Material Processing		V	2			2				
Courses in Specialized Fields	Compulsory Courses ③	Introduction to Automotive Engineering		I	2	2			26	
		Computer Software II		IV	2	2				
		Introduction to Electrical, Electronic and Information Engineering for Automobiles		IV	2	2				
		Vehicle Structures		IV	2	2				
		Design Practice I		IV	1	1				
		Automobile Engineering Laboratory II		VI	2	2				
		Automobile Engineering Laboratory I		V	2	2				
		Design Practice II		V	1	1				
		Power Electronics		V	2	2				
		Graduation Research A		VII	5	5				
	Graduation Research B		VIII	5	5					
	Specialized Courses	Elective Courses ④	Mathematics Tutorial I a		I	1			1	17.5
			Mathematics Tutorial I b		I	1			1	
Mathematics Tutorial II a				II	1			1		
Mathematics Tutorial II b				II	1			1		
Analytical Chemistry				V	2			2		
Urban Environment and Transportation System				V	2			2		
Numerical Analysis				V	2			2		
Heat Transfer Engineering				VI	2			2		
Tours in Industrial Plants A				IV	0.5			0.5		
Tours in Industrial Plants B				V	0.5			0.5		
Training in Industrial Plants				VI	1			1		
Automobile Chemical Systems II				VI	2			2		
Organic Materials				VII	2			2		
Environment and Recycling		VI	2			2				
Intelligent Transportation Systems		VI	2			2				
Electronic Devices in Automobiles		VI	2			2				
Vehicle Engines and New Propulsion Systems		V	2			2				
Vehicle Dynamics and Control		VI	2			2				
Vehicle Safety		VII	2			2				
Vehicle Design		VII	2			2				
Related Specialized Courses	Elective Courses ⑤	Scientific and Technical Japanese		VI	2			2	4	
		Business Japanese		VII	2			2		
		Outline of Engineering III		VII	2			2		
		View of Advanced Electrical, Electronic and Information Engineering		VII	2			2		
		Introduction to Civil Engineering and Architecture		VII	2			2		
Sum for Courses in Specialized Fields					62.5	0	27.5	90		
Total Sum					98	0	39.5	137.5		

* Confirm the prerequisite for each subject with the syllabus.

* Refer to the details of the Term on the page 3 of "AY2021 Liberal Arts and Sciences Course Registration Guide for International Programs Students"

★ Some of the courses on this column are offered in every other year. Confirm the offering term with the "Liberal Arts and Sciences Class Timetable" of the said year.

**Graduation Requirements for International Programs,
Automotive Engineering Program – School of Engineering (for Undergraduate)**

(Majors : Electrical Engineering, Electronics, and Information Engineering)

1. Liberal Arts and Sciences Courses: A combined total of at least 47.5 credits must be acquired.

- (1) Basic General Education Courses: A total of at least 16 credits must be acquired, consisting of 2 credits from first year seminar A, 12 credits from Japanese/Languages except English, and at least 2 credits from Health and Sports Science Courses.
- (2) Basic Courses in Humanities and Social Sciences and Liberal Education Courses in Humanities and Social Sciences: A total of at least 4 course credits must be acquired from these two Course Categories.
- (3) Liberal Education Courses in Natural Sciences: A total of at least 4 elective course credits must be acquired.
- (4) Liberal Education Courses in Interdisciplinary Fields: At least 2 elective course credits must be acquired.
- (5) Basic Courses in Natural Sciences: A total of at least 21.5 credits must be acquired, consisting of 6 compulsory course credits from 3 Fundamentals of Physics courses, a total of at least 10 compulsory course credits from 5 Fundamental Mathematics courses, 1.5 course credits of Laboratory in Physics, and 4 compulsory course credits from Fundamentals of Chemistry I and II.

2. Courses in Specialized Fields: A combined total of at least 90 course credits must be acquired from these course categories.

- (1) Compulsory Courses: A total of 62.5 course credits must be acquired, consisting of a total of 36.5 credits from Compulsory Basic Specialized Courses ① and a total of 26 credits from Compulsory Specialized Courses ③.
- (2) Elective Courses: A total of at least 27.5 course credits must be acquired, consisting of a total of at least 6 course credits from Elective Basic Specialized Courses ②, a total of at least 17.5 course credits from Elective Specialized Courses ④, and a total of at least 4 course credits from Elective Related Specialized Courses ⑤.

**Advancement Requirements for International Programs,
Automotive Engineering Program – School of Engineering (for Undergraduate)**

(Majors : Electrical Engineering, Electronics, and Information Engineering)

Time When Judgment is Made	Course Categories	A Required Minimum Number of Courses/Credits	Details
At the End of the First Grade	Basic Courses in Natural Sciences	5 courses	A minimum of 5 courses from the Basic Courses in Natural Sciences must be acquired.
At the End of the Second Grade	Basic General Education Courses, Basic Courses in Humanities and Social Sciences, Liberal Education Courses in Humanities and Social Sciences, Basic Courses in Natural Sciences, Liberal Education Courses in Natural Sciences, Liberal Education Courses in Interdisciplinary Fields	41 credits	<p>1. Basic General Education Courses: A total of at least 10.5 course credits must be acquired from the Language and Culture Courses: Japanese, German, French, Russian, Chinese, Spanish, or Korean</p> <p>2. Basic Courses in Natural Sciences: A total of at least 17.5 course credits must be acquired from Basic Courses in Natural Sciences, including 1.5 credits of Laboratory in Physics.</p>