Appended Table 1 – University of Yamanashi, Integrated Graduate School of Medicine, Engineering, and Agricultural Sciences: Detailed Regulations pertaining to Article 2

Standard Requirements for the Master Programs of the Integrated Graduate School of Medicine, Engineering, and Agricultural Sciences

Engineering

Course	Field of Subject	Compulsory-Elective	Necessary Credits
Mechanical Engineering Computer Science and Engineering Civil and Environmental Engineering Applied Chemistry	Graduate School Common Courses	Compulsory	1 credit
		Elective	1 credit
	Departmental Common Courses	Compulsory	1 credit
		Elective	1 credit
	Major	Elective	10 credits
	Major (Advanced level)	Compulsory	12 credits
	Other course subjects	Elective	2 credits
	Any of above subjects	Elective	2 credits or above
	Total		30 credits or above

Notes:

1. Total of 30 credits or more including 2 credits of Graduate School Common Courses, 2 credits of Departmental Common Courses, 10 credits of Major, 12 credits of Major (Advanced level) and 2 credits of other course subjects are required.
2. 1 subject (1 credit) of Graduate School Common Courses, 1 subject (1 credit) of Departmental Common Courses and 8 subjects (12 credits) of Major (Advanced level) are compulsory.
3. When specific designations are listed in appended Table 2, credits are awarded according to these specifications.

Course	Field of Subject	Compulsory-Elective	Necessary Credits
Electrical and Electronic Engineering Advanced Material Science	Graduate School Common Courses	Compulsory	1 credit
		Elective	1 credit
	Departmental Common Courses	Compulsory	1 credit
		Elective	1 credit
	Major	Elective	8 credits
	Major (Advanced level)	Compulsory	12 credits
	Other course subjects	Elective	2 credits
	Any of above subjects	Elective	4 credits or above
	Total		30 credits or above

Notes:

1. Total of 30 credits or more including 2 credits of Graduate School Common Courses, 2 credits of Departmental Common Courses, 8 credits of Major, 12 credits of Major (Advanced level) and 2 credits of other course subjects are required.
2. 1 subject (1 credit) of Graduate School Common Courses, 1 subject (1 credit) of

Appended Table 2 – University of Yamanashi, Integrated Graduate School of Medicine, Engineering, and Agricultural Sciences: Detailed Regulations pertaining to Article 3

The Master's program

Graduate School Common Courses

Code	Subjects	Credits	Remarks Column
G S C 5 0 1	Research Ethics	1	●
G S C 5 0 2	Career Management	1	○
G S C 5 0 3	Communications in Sciences	1	○
G S C 5 0 4	Data Analysis for Life Science	2	○

Notes:

1. Subjects with a ●mark in the remarks column are compulsory.
2. Subjects with a ○mark in the remarks column are elective. Students are required to obtain one credit or more in these subjects.
3. The "Data Analysis for Life Science" is a subject applicable for credit transfer between the graduate school of the Meiji University and the University of Yamanashi. In case that you complete the subject held in the graduate school of the Meiji Univaersity and get a credit, the credit will be approved as a subject of the University of Yamanashi.

Departmental Common Courses

Code	Subjects	Credits	Remarks Column
G T T 5 0 1	Advanced Multidiscipline Engineering ＊	1	●
G T T 5 0 2	Design of Experiment and Data Analysis	1	○
G T T 5 1 0	Practical Data Science	1	○
G T T 5 0 4	Management of　Technology	1	○
G T T 5 0 5	Exercises in Applied Mathematics	1	○
G T T 5 1 3	Internship I	1	○
G T T 5 1 4	Internship II	2	○
G T T 5 1 5	Intern Training for Career development	2	○
G T T 5 0 8	Presentation A	1	○
G T T 5 0 9	Presentation B	1	○
G T T 5 1 1	Field Research in Engineering I	1	○
G T T 5 1 2	Field Research in Engineering II	2	○

Notes:

1. Subjects with a ●mark in the remarks column are compulsory.
2. Subjects with a ○mark in the remarks column are elective. Students are required to obtain one credit or more in these subjects.
3. Subjects with a ＊mark in the subjects column can be taught in English or Japanese.
4. In Presentation A, students are instructed on presentation held in Japanese or paper written in Japanese. In Presentation B, students are instructed on presentation held in English or paper written in English.

Computer Science and Engineering

Subject category	Code	Subjects	Credits	Remarks Column
Major	GTK501	Large-scale Discrete Structure Processing	2	
	GTK502	Software Engineering	2	
	GTK503	Parallel Computing ＊	2	
	GTK505	Machine Learning ＊	2	
	GTK508	User-centered Design Methodology ＊	2	
	GTK509	Computer Vision ＊	2	
	GTK510	Digital Speech Processing	2	
	GTK511	Natural Language and Image Media Processing ＊	2	
	GTK513	Global Communication for Engineers ＊	2	
	GTK514	Design Thinking Practice ＊	2	
	GTK515	Advanced Data Visualization ＊	2	
Major (Advanced level)	GTK601	Advanced Topics in Computer Science and Engineering I	1	
	GTK602	Advanced Topics in Computer Science and Engineering II ＊	1	
	GTK611	Advanced Topics in Computer Science and Engineering III	1	
	GTK612	Advanced Topics in Computer Science and Engineering IV ＊	1	
	GTK613	Advanced Topics in Computer Science and Engineering V	2	
	GTK614	Advanced Topics in Computer Science and Engineering VI ＊	2	
	GTK615	Advanced Topics in Computer Science and Engineering VII ＊	2	
	GTK603	Seminar in Computer Science and Engineering IA ＊	1	●
	GTK604	Seminar in Computer Science and Engineering IB ＊	1	●
	GTK605	Seminar in Computer Science and Engineering IIA ＊	1	●
	GTK606	Seminar in Computer Science and Engineering IIB ＊	1	●
	GTK607	Research Work in Computer Science and Engineering IA ＊	2	●
	GTK608	Research Work in Computer Science and Engineering IB ＊	2	●
	GTK609	Research Work in Computer Science and Engineering IIA ＊	2	●
	GTK610	Research Work in Computer Science and Engineering IIB ＊	2	●

Notes: 1. Subjects with a ●mark in the remarks column are compulsory. Students are required to obtain all credits in these subjects.

2. Students are required to obtain ten or more credits in column of Major and twelve or more credits in column of Major (Advanced level) including compulsory subjects.

3. Subjects with a ＊mark in the subjects column can be taught in English or Japanese.

4. “Global Communiacation for Engineers” is a subject only for international students.

5. Students can take the course of “Internship I(5 days and more)” and “Internship II(2 weeks and more)” when the students participate in such a program offered by the companies and institutions. Students can take the course of “Intern Training for Career development” when the students participate in more specialized programs offered by the companies and institutions.

The Other Lectures (excluding students in Special Educational Program on River Basin Environmental Science and Special Educational Program for Green Energy Conversion Science and Technology)

Students are required to obtain 2 or more credits of subjects offered in courses other than their own course.

Mechanical Engineering

Subject category	Code	Subjects	Credits	Remarks Column
Major	ＧＴＭ５０１	Advanced Thermal Engineering ＊	2	
	ＧＴＭ５０２	Advanced Mechanical Dynamics and Control ＊	2	
	ＧＴＭ５０３	Advanced Fluid Mechanics ＊	2	
	ＧＴＭ５０４	Advanced Strength of Materials ＊	2	
	ＧＴＭ５０５	Advanced Material Processing ＊	2	
	ＧＴＭ５０６	Advanced Mechanical Materials Engineering ＊	2	
	ＧＴＭ５０７	Advanced Mechanical Systems Engineering ＊	2	
Major (Advanced level)	ＧＴＭ６１１	Special Lecture in Mechanical Engineering	1	
	ＧＴＭ６０３	Seminar in Mechanical Engineering IA ＊	1	●
	ＧＴＭ６０４	Seminar in Mechanical Engineering IB ＊	1	●
	ＧＴＭ６０５	Seminar in Mechanical Engineering IIA ＊	1	●
	ＧＴＭ６０６	Seminar in Mechanical Engineering IIB ＊	1	●
	ＧＴＭ６０７	Research Work in Mechanical Engineering IA ＊	2	●
	ＧＴＭ６０８	Research Work in Mechanical Engineering IB ＊	2	●
	ＧＴＭ６０９	Research Work in Mechanical Engineering IIA ＊	2	●
	ＧＴＭ６１０	Research Work in Mechanical Engineering IIB ＊	2	●

Notes: 1. Subjects with a ●mark in the remarks column are compulsory. Students are required to obtain all credits in these subjects.

2. Students are required to obtain ten or more credits in the column of Major and twelve or more credits in the column of Major (Advanced level) including compulsory subjects.

3. Subjects with a ＊mark in the subjects column can be taught in English or Japanese.

Appended Table 5

System Integration Engineering Course

Field of Subjects		Code	Subjects	Credits	Remarks Column
Graduate School Common Courses		ＰＳＣ７０１	Ethics for Scientific Researchers, Engineers, and Medical Doctors	1	●
		ＰＳＣ７０２	Interdisciplinary Lecture on Medicine, Engineering, and Agriculture	1	○
		ＰＳＣ７０４	Research Communication and Social Implementation	1	○
		ＰＳＣ７０３	Long-term internship	2	
Departmental Common Courses		ＰＴＴ７０３	Statistical Reasoning	1	●
		ＰＴＴ７０２	Advanced Risk Management	1	●
System Integration Engineering Course	Common	ＰＴＳ７０１	Field Research for System Integration Engineering	2	
		ＰＴＳ７５０	Advanced Exercises for System Integration Engineering I	2	●
		ＰＴＳ７５１	Advanced Exercises for System Integration Engineering II	2	●
	System Design Major	ＰＴＶ７０１	Advanced Thermo-Physical Engineering	2	
		ＰＴＶ７０２	Turbulent Transport Engineering	2	
		ＰＴＶ７０３	Advanced Materials Engineering	2	
		ＰＴＶ７０４	Advanced Material and Manufacturing Processing	2	
		ＰＴＶ７０５	Advanced Theory of Vibration Control	2	
		ＰＴＶ７０６	Advanced Transportational Systems Engineering	2	
		ＰＴＶ７０７	Advanced Color Image Technology	2	
		ＰＴＶ７０８	Advanced Wave Application Engineering	2	
		ＰＴＶ７０９	Applied Robotics	2	
		ＰＴＶ７１０	Advanced Human-Machine Interface	2	
		ＰＴＶ７１１	Advanced Robot Design	2	
		ＰＴＶ７１２	Optical Engineering	2	
	Information Communication System Major	ＰＴＷ７０１	Advanced Optical Sensing and Control Engineering	2	
		ＰＴＷ７０２	Advanced Optical Waves and Ultrasonic Engineering	2	
		ＰＴＷ７０３	Advanced Communication Systems	2	
		ＰＴＷ７０４	Advanced VLSI Circuit Engineering	2	
		ＰＴＷ７０５	Advanced Signal Processing	2	
		ＰＴＷ７０６	Advanced Superconducting Electronics	2	
		ＰＴＷ７０７	Advanced Laser and Plasma Engineering	2	
		ＰＴＷ７０８	Advanced Software Development Engineering	2	
		ＰＴＷ７０９	Advanced Artifact Design Methodology	2	
		ＰＴＷ７１０	Advanced Kansei and Intelligent Information Systems	2	
		ＰＴＷ７１２	Advanced Visual Computing	2	
		ＰＴＷ７１３	Advanced Discrete Structure Systems	2	
		ＰＴＷ７１４	Advanced Computing Systems	2	
		ＰＴＷ７１５	Advanced Intelligent Media Processing	2	
		ＰＴＷ７１６	Advanced Natural Language and Speech Media Processing	2	
Other course subjects		ＰＴＡ７０５	Advanced Polymer Material Chemistry	2	
		ＰＴＮ７１１	Interdisciplinary Physics	2	
		ＰＴＭ７０１	International Partnership for Environment	1	
		ＰＩＡ７０８	Advanced microbial functional development	2	
		ＰＭＮ７０１	Medical Data Analysis and Clinical Epidemiology	1	
		ＰＤＮ７１０	Human Life and Health Sciences	2	
		ＰＩＡ７０２	Advanced Food Manufactural and Nutritional Sciences	2	

* Note:1. Subjects with a ●mark in the remarks column are compulsory.
:2. Subjects with a ○mark in the remarks column are elective. Students are required to obtain one credit or more in these subjects.
:3. Please note that “Long-term internship” can not be included in the number of subjects required for completion.

Appended Table 4

【Engineering】

<table>
<tr><th>Course</th><th colspan="2">Field of Subjects</th><th>Compulsory-Elective</th><th>Necessary Credits</th></tr>
<tr><td rowspan="6">System Integration Engineering Course</td><td colspan="2" rowspan="2">Graduate School Common Courses</td><td>Compulsory</td><td>1 credit</td></tr>
<tr><td>Compulsory Elective</td><td>1 credit</td></tr>
<tr><td colspan="2">Departmental Common Courses</td><td>Compulsory</td><td>2 credits</td></tr>
<tr><td rowspan="3">Course</td><td>Common</td><td>Compulsory</td><td>4 credits</td></tr>
<tr><td>Major</td><td>Elective</td><td>4 credits</td></tr>
<tr><td>Any of own Course</td><td>Elective</td><td>2 credits or above</td></tr>
<tr><td colspan="3">Total</td><td>14 credits or above</td></tr>
</table>

Notes:

1. Total of 14 credits or more including 2 credits of Graduate School Common Courses, 2 credits of Departmental Common Courses, 10 credits of own Course (including 4 credits of Major) are required.
2. 2 subjects (2 credits) of Graduate School Common Courses (1 credit for Compulsory and at least 1 credit for Compulsory Elective), 2 subjects (2 credits) of Departmental Common Courses and 2 subjects (4 credits) of Course Common are compulsory.
3. Among the subjects in other Departments, the designated subjects as Related courses (refer to Appended Table 5) can be included in the number of required credits, to a maximum of 2 credits.

<table>
<tr><th>Course</th><th colspan="2">Field of Subjects</th><th>Compulsory-Elective</th><th>Necessary Credits</th></tr>
<tr><td rowspan="6">Energy Materials Science Course</td><td colspan="2" rowspan="2">Graduate School Common Courses</td><td>Compulsory</td><td>1 credit</td></tr>
<tr><td>Compulsory Elective</td><td>1 credit</td></tr>
<tr><td colspan="2">Departmental Common Courses</td><td>Compulsory</td><td>2 credits</td></tr>
<tr><td rowspan="3">Course</td><td>Common</td><td>Compulsory</td><td>4 credits</td></tr>
<tr><td>Major</td><td>Elective</td><td>4 credits</td></tr>
<tr><td>Any of own Course</td><td>Elective</td><td>2 credits or above</td></tr>
<tr><td colspan="3">Total</td><td>14 credits or above</td></tr>
</table>

Notes:

1. Total of 14 credits or more including 2 credits of Graduate School Common Courses, 2 credits of Departmental Common Courses, 10 credits of own Course (including 4 credits of Major) are required.
2. 2 subjects (2 credits) of Graduate School Common Courses (1 credit for Compulsory

Energy Materials Science Course

Field of Subjects		Code	Subjects	Credits	Remarks Column
Graduate School Common Courses		ＰＳＣ７０１	Ethics for Scientific Researchers, Engineers, and Medical Doctors	1	●
		ＰＳＣ７０２	Interdisciplinary Lecture on Medicine, Engineering, and Agriculture	1	○
		ＰＳＣ７０４	Research Communication and Social Implementation	1	○
		ＰＳＣ７０３	Long-term internship	2	
Departmental Common Courses		ＰＴＴ７０３	Statistical Reasoning	1	●
		ＰＴＴ７０２	Advanced Risk Management	1	●
Energy Materials Science Course	Common	ＰＴＥ７０１	Field Research for Energy Materials Science	2	
		ＰＴＥ７５０	Advanced Exercises for Energy Materials Science I	2	●
		ＰＴＥ７５１	Advanced Exercises for Energy Materials Science II	2	●
	Materials Chemistry Major	ＰＴＡ７０１	Advanced Inorganic Materials Chemistry	2	
		ＰＴＡ７０２	Advanced Course of Inorganic Material Property	2	
		ＰＴＡ７０３	Advanced Course of Functional Organic Molecular Chemistry	2	
		ＰＴＡ７０４	Advanced Chemical Analysis	2	
		ＰＴＡ７０５	Advanced Course of Polymer Materials Chemistry	2	
		ＰＴＡ７０７	Material Chemistry of Solids	2	
		ＰＴＡ７０８	Advanced Quantum Materials Chemistry	2	
		ＰＴＡ７０９	Advanced Course of Solid-State Electronic Materials	2	
	Electronic Device Major	ＰＴＢ７０１	Advanced Course in Crystal Science and Engineering	2	
		ＰＴＢ７０２	Semiconductor Device Engineering	2	
		ＰＴＢ７０３	Quantum Electronic Device Engineering	2	
		ＰＴＢ７０４	Quantum Physics	2	
		ＰＴＢ７０５	Physics for Solid State Materials	2	
		ＰＴＢ７０６	Advanced Quantum Science of Light and Matter	2	
		ＰＴＢ７０７	Advanced System of Circuit integration	2	
		ＰＴＢ７０８	Advanced Photon Engineering	2	
		ＰＴＢ７０９	Advanced Instrumentation and Measurement Engineering	2	
	Green Energy Science and Technology Major	ＰＴＣ７０１	Advanced Course of Design for Fuel Cells	2	
		ＰＴＣ７０２	Advanced Course of Catalyst Design for Electrodes	2	
		ＰＴＣ７０３	Advanced Course of Engineering for Solar Energy Conversion	2	
		ＰＴＣ７０４	Advanced Course of Materials Chemical Engineering	2	
		ＰＴＣ７０５	Advanced Course of Design for Advanced Inorganic Materials	2	
		ＰＴＣ７０６	Advanced Course of Science for Surfaces and Interfaces	2	
		ＰＴＣ７０７	Advanced Course of English for Green Energy Science and Technology, Advanced Level	2	
Other course subjects		ＰＴＮ７１１	Interdisciplinary Physics	2	
		ＰＴＭ７０１	International Partnership for Environment	1	
		ＰＩＡ７０８	Advanced microbial functional development	2	
		ＰＭＮ７０１	Medical Data Analysis and Clinical Epidemiology	1	
		ＰＤＮ７１０	Human Life and Health Sciences	2	
		ＰＩＡ７０２	Advanced Food Manufactural and Nutritional Sciences	2	

* Note: 1. Subjects with a ●mark in the remarks column are compulsory.

:2. Subjects with a ○mark in the remarks column are elective. Students are required to obtain one credit or more in these subjects.

: 3. Please note that “Long-term internship” can not be included in the number of subjects required for completion.