

Hanoi, August 11<sup>th</sup>, 2022

**DECISION**

**On approving the teaching plan of bachelor programs  
in academic year 2022-2023**

**RECTOR**

**OF UNIVERSITY OF SCIENCE AND TECHNOLOGY OF HANOI**

Pursuant to Decision No. 2067/QĐ-TTg dated December 9<sup>th</sup>, 2009 of the Prime Minister on the establishment of University of Science and Technology of Hanoi (USTH);

Pursuant to Decision No. 2557/QĐ-TTg dated December 30<sup>th</sup>, 2016 of the Prime Minister on Regulations on organization and operation of USTH;

Pursuant to Decision No. 306/QĐ-ĐHKHCN dated May 23<sup>th</sup>, 2019 on the establishment of Department of Academic Affairs under USTH;

Pursuant to the Academic Policies for Undergraduate Programs of USTH promulgated with Decision No. 627/QĐ-ĐHKHCN dated September 10<sup>th</sup>, 2019;

At the proposal of Director of Department of Academic Affairs.

**DECIDES:**

**Article 1.** To approve the teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023 as detailed in the Annexes promulgated with this Decision.

**Article 2.** Director of Administration, Director of Department of Academic Affairs, Directors of academic departments, Head of Human Resources Department, Head of Accounting and Finance Department and involved individuals shall be in charge of implementing this Decision./.

**Recipients:**

- As Article 2;
- Rector;
- Vice Rectors;
- Archive: Admin, DAA.MH.

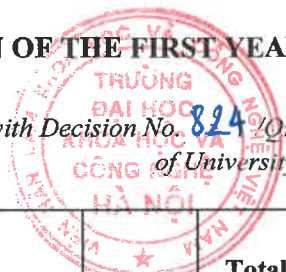
**PRINCIPAL RECTOR**

*(Signed and sealed)*

**Prof. Jean-Marc Lavest**

**ANNEX 1: TEACHING PLAN OF THE FIRST YEAR (B1) OF BACHELOR PROGRAMS (EXCEPT FOR AERONAUTICAL ENGINEERING MAJOR)  
IN 2022-2023**

*(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)*



No.	Module Code	Modules	ECTS	Total teaching hours	Lecture hour	Practical hour	Tutorial hour	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	ENG1.012	English academic writing	3	36	36			M	Nguyễn Thị Ngọc Thảo, Nguyễn Hồng Nga, Nguyễn Ngọc Anh, Đỗ Thùy Linh, Bùi Phương Hà, invited lecturers	F+I	10/2022	12/2022
2	ENG1.014	English listening and note-taking	2	28	28			M	Nguyễn Thị Ngọc Thảo, Nguyễn Hồng Nga, Nguyễn Ngọc Anh, Đỗ Thùy Linh, Bùi Phương Hà, invited lecturers	F+I	10/2022	12/2022
3	ENG1.013	English presentation	3	36	36			M	Nguyễn Thị Ngọc Thảo, Nguyễn Hồng Nga, Nguyễn Ngọc Anh, Đỗ Thùy Linh, Bùi Phương Hà, invited lecturers	F+I	10/2022	12/2022
4	BIO1.001	Cellular biology	4	41	32	6	3	M	Lê Thanh Hương, Mai Thị Phương Nga, Nguyễn Văn Phương, Nguyễn Thị Trang Huyền, Trần Thị Thanh Tâm, Trần Tuấn Anh, Nguyễn Cẩm Linh, Trần Thị Thu Phương, Nguyễn Thanh Hiền	F	9/2022	01/2023
5	CHE1.001	General chemistry 1	4	40	28		12	M	Trần Đình Phong, Nguyễn Đức Anh, Lê Thị Hường, Phạm Hồng Ngọc, Lê Phương Thu, Nguyễn Ngọc Đức, Nguyễn Thị Quyên, Trần Bửu Đăng, Đàm Thế An, Nguyễn Văn Quyên	F+I	9/2022	01/2023
6	MAT1.001	Calculus 1	4	48	24		24	M	Lê Hải Khôi, Lương Thái Hưng, Đỗ Hoàng Sơn, Nguyễn Huyền Mười, Phạm Việt Hùng	I	9/2022	01/2023



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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture hour	Practical hour	Tutorial hour	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
7	ICT1.001	Introduction to informatics	3	33	18	15		M	Nguyễn Đức Dũng, Phan Thanh Hiền, Phạm Đức Bình, Trần Anh Tú, Nguyễn Lê Dũng, Nguyễn Xuân Thành	F+I	9/2022	01/2023
8	MAT1.002	Linear algebra	4	48	24		24	M	Nguyễn Việt Dũng, Nguyễn Bích Vân, Lê Xuân Thanh, Lê Hải Yến, Hoàng Lê Trường, Hà Minh Lam, Phong Thị Thu Huyền	I	9/2022	01/2023
9	PHY1.001	Fundamental physics 1	4	44	26		18	M	Nguyễn Thị Hồng Vân, Nguyễn Hồng Nam, Trịnh Bích Ngọc, Nguyễn Thị Thanh Ngân, Nguyễn Mai Chung, Nguyễn Thị Ngọc, Nguyễn Văn Tăng, Vũ Ngọc Linh	F+I	9/2022	01/2023
10	FR1.001	French double degree 1*	8	120	120			O	Trần Thị Phương Thảo; Nguyễn Tuấn Anh; Trương Thị Khánh Hòa; Phạm Thị Huyền, invited lecturers	F+I	10/2022	01/2023
11	FR1.002	French double degree 2*	0	130	130			O	Trần Thị Phương Thảo; Nguyễn Tuấn Anh; Trương Thị Khánh Hòa; Phạm Thị Huyền, invited lecturers	F+I	01/2023	5/2023
<b>Semester 2</b>												
12	BIO1.002	Genetics	3	32	18	4	10	M	Nguyễn Thy Ngọc, Lê Thị Vân Anh, Nguyễn Thị Trang Huyền, Nguyễn Cẩm Linh, Trần Tuấn Anh, Nguyễn Quỳnh Hoa	F	02/2023	6/2023
13	BIO1.003	Biochemistry	3	30	26	4		O	Lê Thị Thu Hằng, Nguyễn Phương Nga	F	02/2023	6/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture hour	Practical hour	Tutorial hour	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
14	BIO1.004	General micro-biology	3	34	22	12		O	Shir-Ly Huang, Suh-Der Tsen, Tô Thị Mai Hương, Trần Thị Thanh Tâm, Trần Tuấn Anh, Nguyễn Quang Huy	F+I	02/2023	6/2023
15	CHE1.002	General chemistry 2	4	40	26		14	M	Wim Dehaen Alfons, Lê Thị Hương, Nguyễn Thị Quyên, Phạm Hồng Ngọc, Trần Hữu Đăng, Đàm Thế An, Lê Phương Thu, Ngô Thị Lan	F+I	02/2023	6/2023
16	CHE1.003	Organic chemistry	4	50	32		18	O	Nguyễn Văn Hùng, Nguyễn Xuân Nhiệm, Bùi Hữu Tài	I	02/2023	6/2023
17	CHE1.004	Practical chemistry	2	24		24		O	Phạm Hồng Ngọc, Đào Thành Dương, Lê Phương Thu, Đinh Thị Mai Thanh, Mai Hương, Bùi Văn Hợi, Lê Thị Hương, Nguyễn Đức Anh, Trần Quang Minh, Nguyễn Văn Quyên, Trần Tuấn Anh	F	02/2023	6/2023
18	ICT1.002	Basic programming	4	40	28	12		M	Nguyễn Hoàng Hà, Nguyễn Minh Hương, Giang Anh Tuấn, Lê Hữu Tôn, Tống Sĩ Sơn, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	02/2023	6/2023
19	ICT1.003	Computer architecture	3	36	26	10		O	Lê Anh Ngọc, Nguyễn Khánh Tùng, Nguyễn Xuân Thành, Huỳnh Vinh Nam	F+I	02/2023	6/2023
20	ICT1.004	Introduction to algorithms	3	30	22	8		O	Hoàng Đỗ Thanh Tùng, Nguyễn Thị Phương Thảo, Nguyễn Lê Dũng, Nguyễn Hoàng Hà, Nguyễn Xuân Thành, Huỳnh Vinh Nam	F+I	02/2023	6/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture hour	Practical hour	Tutorial hour	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
21	MAT1.003	Calculus 2	3	36	18		18	O	Lê Hải Khôi, Lương Thái Hưng, Đỗ Hoàng Sơn, Nguyễn Huyền Mươi, Phạm Việt Hùng	I	02/2023	6/2023
22	MAT1.004	Discrete mathematics	3	36	18		18	O	Nguyễn Hoàng Thạch, Phong Thị Thu Huyền, Lê Hải Yến	I	02/2023	6/2023
23	PHY1.002	Fundamental physics 2	4	40	26		14	M	Hà Dương Tập, Hoàng Thị Hồng Cẩm, Nguyễn Thị Thanh Ngân, Nguyễn Thị Ngọc, Nguyễn Lương Lâm, Nguyễn Mai Chung, Trịnh Bích Ngọc	F+I	02/2023	6/2023
24	PHY1.003	Electromagnetism	4	40	26		14	O	Nguyễn Quốc Hưng, Hoàng Thị Hồng Cẩm	F+I	02/2023	6/2023
25	PHY1.004	Practical physics	2	24		24		O	Nguyễn Hồng Nam, Vũ Ngọc Linh, Nguyễn Văn Tăng, Phạm Văn Nhất, Nguyễn Lương Lâm, Nguyễn Thị Ngọc, Nguyễn Thị Thanh Ngân, Nguyễn Mai Chung, Trịnh Bích Ngọc, Hoàng Thị Hồng Cẩm, Phạm Lê Anh	F	02/2023	6/2023
26	PHY1.005	Practical physics**	3	30		30		O	Nguyễn Hồng Nam, Vũ Ngọc Linh, Nguyễn Văn Tăng, Phạm Văn Nhất, Nguyễn Lương Lâm, Nguyễn Thị Ngọc, Nguyễn Thị Thanh Ngân, Nguyễn Mai Chung, Trịnh Bích Ngọc, Hoàng Thị Hồng Cẩm, Phạm Lê Anh	F	02/2023	6/2023
27	FR1.003	French double degree 3*	0	130	130			O	Trần Thị Phương Thảo; Nguyễn Tuấn Anh; Trương Thị Khánh Hòa; Phạm Thị Huyền	F+I	5/2023	7/2023
28	MS1.001	Foundation of Economics	2	20	20			O	Phạm Thị Mỹ Hạnh	I	02/2023	6/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture hour	Practical hour	Tutorial hour	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
29	MS1.002	Fundamentals of Law and Law on Science and Technology in Vietnam	2	20	20			O	Nguyễn Văn Hùng	I	02/2023	6/2023

(\*): Modules for double degree programs.

(\*\*): Modules for Mechatronics Engineering Technology and Automotive Engineering.

**ANNEX 2: TEACHING PLAN OF BACHELOR PROGRAM IN ADVANCED MATERIALS SCIENCE AND NANOTECHNOLOGY**

**IN 2022-2023**

*(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)*

**2.1. TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MAT2.002	Probability and statistics	4	40	20		20	M	Trần Hoàng Tùng, Nguyễn Mai Chung, Nguyễn Minh Hương	F	09/2022	11/2022
2	AMS2.201	Electromagnetism 2	3	30	24		6	M	Nguyễn Thị Ngọc	F	09/2022	10/2022
3	AMS2.205	Solid-state physics	3	36	30		6	M	Vũ Thị Thu	F	10/2022	12/2022
4	AMS2.101	Inorganic chemistry	3	30	20		10	M	Delphine Schamming	I	01/2023	01/2023
5	AMS2.202	Quantum mechanics	3	30	24		6	M	Hoàng Thị Hồng Cẩm	F	09/2022	11/2022
6	AMS2.203	Statistical mechanics	3	30	24		6	M	Trịnh Xuân Hoàng	I	10/2022	11/2022
7	AMS2.204	Optics	2	26	24		2	M	Nguyễn Thị Thanh Ngân	F	11/2022	12/2022
8	AMS2.102	Organic chemistry 2	3	36	24	12		M	Lê Thị Hường	F	09/2022	01/2023
9	AMS2.208	Semiconductor	3	36	30		6	M	Nguyễn Thị Thanh Ngân	F	01/2023	02/2023
10	FR2.001	French 2.1	4	60	60			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, invited lecturers	F+I	12/2022	02/2023

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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
11	MS2.005	Basic principles of project management	2	20	20			O	Nguyễn Văn Hùng	I	9/2022	02/2023
12	PHI2.001	Philosophy	0	30	30			M	Trần Xuân Bình	I	9/2022	02/2023
<b>Semester 2</b>												
13	AMS2.103	Analytical Chemistry	3	36	24	12		M	Lê Thị Hường	F	02/2023	04/2023
14	AMS2.301	Fundamentals of Materials Science	3	36	30		6	M	Nguyễn Văn Quyền	F	02/2023	04/2023
15	AMS2.303	Introduction of micro-nano technology	2	20	12	8		M	Phạm Văn Nhật	F	02/2023	07/2023
16	AMS2.206	Physical Chemistry	3	30	20	10		M	Myriana Hémadi, Nguyễn Văn Quyền	F + I	02/2023	06/2023
17	AMS2.306	Micro and Nanofabrication	3	30	24	6		M	Nguyễn Văn Quỳnh	F	02/2023	07/2023
18	AMS2.304	Magnetism & Magnetic materials	3	30	24	6		M	Nguyễn Lương Lâm	F	02/2023	04/2023
19	AMS2.207	Colloid Chemistry and Soft Matter	3	33	23	10		M	Nguyễn Văn Quyền	F	02/2023	#####
20	AMS2.305	Materials Design and Simulation	3	30	12	18		M	Thái Minh Quân	I	02/2023	06/2023
21	FR2.002	French 2.2	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, invited lecturers	I+F	3/2023	5/2023
22	MS2.006	Intellectual property management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023



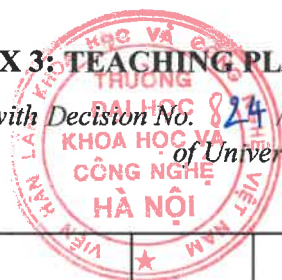
**2.2. TEACHING PLAN OF B3**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	CH2.016	Chemistry of polymer	3	36	30	0	6	M	Nguyễn Đức Anh	F	09/2022	11/2022
2	AMS3.105	Electrochemistry	3	34	24	10		M	Nguyễn Văn Quỳnh, Đinh Thị Mai Thanh	F	08/2022	09/2022
3	AMS3.107	Nanochemistry	3	36	24	6	6	M	Nguyễn Thị Quyên	F	09/2022	10/2022
4	AMS3.106	Inorganic materials	3	30	24	6		M	Nguyễn Lương Lâm	F	10/2022	11/2022
5	AMS3.307	Materials characterization techniques 1	3	30	20	10		M	Nguyễn Văn Quỳnh, Đinh Thị Mai Thanh	F	11/2022	12/2022
6	AMS3.308	Smart hybrid materials	3	30	26		4	M	Phạm Văn Nhật	F	11/2022	12/2022
7	AMS3.209	Optoelectronics and nanophotonics	3	32	28	4		M	Nguyễn Thị Thanh Ngân	F	11/2022	12/2022
8	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, invited lecturers	F+I	9/2022	10/2023
9	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, invited lecturers	F+I	10/2022	11/2022
10	MS3.001	Scientific writing and communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023
<b>Semester 2</b>												
11	AMS3.310	Materials characterization techniques 2	3	30	24	6		M	Nguyễn Lương Lâm, Nguyễn Thị Ngọc	F	02/2023	7/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
12	AMS3.009	Plasma physics and applications	3	36	24	10	2	O	Đỗ Hoàng Tùng	I	02/2023	7/2023
13	AMS3.309	Materials for environmental applications	3	30	18	12		O	Nguyễn Văn Quyền	F	02/2023	7/2023
14	AMS3.001	Nanobiotechnology and BioMEMS	3	30	24	6		O	Phạm Văn Nhất, Nguyễn Xuân Phúc	F + I	02/2023	7/2023
15	AMS3.002	Biosensors	3	30	18	12		O	Vũ Thị Thu	F	02/2023	7/2023
16	AMS3.003	Metallic nanostructures for SERS application	3	30	20	6	4	O	Nguyễn Minh Huệ	I	02/2023	7/2023
17	AMS3.004	Nanoelectronics	3	30	20		10	O	Nguyễn Trần Thuật	I	02/2023	7/2023
18	AMS3.005	Silicon photonics	3	30	26	4		O	Hoàng Thị Hồng Cẩm	F	02/2023	7/2023
19	AMS3.006	Materials for energy conversion and storage	3	36	28	8		O	Lê Thị Hương, Nguyễn Mai Chung	F	02/2023	7/2023
20	AMS3.007	Lasers	3	36	24	8	4	O	Nguyễn Thị Thanh Ngân, Tống Quang Công	F+I	02/2023	7/2023
21	AMS3.010	Industrial process for solar cell fabrication	3	30	22	8		O	Invited Lecturer	I	02/2023	7/2023
22	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
23	AMS3.990	Group project	6					M			02/2023	7/2023
24	AMS3.999	Internship	15					M			02/2023	7/2023

**ANNEX 3: TEACHING PLAN OF BACHELOR PROGRAM IN APPLIED MATHEMATICS IN 2022-2023**

*(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)*



**3.1. TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MAT2.006	Computational Linear Algebra	4	40	20		20	M	Trần Giang Nam	I	9/2022	01/2023
2	MAT2.007	Probability	4	40	20		20	M	Đoàn Nhật Minh	I	9/2022	01/2023
3	MAT2.008	Dynamical Systems	3	36	18		18	M	Hoàng Thế Tuấn	I	9/2022	01/2023
4	MAT2.009	Graph Theory	4	40	20		20	M	Nguyễn Hoàng Thạch	I	9/2022	01/2023
5	MAT2.010	Optimization 1	3	36	18		18	M	Lê Xuân Thanh	I	9/2022	01/2023
6	ICT2.001	Data Structures and Algorithms	3	36	20	16		M	Đoàn Nhật Quang, Nguyễn Minh Hương, Lê Hữu Tôn, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	8/2022	12/2022
7	ICT2.003	Object-Oriented Programming	4	40	30	10		M	Nghiêm Thị Phương, Trần Giang Sơn, Kiều Quốc Việt	F	9/2022	01/2023
8	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
9	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023

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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
10	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023
<b>Semester 2</b>												
11	MAT2.011	Statistics	4	40	20		20	M	Hồ Đăng Phúc	I	02/2023	6/2023
12	MAT2.012	Numerical Analysis	4	40	20		20	M	Nguyễn Quỳnh Nga	I	02/2023	6/2023
13	MAT2.013	Mathematical Modeling	4	40	20		20	M	Đoàn Thái Sơn	I	02/2023	6/2023
14	MAT2.014	Optimization 2	3	36	18		18	M	Lê Xuân Thanh	I	02/2023	6/2023
15	MAT2.015	Stochastic Processes	3	36	18		18	M	Cần Văn Hào	I	02/2023	6/2023
16	ICT2.010	Image Processing	3	36	27	9		M	Nghiêm Thị Phương, Trần Giang Sơn	F	3/2023	6/2023
17	ICT2.013	Advanced Programming with Python	4	40	30	10		M	Trần Giang Sơn, Kiều Quốc Việt, Nghiêm Thị Phương	F	02/2023	5/2023
18	FR2.002	French 2.2	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
19	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

### 3.2. TEACHING PLAN OF B3

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MAT3.001	Data Assimilation	4	40	20		20	M	Đoàn Thái Sơn	I	8/2022	02/2023
2	MAT3.002	Multivariate Statistics	4	40	20		20	M	Hồ Đăng Phúc	I	8/2022	02/2023
3	MAT3.003	Mathematical Finance	4	40	20		20	M	Nguyễn Hoàng Thạch	I	8/2022	02/2023
4	MAT3.004	Machine Learning: Optimization Approach	4	40	20		20	M	Lê Hải Yến	I	8/2022	02/2023
5	MAT3.005	Machine Learning: Statistical Approach	4	40	20		20	M	Cần Văn Hào	I	8/2022	02/2023
6	ICT3.015	Computer Vision	3	30	20	10		M	Nguyễn Đức Dũng	I	11/2022	12/2022
7	MAT3.006	Group Project	5					M			8/2022	3/2023
8	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	9/2022	10/2023
9	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hòa, Phạm Thị Huyền, inviting lecturers	F+I	10/2022	11/2022
10	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 2</b>												
11	ICT3.013	Natural Language Processing	3	30	20	10		M	Phạm Quang Nhật Minh	I	02/2023	3/2023
12	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
13	MAT3.007	Internship	20					M			4/2023	10/2023



**ANNEX 4: TEACHING PLAN OF BACHELOR PROGRAM IN CHEMISTRY IN 2022-2023**

(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)

**4.1. TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	CH2.001	Analytical Chemistry	2	24	24			M	Bùi Văn Hội	F	10/2022	12/2022
2	CH2.002	Analytical Chemistry Lab	3	45	1	44		M	Bùi Văn Hội, Lê Văn Hoàng	F	11/2022	02/2023
3	CH2.003	Inorganic Chemistry 1	2	24	18		6	M	Phạm Hồng Ngọc, Trần Bửu Đăng	F	10/2022	01/2023
4	CH2.004	Inorganic Chemistry 2	2	24	18		6	M	Nguyễn Thị Quyên, Trần Bửu Đăng	I	12/2022	01/2023
5	CH2.005	Instrumental Analysis 1	3	36	30		6	M	Tô Hải Tùng	F	10/2022	01/2023
6	CH2.006	Organic Chemistry 2	3	36	24		12	M	Nguyễn Đức Anh	F	9/2022	01/2023
7	CH2.007	Physical Chemistry 1	2	24	18		6	M	Nguyễn Thị Tuyết Mai/ VAST lecturer, Trần Bửu Đăng	I	9/2022	01/2023
8	CH2.008	Physical Chemistry 2	2	24	18		6	M	Nguyễn Thị Tuyết Mai/ VAST lecturer, Trần Bửu Đăng	I	9/2022	01/2023
9	CH2.009	Project-based course 1	3	36	16	20		M	Lê Văn Hoàng	I	9/2022	02/2023
10	CH2.016	Polymer Chemistry	3	36	30		6	M	Nguyễn Đức Anh	F	11/2022	01/2023

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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
11	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
12	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
13	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023
<b>Semester 2</b>												
14	CH2.011	Food Chemistry and Technology	3	36	30	6		M	Phạm Hồng Ngọc	F	02/2023	6/2023
15	CH2.012	Instrumental Analysis 2	3	36	24		12	M	Lê Thị Lý	F	02/2023	6/2023
16	CH2.013	Organic Chemistry Lab	3	45	5	40		M	Tô Hải Tùng, Nguyễn Đức Anh	F	3/2023	6/2023
17	CH2.014	Organic Synthesis	3	36	30		6	M	Tô Hải Tùng	F	3/2023	6/2023
18	AMS2.015	Physicochemistry of Interfaces	3	30	30			M	Vũ Thị Thu	F	3/2023	6/2023
19	CH2.017	Project-based course 2	3	36	16	20		M	Vũ Cẩm Tú	F	3/2023	6/2023
20	CH3.006	Structure Determination	3	36	24		12	M	Tô Hải Tùng	F	02/2023	5/2023
21	CH2.019	Inorganic Chemistry Labwork	2	32	4	28		M	Nguyễn Thị Quyên, Phạm Hồng Ngọc	I	02/2023	6/2023
22	CH2.020	Physical Chemistry Labwork	2	32	4	28		M	Nguyễn Ngọc Đức, Trần Bửu Đăng	I	02/2023	6/2023

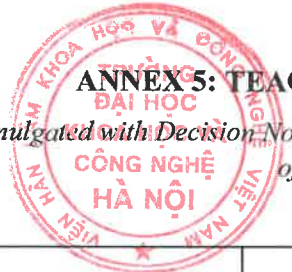


No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
23	FR2.002	French 2.2	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
24	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

#### 4.2. TEACHING PLAN OF B3

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	CH3.001	Chemistry of Nanomaterials	3	36	24	6	6	M	Nguyễn Thị Quyên	I	9/2022	01/2023
2	AMS3.105	Electrochemistry	3	34	24	10		M	Nguyễn Văn Quỳnh, Đinh Thị Mai Thanh	F	8/2022	01/2023
3	CH3.003	Biochemistry and Bioinorganic Chemistry	3	36	30	6		M	Phạm Hồng Ngọc	F	9/2022	02/2023
4	CH3.004	Chemistry of Natural and Biodegradable Polymers	3	36	24	12		M	Nguyễn Đức Anh	F	8/2022	12/2022
5	CH3.005	Chemistry of Natural products: Bioactive Compounds	3	36	24	12		M	Tô Hải Tùng	F	8/2022	01/2023
6	CH2.010	Catalysis	3	36	24	6	6	M	Nguyễn Ngọc Đức	I	10/2022	02/2023
7	CH3.008	Chemistry of Materials in Energy Conversion and Storage 2	3	36	24	6	6	M	Nguyễn Ngọc Đức	I	10/2022	02/2023
8	CH3.009	Chemistry of Heterocyclic Compounds	2	24	24			M	Tô Hải Tùng	F	9/2022	01/2023
9	CH3.010	Chemistry of Surfactants and Formulation of Life Products	3	36	24	12		M	Nguyễn Đức Anh	F	10/2022	01/2023
10	CH3.011	Project-based course 3	2	24	8	16		M	Lê Văn Hoàng	I	8/2022	01/2023
11	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, invited lecturer	F+I	9/2022	10/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
12	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, invited lecturer	F+I	10/2022	11/2022
13	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023
<b>Semester 2</b>												
14	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
15	CH3.007	Chemistry of Materials in Energy Conversion and Storage 1	3	36	30		6	M	Lê Thị Lý	F	02/2023	3/2023
16	CH3.012	Internship	20					M			4/2023	10/2023



**ANNEX 5: TEACHING PLAN OF BACHELOR PROGRAM IN CYBER SECURITY IN 2022-2023**

*(Promulgated with Decision No. 824 /QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)*

**5.1. TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MAT2.001	Numerical Methods	3	36	21	15		M	Thái Minh Quân, Phan Thanh Hiền, Phạm Đức Bình, Trần Anh Tú, Nguyễn Lê Dũng, Nguyễn Xuân Thành	F+I	8/2022	12/2022
2	MAT2.002	Probability and Statistics	4	40	20		20	M	Trần Hoàng Tùng, Nguyễn Mai Chung, Nguyễn Minh Hương	F	8/2022	12/2022
3	ICT2.001	Data Structures and Algorithms	3	36	20	16		M	Đoàn Nhật Quang, Nguyễn Minh Hương, Lê Hữu Tôn, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	8/2022	12/2022
4	ICT2.003	Object-Oriented Programming	4	40	30	10		M	Nghiêm Thị Phương, Trần Giang Sơn, Kiều Quốc Việt	F	9/2022	01/2023
5	ICT2.004	Signal and Systems	3	36	30		6	M	Trần Hoàng Tùng	F	9/2022	01/2023
6	ICT2.005	Fundamentals of databases	3	36	27	9		M	Nguyễn Hoàng Hà, Nguyễn Cẩm Linh, Huỳnh Vinh Nam	F+I	9/2022	01/2023
7	ICT2.008	Operating Systems	4	40	30		10	M	Daniel Hagimont, Lê Hữu Tôn, Giang Anh Tuấn, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	9/2022	01/2023

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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
8	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
9	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
10	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023
<b>Semester 2</b>												
11	ICT2.013	Advanced Programming with Python	4	40	30	10		M	Trần Giang Sơn, Kiều Quốc Việt, Nghiêm Thị Phương	F	02/2023	5/2023
12	CS2.001	Advanced Computer Architecture and x86 ISA	4	40	24	16		M	Daniel Chillet	I	02/2023	5/2023
13	ICT2.006	Computer Networks	4	40	30	10		M	Giang Anh Tuấn, Lương Trung Kiên, Trần Quý Ban	F+I	02/2023	5/2023
14	ICT3.001	Introduction to Cryptography	3	30	24		6	M	Nguyễn Minh Hương, Đoàn Nhật Quang, Giang Anh Tuấn	F	3/2023	6/2023
15	CS2.003	Law of Cyberspace and Ethics	4	40	28		12	M	Đỗ Trung Dũng	I	3/2023	6/2023
16	CS2.002	Network Programming	4	40	24	16		M	Giang Anh Tuấn	F	3/2023	6/2023
17	FR2.002	French 2.2	4	60	60			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
18	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023
19	ICT2.011	Mobile Wireless Communication	3	30	20		10	O	Nguyễn Minh Hương	F	3/2023	6/2023
20	ICT3.014	Network Simulation	3	30	20	10		O	Nguyễn Minh Hương	F	3/2023	6/2023

**5.2. TEACHING PLAN OF B3**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	CS3.001	Cloud Security and Privacy	4	40	24	16		M	Lê Anh Ngọc	I	8/2022	12/2022
2	CS3.002	Digital Forensics	4	40	24	16		M	Nicolas Sidere	I	8/2022	12/2022
3	CS3.003	Intrusion Detection and Prevention System	4	40	24	16		M	Phạm Thanh Giang	I	8/2022	12/2022
4	ICT3.005	Web application development	4	40	30	10		M	Nghiêm Thị Phương, Kiều Quốc Việt	F	9/2022	01/2023
5	CS3.005	Malware Analysis	4	40	24	16		M	Phạm Duy Trung	I	9/2022	01/2023
6	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, invited lecturer	F+I	9/2022	10/2022
7	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, invited lecturer	F+I	10/2022	11/2022
8	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023
<b>Semester 2</b>												
9	CS3.006	Administration of Computer Systems	3	30	20	10		M	Phạm Duy Trung	I	02/2023	3/2023
10	CS3.007	Data Integrity and Disaster Recovery	3	30	20	10		M	Lê Anh Ngọc	I	02/2023	3/2023
11	CS3.008	Web security	4	40	24	16		M	Hoàng Xuân Dậu	I	02/2023	3/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
12	ICT2.009	Software Engineering	3	36	26		10	O	Lê Minh Đức, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	02/2023	3/2023
13	ICT3.012	Distributed Systems	3	30	20	10		O	Astsatryan Hrach	I	02/2023	3/2023
14	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
15	GP3.001	Group Project	3					M				
16	IN3.001	Internship	15					M				

**ANNEX 6: TEACHING PLAN OF BACHELOR PROGRAM IN ELECTRICAL ENGINEERING AND RENEWABLE ENERGY IN 2022-2023**

*(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)*

**6.1. TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MAT2.001	Numerical Methods	3	36	21	15		M	Thái Minh Quân, Phan Thanh Hiền, Phạm Đức Bình, Trần Anh Tú, Nguyễn Lê Dũng, Nguyễn Xuân Thành	F+I	8/2022	12/2022
2	MAT2.002	Probability and Statistics	4	40	20		20	M	Trần Hoàng Tùng, Nguyễn Mai Chung, Nguyễn Minh Hương	F	8/2022	12/2022
3	EER2.003	Fluid Mechanics	3	42	30	12		M	Bùi Văn Tuấn	F	8/2022	01/2023
4	EER2.004	Thermodynamics 2	3	30	24	6		M	Nguyễn Hoàng Nam	I	8/2022	01/2023
5	EER2.005	Electrical circuit 1	4	50	30	12	8	M	Nguyễn Xuân Trường, Hoàng Trung Kiên	F	8/2022	01/2023
6	EER2.006	Conversion of Energy	3	37	22	10	5	M	Nguyễn Xuân Trường/Nguyễn Hồng Nam	F	8/2022	01/2023
7	AMS3.006	Materials for energy conversion and storage	3	36	28	8		M	Lê Thị Hương, Nguyễn Mai Chung	F	8/2022	01/2023
8	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
9	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
10	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023



No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 2</b>												
11	EER2.008	Applied Informatics in Electric and Energy Systems	2	24	12	12		M	Dương Việt Anh	F	02/2023	6/2023
12	EER2.009	Electrical circuits 2	4	50	30	14	6	M	Nguyễn Xuân Trường	F	02/2023	6/2023
13	EER2.010	Electrical energy storage	4	40	31	4	5	M	Hoàng Trung Kiên, Lê Thị Lý, Dương Việt Anh, Phạm Xuân Tùng	F	02/2023	6/2023
14	EER2.011	Electronics	4	39	30	9		M	Dương Quang Hà	F	02/2023	6/2023
15	EER2.012	Heat and mass transfer	4	50	38.5	6	5.5	M	Nguyễn Ngọc Hoàng	I	02/2023	6/2023
16	EER2.013	Product design 1	3	40	16	24		M	Thái Minh Quân	I	02/2023	6/2023
17	EER2.014	Sensors and Analytical devices	4	40	25	15		M	Dương Việt Anh, Phạm Xuân Tùng	I	02/2023	6/2023
18	EER2.015	Signal processing	2	30	25	2	3	M	Phan Anh Tuấn	F	02/2023	6/2023
19	FR2.002	French 2.2	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
20	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

**6.2. TEACHING PLAN OF B3**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	EER3.001	Control engineering	3	44	28	9	7	M	Phan Anh Tuấn	F	8/2022	12/2022
2	EER3.002	Electrical machines	4	45	28	9	8	M	Hoàng Trung Kiên	F	8/2022	12/2022
3	EER3.003	Electric transmission and distribution	3	30	20	0	10	M	Trần Thanh Sơn	I	8/2022	12/2022
4	EER3.004	Photovoltaic systems	4	48	30	12	6	M	Nguyễn Xuân Trường	F	8/2022	12/2022
5	EER3.005	Power electronics and applications	4	46	26	11	9	M	Hoàng Trung Kiên	F	8/2022	12/2022
6	EER3.006	Product design 2	3	40	16	24		M	Thái Minh Quân	I	8/2022	12/2022
7	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hòa, Phạm Thị Huyền, Invited lecturer	F+I	9/2022	10/2023
8	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hòa, Phạm Thị Huyền, inviting lecturers	F+I	10/2022	11/2022
9	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023
<b>Semester 2</b>												
10	EER3.007	Biomass & Biofuels	4	45	30	15		M	Nguyễn Hồng Nam	F	02/2023	3/2023
11	EER3.008	Energy economics and markets	2	20	20			M	Nguyễn Hoàng Lan	I	02/2023	3/2023
12	EER3.009	Smart-grid technology	4	40	20	10	10	M	Hoàng Trung Kiên/Phan Anh Tuấn	F	02/2023	3/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
13	EER3.010	Hydroelectric power	4	40	20	20		O	Lê Ngọc Thạch	I	02/2023	3/2023
14	EER3.013	Wind power	4	45	27	12	6	O	Hoàng Trung Kiên	F	02/2023	3/2023
15	EER3.018	Geothermal energy	4	48	24	14	10	O	Lại Hợp Phòng	I	02/2023	3/2023
16	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
17	EER3.014	Group project	3	0				M			01/2023	3/2023
18	EER3.015	Internship	9	0				M			4/2023	8/2023

## ANNEX 7: TEACHING PLAN OF BACHELOR PROGRAM IN ENGINEERING PHYSICS AND ELECTRONICS IN 2022-2023

(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)

### 7.1. TEACHING PLAN OF B2

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	EPE2.301	Mathematics for Physics	3	36	25		11	M	Phạm Tuấn Anh	I	9/2022	10/2022
2	MAT2.002	Probability and Statistics	4	40	20		20	M	Trần Hoàng Tùng, Nguyễn Mai Chung, Nguyễn Minh Hương	F	10/2022	12/2022
3	AMS2.201	Electromagnetism 2	3	30	24		6	M	Nguyễn Thị Ngọc	F	9/2022	10/2022
4	AMS2.202	Quantum Mechanics	3	30	24		6	M	Hoàng Thị Hồng Cẩm	F	9/2022	11/2022
5	AMS2.204	Optics	2	26	24		2	M	Nguyễn Thị Thanh Ngân	F	11/2022	12/2022
6	AMS2.203	Statistical Mechanics	3	30	24		6	M	Trịnh Xuân Hoàng	I	10/2022	11/2022
7	AMS2.205	Solid-state physics	3	36	30		6	M	Vũ Thị Thu	F	10/2022	12/2022
8	AMS2.208	Semiconductor	3	36	30		6	M	Nguyễn Thị Thanh Ngân	F	01/2023	02/2023
9	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, invited lecturer	F+I	12/2022	02/2023
10	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
11	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023

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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 2</b>												
12	EPE2.402	Integrated Computing	3	34	26	8		M	Nguyễn Thị Ngọc	F	02/2023	7/2023
13	EPE3.201	Microprocessor and Microcontroller	3	35	25	10		M	Dương Quang Hà	F	02/2023	7/2023
14	EPE2.107	Simulations for Physics	3	35	20	15		M	Nguyễn Tùng Anh, Nguyễn Tiến Anh	I	02/2023	7/2023
15	EPE2.108	Sensing technology	3	36	32		4	M	Nguyễn Thị Ngọc, Invited lecturer	F+I	02/2023	7/2023
16	EPE2.205	Electronic Devices	3	32	24	8		M	Nguyễn Văn Quyền	F	02/2023	7/2023
17	EPE2.201	Analog Electronics	3	40	30	10		M	Dương Quang Hà	F	02/2023	7/2023
18	EPE2.202	Digital Electronics	3	30	24	6		M	Dương Quang Hà	F	02/2023	7/2023
19	EPE2.203	Practical Electronics 1	2.5	25		25		M	Nguyễn Văn Quỳnh, Đinh Văn Tuấn	F+I	02/2023	7/2023
20	EPE2.204	Practical Electronics 2	2.5	25		25		M	Nguyễn Văn Quỳnh, Đinh Văn Tuấn	F+I	02/2023	7/2023
21	FR2.002	French 2.2	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
22	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

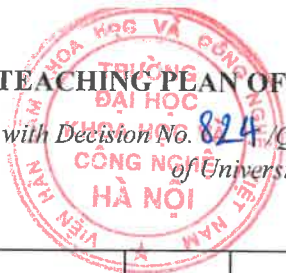
7.1. TEACHING PLAN OF B2

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	EPE3.506	Practical on microprocessor and microcontroller	4	40		40		M	Đinh Văn Tuấn	I	10/2022	01/2023
2	EPE3.103	Measurement technology	3	30	24	6		M	Nguyễn Lương Lâm, Nguyễn Văn Quỳnh	F	9/2022	10/2022
3	AMS3.209	Optoelectronics and nanophotonics	3	32	28	4		M	Nguyễn Thị Thanh Ngân	F	11/2022	12/2023
4	EPE3.203	Embedded system	3	35	10	25		M	Phạm Xuân Tùng	F	10/2022	01/2023
5	AMS3.007	Lasers	3	36	24	8	4	M	Nguyễn Thị Thanh Ngân, Tống Quang Công	F+I	11/2022	12/2023
6	AMS3.004	Nanoelectronics	3	30	20		10	M	Nguyễn Trần Thuật	I	11/2022	12/2023
7	EPE3.202	Digital integrated microsystem design	3	32	12	20		M	Invited lecturer	I	11/2022	12/2023
8	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	9/2022	10/2023
9	FR3.001	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	10/2022	11/2022
10	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 2</b>												
11	AMS3.010	Industrial process for solar cell fabrication	2	30	22	8	0	M	Invited lecturer	I	02/2023	7/2023
12	AMS3.009	Plasma Physics and Applications	3	36	24	10	2	O	Đỗ Hoàng Tùng	I	02/2023	7/2023
13	AMS2.306	Micro and Nanofabrication	3	30	24	6		O	Nguyễn Văn Quỳnh	F	02/2023	7/2023
14	EPE3.503	Materials for energy conversion and storage	3	36	28	8		O	Lê Thị Hương, Nguyễn Mai Chung	F	02/2023	7/2023
15	EPE3.105	Nonlinear Optics	3	32	24	8		O	Phạm Hồng Minh, Hoàng Thị Hồng Cẩm	F+I	02/2023	7/2023
16	AMS3.005	Silicon Photonics	3	30	26	4		O	Hoàng Thị Hồng Cẩm	F	02/2023	7/2023
17	MS3.002	Startups	2	20	20	0	0	O	Trần Minh Thu	I	02/2023	6/2023
18	EPE3.990	Group project	6					M			02/2023	7/2023
19	EPE3.999	Internship	15					M			02/2023	7/2023

ANNEX 8: TEACHING PLAN OF BACHELOR PROGRAM IN FOOD SCIENCE AND TECHNOLOGY IN 2022-2023

(Promulgated with Decision No. 824/QĐ-DHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)



8.1. TEACHING PLAN OF B2

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	FST2.004	Introduction to food science and technology	3	36	21	9	6	M	Tô Thị Mai Hương, Phạm Hoàng Nam	F	9/2022	02/2023
2	FST2.006	Food chemistry	3	45	28	11	6	M	Lê Hồng Luyến, Trần Tuấn Anh	F	9/2022	02/2023
3	FST2.007	Nutrition metabolism	3	30	24	6	0	M	Lê Trần Bình	I	9/2022	02/2023
4	FST2.009	Food microbiology	3	42	30	12	0	M	Phạm Hoàng Nam, Nguyễn Thị Trang Huyền	F	9/2022	02/2023
5	FST2.010	Food enzymology	3	30	24	6	0	M	Nguyễn Sỹ Lê Thanh	I	9/2022	02/2023
6	FST2.011	Food toxicology	3	30	30	0	0	M	Lê Thanh Hương	F	9/2022	02/2023
7	FST2.012	Process and equipment in food technology 1	3	30	21	9	0	M	Karthikeyan Venkatachalam	I	9/2022	02/2023
8	FST2.017	Food legislation and regulation	3	30	30	0	0	M	Đào Thế Anh	I	9/2022	02/2023
9	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
10	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
11	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023

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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 2</b>												
12	FST2.005	Biostatistic	3	33	24	0	9	M	Nguyễn Thị Vân Anh	F	02/2023	7/2023
13	FST2.008	Food physics	3	30	24	6	0	M	Nguyễn Tiến Cường	I	02/2023	7/2023
14	FST2.014	Food microbiological analysis	3	30	18	12	0	M	Phạm Hoàng Nam, Nguyễn Thị Trang Huyền	F	02/2023	7/2023
15	FST2.015	Food safety and sanitation	3	30	30	0	0	M	Karthikeyan Venkatachalam	I	02/2023	7/2023
16	FST2.016	Preservation technology	3	30	30	0	0	M	Hồ Phú Hà	I	02/2023	7/2023
17	FST2.018	Process and equipment in food technology 2	4	40	30	10	0	M	Đỗ Xuân Trường	I	02/2023	7/2023
18	FST2.019	Environmental safety in food industry	2	28	20	8	0	M	Mai Phương Nga	F	02/2023	7/2023
19	FST2.020	Introduction to Ecological Agriculture	2	28	20	8	0	M	Nguyễn Văn Phụng	F	02/2023	7/2023
20	FST2.023	Practical in Food chemistry	3	30	0	30	0	M	Bùi Quang Minh, Trương Ngọc Minh	I	02/2023	7/2023
21	FR2.002	French 2.2	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
22	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

## 8.2. TEACHING PLAN OF B3

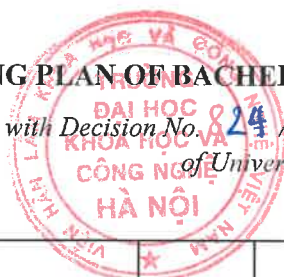
No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	FST3.001	Group Project	3					M			9/2022	02/2023
2	FST3.002	Refrigeration technology	3	30	27	3	0	M	Nguyễn Ngọc Hoàng	I	9/2022	02/2023
3	FST3.003	Package technology	3	30	30	0	0	M	Nguyễn Ngọc Hoàng	I	9/2022	02/2023
4	FST3.004	Food formulation technology	3	30	30	0	0	M	Huỳnh Tiến Đạt	I	9/2022	02/2023
5	FST3.005	Sensory evaluation of food products	2	20	20	0	0	M	Từ Việt Phú	I	9/2022	02/2023
6	FST3.008	Tropical fruit and vegetable technology	3	30	30	0	0	M	Võ Đình Lệ Tâm	I	9/2022	02/2023
7	FST3.010	Beverage technology	2	20	20	0	0	M	Nguyễn Tiến Thành	I	9/2022	02/2023
8	FST3.011	Aroma and food additives	2	20	20	0	0	M	Vũ Thị Minh Hằng	I	9/2022	02/2023
9	FST3.012	Seafood technology	2	30	30	0	0	M	Nguyễn Văn Minh	I	9/2022	02/2023
10	FST3.013	Food quality management	3	30	30	0	0	M	Lưu Thị Huệ	I	9/2022	02/2023
11	FST3.014	Post harvest Science and technology	2	30	30	0	0	O	Karthikeyan Venkatachalam	I	9/2022	02/2023
12	FST3.015	Functional Food	2	24	17	7	0	M	Lê Thanh Hương	F	9/2022	02/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
13	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	9/2022	10/2023
14	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	10/2022	11/2022
15	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023
<b>Semester 2</b>												
16	FST3.006	Practice on food technology	3	32	0	32	0	M	Phạm Hoàng Nam, Nguyễn Phương Nga	F	02/2023	3/2023
17	FST3.007	Meat technology	2	20	20	0	0	M	Lê Trung Thiên	I	02/2023	3/2023
18	FST3.009	Dairy technology	2	30	30	0	0	M	Lê Trung Thiên	I	02/2023	3/2023
19	FST3.016	Technology of tea, cocoa and coffee	2	30	30	0	0	O	Nguyễn Văn Tặng	I	02/2023	3/2023
20	FST3.018	Statistical analysis applied in Food Technology	2	30	10	0	20	O	Trần Văn Hùng	I	02/2023	3/2023
21	FST3.019	Basic of Food Factory design	2	30	30	0	0	O	Nguyễn Tiến Thành & Lê Tuấn	I	02/2023	3/2023
22	FST3.021	Food fat and oil processing technology	2	30	30	0	0	O	Võ Đình Lệ Tâm	I	02/2023	3/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
23	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
24	FST3.020	Internship	12					M			4/2023	9/2023

**ANNEX 9: TEACHING PLAN OF BACHELOR PROGRAM IN INFORMATION AND COMMUNICATION TECHNOLOGY IN 2022-2023**

*(Promulgated with Decision No. 24/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)*



**9.1. TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MAT2.001	Numerical Methods	3	36	21	15		M	Thái Minh Quân, Phan Thanh Hiền, Phạm Đức Bình, Trần Anh Tú, Nguyễn Lê Dũng, Nguyễn Xuân Thành	F+I	8/2022	12/2022
2	MAT2.002	Probability and Statistics	4	40	20		20	M	Trần Hoàng Tùng, Nguyễn Mai Chung, Nguyễn Minh Hương	F	8/2022	12/2022
3	ICT2.001	Data Structures and Algorithms	3	36	20	16		M	Đoàn Nhật Quang, Nguyễn Minh Hương, Lê Hữu Tôn, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	8/2022	12/2022
4	ICT2.003	Object-Oriented Programming	4	40	30	10		M	Nghiêm Thị Phương, Trần Giang Sơn, Kiều Quốc Việt	F	9/2022	01/2023
5	ICT2.004	Signal and system	3	36	30		6	M	Trần Hoàng Tùng	F	9/2022	01/2023
6	ICT2.005	Fundamentals of databases	3	36	27	9		M	Nguyễn Hoàng Hà, Nguyễn Cẩm Linh, Huỳnh Vinh Nam	F+I	9/2022	01/2023
7	ICT2.008	Operating Systems	4	40	30		10	M	Daniel Hagimont, Lê Hữu Tôn, Giang Anh Tuấn, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	9/2022	01/2023

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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
8	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
9	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
10	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023
<b>Semester 2</b>												
11	ICT2.013	Advanced Programming with Python	4	40	30	10		M	Trần Giang Sơn, Kiều Quốc Việt, Nghiêm Thị Phương	F	02/2023	5/2023
12	MAT2.004	Algebraic Structures	3	36	20		16	M	Đoàn Nhật Quang	F	02/2023	5/2023
13	ICT2.006	Computer Networks	4	40	30	10		M	Giang Anh Tuấn, Lương Trung Kiên, Trần Quý Ban	F	02/2023	5/2023
14	ICT2.009	Software Engineering	3	36	26		10	M	Lê Minh Đức, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	3/2023	6/2023
15	MAT2.005	Computational theory	3	36	30		6	M	Giang Anh Tuấn, Lương Trung Kiên, Trần Quý Ban	F	3/2023	6/2023
16	ICT2.007	Digital Signal Processing	3	36	30		6	M	Trần Hoàng Tùng	F	3/2023	6/2023
17	FR2.002	French 2.2	4	60	60			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
18	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
19	ICT2.010	Image Processing	3	36	27	9		O	Nghiêm Thị Phương, Trần Giang Sơn	F	3/2023	6/2023
20	ICT2.011	Mobile Wireless Communication	3	30	20		10	O	Nguyễn Minh Hương	F	3/2023	6/2023
21	ICT2.012	Software Testing and Quality Assurance	3	30	20	10		O	Trương Anh Hoàng	I	3/2023	6/2023

**9.2. TEACHING PLAN OF B3**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	ICT3.004	Object-Oriented System Analysis and Design	4	40	28		12	M	Đỗ Trung Dũng	I	8/2022	12/2022
2	ICT3.005	Web application development	4	40	30	10		M	Nghiêm Thị Phương, Kiều Quốc Việt	F	8/2022	12/2022
3	ICT3.002	Machine Learning and Data Mining 1	3	30	21	9		M	Lê Hữu Tôn, Đoàn Nhật Quang	F	8/2022	12/2022
4	ICT3.009	Graph Theory	3	36	31		5	M	Sebastian Basterrech	I	9/2022	01/2023
5	ICT3.003	Mobile Application Development	4	40	30	10		M	Trần Giang Sơn, Kiều Quốc Việt	F	9/2022	01/2023
6	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	9/2022	10/2022
7	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hòa, Phạm Thị Huyền, Invited lecturer	F+I	10/2022	11/2022
8	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023
	ICT3.006	Advanced databases	3	30	24	6		O	Nguyễn Hoàng Hà, Huỳnh Vinh Nam	F+I	11/2022	12/2022
10	ICT3.015	Computer Vision	3	30	20	10		O	Nguyễn Đức Dũng	I	11/2022	12/2022
<b>Semester 2</b>												
11	ICT3.008	Computer Graphics	3	36	30		6	M	Nguyễn Hoàng Hà, Huỳnh Vinh Nam	F+I	02/2023	3/2023



No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
12	ICT3.001	Introduction to Cryptography	3	30	24		6	M	Nguyễn Minh Hương, Đoàn Nhật Quang, Giang Anh Tuấn	F	02/2023	3/2023
13	ICT3.011	Machine Learning and Data Mining 2	3	36	20	16		M	Đoàn Nhật Quang, Lê Hữu Tôn, Huỳnh Vinh Nam	F	02/2023	3/2023
17	ICT3.013	Natural Language Processing	3	30	20	10		O	Phạm Quang Nhật Minh	I	02/2023	3/2023
18	ICT3.017	Introduction to Deep Learning	3	36	27	9		O	Nghiêm Thị Phương	F	02/2023	3/2023
19	ICT3.014	Network Simulation	3	30	20	10		O	Nguyễn Minh Hương	F	02/2023	3/2023
20	ICT3.012	Distributed Systems	3	30	20	10		O	Astsatryan Hrach	I	02/2023	3/2023
14	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
14	GP3.001	Group Project	3					M				
15	IN3.001	Internship	12					M				

**ANNEX 10: TEACHING PLAN OF BACHELOR PROGRAM IN MEDICAL SCIENCE AND TECHNOLOGY IN 2022-2023**

(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)



**10.1. TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
2	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
3	MST2.001	Human Anatomy and Physiology	4	51	36	15	0	M	Cần Văn Mão, Lê Văn Quân, Phạm Ngọc Thảo, Nguyễn Thanh Hằng	I	9/2022	12/2022
4	MST2.002	Advanced Cell Biology	3	37	27	10	0	M	Mai Thị Phương Nga, Nguyễn Thị Trang Huyền	F	10/2022	01/2023
5	MST2.003	Histology and Cytology	3	40	30	15	0	M	Nguyễn Phương Nga, Nguyễn Thị Trang Huyền	F	10/2022	01/2023
<b>Biomedical Sciences (BMS)</b>												
6	BIT2.001	Molecular Biology	4	48	40	8	0	M	Mai Thị Phương Nga	F	10/2022	12/2022
7	BIT2.002	Biochemistry II	4	40	32	8	0	M	Lê Thị Thu Hằng, Nguyễn Phương Nga	F	10/2022	12/2022
8	BIT2.003	Bioanalytical chemistry	3	30	19	4	7	M	Nguyễn Thị Kiều Oanh; Lê Hồng Luyến	F	11/2022	01/2023
9	MST2.005	Medical Mycology and Parasitology	3	40	30	10	0	M	Nicolas Papon; Nguyen Quang Huy	F+I	11/2022	12/2022

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
10	MST2.006	Medical Bacteriology	3	36	24	12	0	M	Nguyễn Quang Huy, Lê Thị Thu Hằng, Bùi Tiến Sỹ	F	10/2022	12/2022
<b>Biomedical Engineering (BME)</b>												
11	MAT2.001	Numerical Methods	3	36	21	15		M	Thái Minh Quân, Phan Thanh Hiền, Phạm Đức Bình, Trần Anh Tú, Nguyễn Lê Dũng, Nguyễn Xuân Thành	F+I	8/2022	12/2022
12	MST2.011	Signals and Systems	3	36	21	9	6	M	Phan Anh Tuấn	F	8/2022	02/2023
13	ICT2.001	Data Structures and Algorithms	3	36	20	16		M	Đoàn Nhật Quang, Nguyễn Minh Hương, Lê Hữu Tôn, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	8/2022	12/2022
14	MST2.012	Biomolecules and Cellular Engineering	4	44	36	8	0	M	Lê Thị Thu Hằng, Nguyễn Phương Nga	F	11/2022	02/2023
15	MST2.013	Medical Physics	3	40	30	15	0	M	Trần Anh Quang, Nguyễn Lương Lâm	F+I	10/2022	02/2023
<b>Semester 2</b>												
16	FR2.002	French 2.2	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
17	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
18	MST2.004	Human pathophysiology	3	33	27	6	0	M	Cần Văn Mão, Lê Văn Quân, Nguyễn Thanh Hằng, Nguyễn Trọng Viễn	I	02/2023	5/2023
<b>Biomedical Sciences (BMS)</b>												
19	MST2.007	Medical virology	3	40	32	8	0	M	Nguyễn Thị Thường	I	11/2022	02/2023
20	MST2.008	Immunology	4	40	36	4	0	M	Nguyễn Văn Đông or colleagues at 103 Hospital	I	02/2023	5/2023
21	MST2.009	Hematology	4	40	40	0	0	M	Marine CAQUOT	I	02/2023	5/2023
22	BIT2.008	Bioinformatics	3	35	20	0	15	M	Trần Thị Thanh Tâm, Chi Ying Huang	F	3/2023	6/2023
23	BIT2.011	Introduction to Animal Cell Biotechnology	3	30	21	9	0	M	Nguyễn Thị Hồng Minh Nguyễn Thị Trang Huyền Lê Thanh Hương	F	02/2023	6/2023
24	BIT2.004	Biostatistics	3	33	24	0	9	M	Nguyễn Thị Vân Anh	F	02/2023	6/2023
<b>Biomedical Engineering (BME)</b>												
25	MST2.014	Electronics	3	40	30	10	0	M	Trịnh Quang Kiên, Nguyễn Trọng Tuyển	F	12/2022	02/2023
26	MST2.015	Digital Electronics	3	30	24	6	0	M	Trịnh Quang Kiên	F	02/2023	5/2023
27	MST2.016	Biomedical Signals and electronic Circuits	4	60	30	30	0	M	Chuan Li, Nguyễn Trọng Tuyển	I	02/2023	5/2023
28	MST2.017	Physiological Signal Processing	3	36	20	16	0	M	Nguyễn Công Phương	I	02/2023	5/2023
29	MST2.018	Introduction to Medical Imaging	3	30	30	0	0	M	Phạm Thị Thu Hiền	I	02/2023	5/2023

<b>No.</b>	<b>Module Code</b>	<b>Modules</b>	<b>ECTS</b>	<b>Total teaching hours</b>	<b>Lecture Hours</b>	<b>Practical Hours</b>	<b>Tutorial Hours</b>	<b>Mandatory module (M)/ Optional module (O)</b>	<b>Lecturer</b>	<b>USTH fulltime lecturer (F)/ Invited lecturer (I)</b>	<b>Start Date</b>	<b>End Date</b>
30	MST2.019	Medical Image Processing	3	30	30	0	0	M	Nghiem Thị Phương	F	4/2023	6/3023
31	MST2.020	Practical in Biomedical Engineering	2	30	0	30	0	M	Nguyễn Trọng Tuyển	I	5/2023	6/2023

**10.2. TEACHING PLAN OF B3**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MST2.004	Human pathophysiology	3	33	27	6	0	M	Cần Văn Mão, Lê Văn Quân, Nguyễn Thanh Hằng, Nguyễn Trọng Viễn	I	02/2023	5/2023
2	MST3.023	Group Project	3					M			09/2022	11/2022
3	MST3.001	Biomedical materials	2	30	24	6	0	M	Nguyễn Đức Anh	F	10/2022	12/2022
4	MST3.003	Biomedical nanotechnology	3	30	24	6	0	M	Phạm Văn Nhất	F	10/2022	12/2022
5	MST3.004	Biosensors and Applications	3	30	18	12	0	M	Vũ Thị Thu	F	11/2022	02/2023
6	MST3.002	Tissue engineering	3	30	24	6	0	M	Nguyễn Thành Dương	I	12/2022	02/2023
7	MST3.005	Medical ethics	2	20	20	0	0	M	Nguyễn Đức Thuận	I	11/2022	12/2022
8	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	9/2022	10/2023
9	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hòa, Phạm Thị Huyền, inviting lecturers	F+I	10/2022	11/2022
10	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Biomedical Sciences (BMS)</b>												
11	BIT3.005	Introduction to Stem Cell	3	40	27	13	0	M	Invited lecturer	F	12/2022	02/2023
12	BIT3.006	Introduction to Medical Biotechnology	3	35	21	14	0	M	Nguyễn Quang Huy, Lê Thị Thu Hằng	F	10/2022	02/2023
13	BIT3.007	Protein Engineering	3	40	32	8	0	M	Mai Thị Phương Nga, Lê Thị Thu Hằng	F	10/2022	01/2023
14	MST3.007	Human Pathology	2	30	30	0	0	M	Nguyễn Văn Đô	I	10/2022	01/2023
15	MST3.006	Human Genetic and Diseases	3	36	24	12	0	M	Nguyễn Thùy Dương	I	9/2022	01/2023
16	MST3.010	Omics and Computational Biology	3	30	30	0	0	O	Nguyễn Cẩm Linh, Trần Thị Thanh Tâm	F	11/2022	01/2023
<b>Biomedical Engineering (BME)</b>												
17	MST3.013	Microprocessor system	3	36	30	6	0	M	Phạm Xuân Tùng	F	10/2022	12/2022
18	MST3.014	Medical Instrumentations	3	3 tuần	40	80	0	M	Viet Duc College of Medical Equipment Engineering	I	9/2022	11/2022
19	MST3.016	Programing with Python	2	30	30	0	0	M	Nguyễn Cẩm Linh	F	9/2022	10/2022
20	MST3.017	Artificial Intelligence and Machine Learning in Medicine	4	50	50	0	0	M	Nguyễn Cẩm Linh, Trần Giang Sơn	F	12/2022	02/2023
<b>Semester 2</b>												
21	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
22	BIT3.013	Introduction to Neuron Science	2	20	20	0	0	M	Witchuda Saengsawang	I	02/2023	4/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
23	MST3.024	Internship	9					M			4/2023	10/2023
<b>Biomedical Sciences (BMS)</b>												
24	MST3.008	Cancer Biology and Diagnostics	4	50	42	8	0	M	Nguyễn Phương Nga, Nguyễn Thị Trang Huyền	F	01/2023	7/2023
25	MST3.009	Molecular Markers for Diagnostics	3	30	24	6	0	O	Nguyễn Văn Đô, Nguyễn Quang Huy	F+I	01/2023	3/2023
26	MST3.011	Pharmacology and Toxicology	3	34	24	10	0	O	Nguyễn Thị Vân Anh	I	02/2023	3/2023
27	MST3.012	Molecular Medicine	3	30	24	6	0	O	Chu Đình Tới hoặc Dương Quốc Chính	F	01/2023	3/2023
28	BIT3.008	Advanced Biochemistry	3	45	30	7	8	O	Germain Trugnan, Nguyễn Phương Nga	F+I	01/2023	3/2023
<b>Biomedical Engineering (BME)</b>												
29	MST3.015	Bio-MEMS	3	30	24	6	0	M	Phạm Văn Nhất	F	12/2022	02/2023
30	MST3.018	Biomedical Signal Processing and Modelling	3	36	20	0	16	M	Nguyễn Công Phương	I	11/2022	02/2023
31	MST3.019	Computational Vision and Biological Perception	3	30	30	0	0	O	Nguyễn Cẩm Linh, Lê Hữu Tôn, Nguyễn Hoàng Hà	F	01/2022	3/2023
32	MST3.020	Medical Robotics and Rehabilitation	3	36	20	0	16	O	Vincent Bonnet or French lecturer	I	01/2022	3/2023
33	MST3.021	Biomechanics	3	30	30	0	0	O	Chuan Li	I	01/2022	3/2023
34	MST3.022	Imaging diagnostics	3	30	30	0	0	O	Lê Văn Quân, Phạm Ngọc Thảo, Nguyễn Thị Hà	I	01/2022	3/2023



**ANNEX 11: TEACHING PLAN OF BACHELOR PROGRAM IN PHARMACOLOGICAL, MEDICAL AND AGRONOMICAL BIOTECHNOLOGY IN**

**2022-2023**

*(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)*



**11.1. TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	BIT2.001	Organic Chemistry	3	30	24		6	M	Trần Tuấn Anh	F	10/2022	01/2023
2	BIT2.002	Biochemistry 2	4	40	32	8		M	Nguyễn Phương Nga Lê Thị Thu Hằng	F	10/2022	01/2023
3	BIT2.003	Bioanalytical Chemistry	3	35	19	6	10	M	Nguyễn Thị Kiều Oanh Lê Hồng Luyện	F	10/2022	01/2023
4	BIT2.004	Integrated Physiology part 2 (Plant)	3	30	24	0	6	M	Lê Thị Vân Anh	F	10/2022	01/2023
5	BIT2.005	Principles of Immunology	4	40	36	4		M	Trần Thị Thu Phương	F	10/2022	01/2023
6	BIT2.006	Introduction to Enzymology	4	40	31	9		M	Gilles Truan Mai Thị Phương Nga Lê Thị Thu Hằng	F+I	10/2022	01/2023
7	BIT2.007	Molecular Biology	4	48	40	8		M	Mai Thị Phương Nga	F	10/2022	01/2023
8	FR2.001	French 2.1	4	60	60			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023

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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
9	MS2.005	Basic Principles of Project Management	2	20	20			O	Nguyễn Văn Hùng	I	9/2022	02/2023
10	PHI2.001	Philosophy	0	30	30			M	Trần Xuân Bình	I	9/2022	02/2023
<b>Semester 2</b>												
11	BIT2.008	Biostatistics	3	33	24		9	M	Nguyễn Thị Vân Anh	F	02/2023	6/2023
12	BIT2.009	Applied Microbiology	3	30	18	12		M	Tô Thị Mai Hương Nguyễn Quang Huy Nguyễn Văn Phụng	F	02/2023	6/2023
13	BIT2.010	Integrated Physiology part 1 (Animal)	3	36	27	6	3	M	Tepmanas Bupha-Intr Nguyễn Thị Trang Huyền	F	02/2023	6/2023
14	BIT2.011	Introduction to Plant Cell Biotechnology	3	30	12	18		M	Lê Thị Vân Anh	F	02/2023	6/2023
15	BIT2.012	Introduction to Animal Cell Biotechnology	3	30	21	9		M	Nguyễn Thị Hồng Minh, Nguyễn Thị Trang, Huyền, Lê Thanh Hương	F	02/2023	6/2023
16	BIT2.013	Drug development and medicinal chemistry	4	40	30	10		M	Nguyễn Thị Kiều Oanh Nguyễn Hải Đăng	F	02/2023	6/2023
17	BIT2.014	Developmental Biology	3	30	21		9	O	Siripong Thitamadee	I	02/2023	6/2023
18	BIT2.015	Frontiers in Marine Biology	3	30	30			O	Lee Sang Hoon	I	02/2023	6/2023
19	BIT2.016	Plant Genetics and Breedings	3	30	25		5	O	Nguyễn Văn Phụng	F	02/2023	6/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
20	BIT2.017	Basics on Phytomedicine and Natural Product Drugs	3	30	20	10		O	Lê Hồng Luyến	F	02/2023	6/2023
21	BIT2.018	Medical Virology	3	40	32	8		O	Nguyễn Thị Thương	I	02/2023	6/2023
22	FR2.002	French 2.2	4	60	60			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
23	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

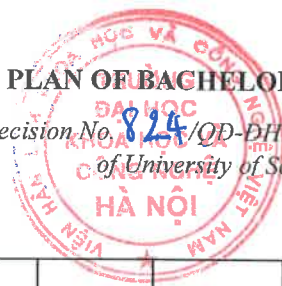
### 11.2. TEACHING PLAN OF B3

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	BIT3.001	Group Project	3					M			10/2022	01/2023
2	BIT3.002	Basic Pharmacology	4	40	30	10	0	M	Nguyễn Thị Vân Anh	F	10/2022	01/2023
3	BIT3.003	Basic Pharmaceutics	3	40	30	10	0	M	Nguyễn Thị Kiều Oanh	F	10/2022	01/2023
4	BIT3.004	Bioinformatics	3	30	15	0	15	M	Chi Ying Huang Trần Thị Thanh Tâm	F+I	10/2022	01/2023
5	BIT3.005	Introduction to Stem Cell	3	40	27	0	13	M	Patompon Wongtrakoongate	I	10/2022	01/2023
6	BIT3.006	Introduction to Medical Biotechnology	3	35	21	14	0	M	Nguyễn Quang Huy	F	10/2022	01/2023
7	BIT3.007	Protein Engineering	3	40	32	8	0	M	Mai Thị Phương Nga Lê Thị Thu Hằng	F	10/2022	01/2023
8	BIT3.008	Advanced Biochemistry	3	45	30	7	8	M	Germain Trugnan Nguyễn Phương Nga	F+I	10/2022	01/2023
9	BIT3.009	Introduction to Biopharmaceutical Science	2	30	24	6	0	M	Trần Thị Thu Phương Nguyễn Thị Kiều Oanh	F	10/2022	01/2023
13	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	9/2022	10/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
14	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hòa, Phạm Thị Huyền, Invited lecturer	F+I	10/2022	11/2022
15	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023
<b>Semester 2</b>												
11	BIT3.010	Introduction to Food Biotechnology	3	40	28	12	0	M	Tô Thị Mai Hương Phạm Hoàng Nam	F	02/2023	6/2023
12	BIT3.011	Plant Metabolic Engineering	3	30	30	0	0	M	Nguyễn Văn Phương Tô Thị Mai Hương	F	02/2023	6/2023
13	BIT3.012	Fermentation Technology	2	24	18	6	0	O	Phạm Hoàng Nam Nguyễn Quang Huy	F	02/2023	6/2023
14	BIT3.013	Introduction to Neuron Science	2	20	20	0	0	O	Witchuda Sangsawang	I	02/2023	6/2023
15	BIT3.014	Pathogenic Microbiology	2	24	18	6	0	O	Nguyễn Quang Huy	F	02/2023	6/2023
16	FST3.015	Functional food	2	24	17	7	0	O	Lê Thanh Hương	F	02/2023	6/2023
17	BIT3.015	Plant Micro - organism	2	20	18	0	2	O	Nguyễn Văn Phương	F	02/2023	6/2023
20	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
21	BIT3.016	Internship	12					M			4/2023	9/2023

ANNEX 12: TEACHING PLAN OF BACHELOR PROGRAM IN SPACE SCIENCE AND SATELLITE TECHNOLOGY IN 2022-2023

(Promulgated with Decision No. 824/QĐ-DHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)



TEACHING PLAN OF B2

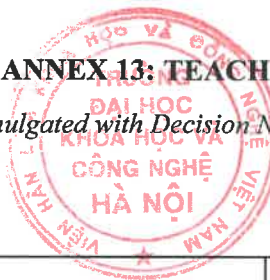
No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MAT2.001	Numerical Methods	3	36	21	15		M	Thái Minh Quân, Phan Thanh Hiền, Phạm Đức Bình, Trần Anh Tú, Nguyễn Lê Dũng, Nguyễn Xuân Thành	F+I	8/2022	12/2022
2	MAT2.002	Probability and Statistics	4	40	20		20	M	Trần Hoàng Tùng, Nguyễn Mai Chung, Nguyễn Minh Hương	F	8/2022	12/2022
3	SA2.002	Introduction to Astronomy	3	40	30	10		M	Phan Thanh Hiền	F	8/2022	01/2023
4	AMS2.001	Electromagnetism 2	3	30	24	6		M	Nguyễn Thị Ngọc	F	8/2022	01/2023
5	SA2.003	Classical Mechanics 2	3	36	30	6		M	Nguyễn Thị Hồng Vân	I	8/2022	01/2023
6	EER2.003	Fluid Mechanics	3	42	30	12		M	Bùi Văn Tuấn	F	8/2022	01/2023
7	SA2.005	Thermodynamics 2	3	30	24	6		M	Nguyễn Hoàng Nam, Nguyễn Hồng Nam	I	8/2022	01/2023
8	PHY2.005	Mechanics of Materials	3	52	36	16		M	Nguyễn Văn Tăng	F	8/2022	01/2023
9	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
10	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023



No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
11	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023
<b>Semester 2</b>												
12	SA2.007	Introduction to Geographic Information System	2	30	10	20		M	Tổng Sĩ Sơn	F	02/2023	6/2023
13	SA2.008	Quantum Mechanics	3	36	26	10		M	Nguyễn Trần Thuật	I	02/2023	6/2023
14	SA2.009	Solar system and celestial mechanics	3	36	20	16		M	Phan Thanh Hiền	F	02/2023	6/2023
15	SA2.010	Electronics	4	40	30	10		M	Dương Quang Hà	F	02/2023	6/2023
16	SA2.011	Data analysis and visualisation	2	24	14	10		M	Hoàng Đức Thương	F	02/2023	6/2023
17	SA2.012	Fundamental of Remote Sensing	3	36	21	15		M	Tổng Sĩ Sơn	F	02/2023	6/2023
18	SA2.013	Introduction to Earth System	3	36	24	12		M	Ngô Đức Thành	F	02/2023	6/2023
19	EER2.013	Product design 1	3	40	16	24		M	Thái Minh Quân	I	02/2023	6/2023
20	SA2.004	Automatism and Industrial data processing	2	30	20	10		M	Phan Thanh Hòa	I	02/2023	6/2023
21	FR2.002	French 2.2	4	60	60			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
22	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

**ANNEX 13: TEACHING PLAN OF BACHELOR PROGRAM IN SPACE AND APPLICATIONS IN 2022-2023**

(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)



**TEACHING PLAN OF B3**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	SA3.011	Climate Modelling	3	36	24	12		M	Ngô Đức Thành	F	8/2022	12/2022
2	SA3.002	Signal and Image processing in space applications	4	40	25	15		M	Nguyễn Công Phương	I	8/2022	12/2022
3	SA3.009	Data acquisition & Satellite sensors	3	36	15	21		M	Tống Sĩ Sơn, Phạm Đức Bình	F	8/2022	12/2022
4	SA3.003	Space System Design 1 (satellite)	3	36	20	16		M	Lê Xuân Huy, Nguyễn Tiến Sự	I	8/2022	12/2022
5	SA3.017	Modern Astrophysics	3	42	30	12		M	Phạm Ngọc Diệp	I	8/2022	12/2022
6	EER3.006	Product Design 2	3	36	6	30		M	Thái Minh Quân	I	8/2022	12/2022
7	SA3.007	Introduction to Relativity	2	24	15	9		M	Guillaume Patanchon, Bùi Văn Tuấn	I	8/2022	12/2022
8	SA3.005	Particle physics	3	30	24	6		M	Nguyễn Thị Hồng Vân	I	01/2023	3/2023
9	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	9/2022	10/2023



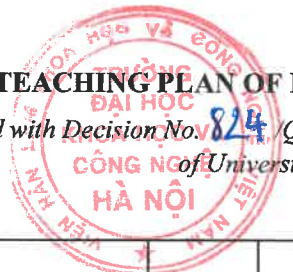
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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
10	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	10/2022	11/2022
11	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023
<b>Semester 2</b>												
12	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
13	SA3.006	Communication, Antenna and Microwaves	4	40	34		6	M	Dương Quang Hà	F	01/2023	3/2023
14	SA3.008	Radar remote sensing of Earth's surface	3	36	15		21	M	Thierry Koleck, Đặng Vũ Khắc	I	01/2023	3/2023
15	SA3.010	Space System Design 2 (satellite)	3	36	16		20	M	Lê Xuân Huy	I	01/2023	3/2023
16	SA3.012	Photonics and optics	3	30	20		10	M	Phan Thanh Hiền	F	01/2023	3/2023
17	SA3.013	Monitoring natural disasters by using satellite data	2	24	10		14	M	Phạm Đức Bình	F	01/2023	3/2023
18	SA3.015	Group Project	3					M			01/2023	3/2023
19	SA3.016	Internship	9					M			4/2023	7/2023

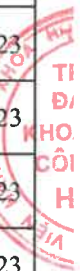
**ANNEX 14: TEACHING PLAN OF BACHELOR PROGRAM IN APPLIED ENVIRONMENTAL SCIENCES IN 2022-2023**

(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)



**TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MAT2.002	Probability and Statistics	4	40	20		20	M	Trần Hoàng Tùng, Nguyễn Mai Chung, Nguyễn Minh Hương	F	8/2022	12/2022
2	AES2.022	Environmental analytical chemistry	4	48	36	12		M	Bùi Văn Hợi	F	9/2022	02/2023
3	AES2.002	Ecology and Biodiversity	3	36	22	6	8	M	Girley Gumanao	I	9/2022	02/2023
4	AES2.004	Fundamental microbiology	3	32	24	8		M	Phạm Thùy Linh	I	9/2022	02/2023
5	AES2.020	Green Chemistry	2	24	14	10		M	Lê Phương Thu, Bùi Đức Trung	F+I	9/2022	02/2023
6	AES2.012	Water pollution	4	48	39	9		M	Mai Hương	F	9/2022	02/2023
7	EER2.003	Fluid Mechanics	3	42	30	12		M	Bùi Văn Tuấn	F	9/2022	02/2023
8	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
9	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
10	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023
<b>Semester 2</b>												
11	AES2.006	Climate change	3	30	18	2	10	M	Ngô Đức Thành	F	02/2023	7/2023

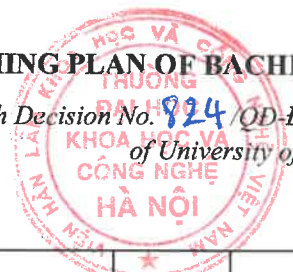


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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
12	AES2.007	Environmental Toxicology	3	36	24	12		M	Mai Hương	F	02/2023	7/2023
13	AES2.008	Hydrology	3	36	24	6	6	M	Nguyễn Quốc Sơn	F	02/2023	7/2023
14	AES2.009	Oceanography	2	30	23		7	M	Phạm Tiến Đạt	I	02/2023	7/2023
15	AES2.010	Soil science	3	36	26	10		M	Christian Valentin, Mai Hương	F+I	02/2023	7/2023
16	AES2.021	Engineering Drawing	3	36	24		12	M	Nguyễn Thế Lương	I	02/2023	7/2023
17	AES2.017	Electrochemistry	2	24	18	6		M	Lê Phương Thu, Đinh Thị Mai Thanh	F	02/2023	7/2023
18	AES2.013	Atmospheric pollution	2	30	20	6	4	M	Hoàng Anh Lê	I	02/2023	7/2023
19	AES2.023	Geographic information system for environment management	2	24	10	14		M	Tống Sĩ Sơn, Nguyễn Quốc Sơn	F	02/2023	7/2023
20	AES2.014	Solid and Hazardous Waste Management	2	24	15	9		O	Đào Thành Dương	F	02/2023	7/2023
21	AES2.016	Soil Pollution	2	24	20	4		O	Mai Hương	F	02/2023	7/2023
22	AES2.018	Frontiers in Marine Sciences	2	24	18		6	O	Nguyễn Thanh Hiền	F	02/2023	7/2023
23	AES2.019	Environment and Public Health	2	24	24			O	Phạm Lê Anh	F	02/2023	7/2023
24	FR2.002	French 2.2	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
25	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

**ANNEX 15: TEACHING PLAN OF BACHELOR PROGRAM IN WATER - ENVIRONMENT - OCEANOGRAPHY IN 2022-2023**

(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)



**TEACHING PLAN OF B3**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	WEO3.001	Basic spectroscopy and analyses	3	36	24	12		M	Bùi Văn Hợi	F	9/2022	02/2023
2	WEO3.005	Environmental management	2	24	20		4	M	Mai Hương, Nguyễn Thanh Hiền	F	9/2022	02/2023
3	WEO3.006	Metal and catalysis	4	48	32	16		M	Lê Phương Thu, Đinh Thị Mai Thanh	F	9/2022	02/2023
4	WEO3.013	Photochemistry	2	24	18	6		M	Lê Phương Thu, Đinh Thị Mai Thanh	F	9/2022	02/2023
5	WEO3.009	Advanced Oceanography	3	30	20		10	M	Phạm Tiến Đạt	I	9/2022	02/2023
6	WEO3.010	Analytical separation methods	3	36	30	6		M	Vũ Cẩm Tú, Bùi Văn Hợi	F	9/2022	02/2023
7	WEO3.012	Environmental impact assessment	2	24	15	9		M	Đào Thành Dương	F	9/2022	02/2023
8	WEO3.019	Biological wastewater treatment modelling	2	24	24			O	Phạm Lê Anh	F	9/2022	02/2023
9	WEO3.020	Group project	3	36	6	30		M	Tô Thị Mai Hương	F	9/2022	02/2023
10	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	9/2022	10/2023



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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
11	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	10/2022	11/2022
12	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023
<b>Semester 2</b>												
13	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023
14	WEO3.021	Internship	9					M		I	3/2023	9/2023

$\sum B_2 + B_3 = 110$  [avec tous les autres]!

Ok vu avec Hai Dung

Au revoir exceptionnelle ————



**ANNEX 16: TEACHING PLAN OF BACHELOR PROGRAM IN MECHATRONICS ENGINEERING TECHNOLOGY IN 2022-2023**

*(Promulgated with Decision No. 824 /QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)*



**16.1. TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MET2.001	Introduction to mechatronics	2	28	14	10	4	M	Nguyễn Văn Trường, Dương Việt Anh	F+I	8/2022	01/2023
2	MET2.002	General mechanics of rigid solids 1	2	30	21		9	M	Dương Việt Anh	F	8/2022	01/2023
3	MET2.003	Electrical engineering 1	4	50	30	12	8	M	Hoàng Trung Kiên/Nguyễn Xuân Trường	F	8/2022	01/2023
4	MET2.004	Analogical electronics	4	64	44	12	8	M	Phạm Duy An	F	8/2022	01/2023
5	MAT2.001	Numerical Methods	3	36	21	15		M	Thái Minh Quân, Phan Thanh Hiền, Phạm Đức Bình, Trần Anh Tú, Nguyễn Lê Dũng, Nguyễn Xuân Thành	F+I	8/2022	12/2022
6	MAT2.002	Probability and Statistics	4	40	20		20	M	Trần Hoàng Tùng, Nguyễn Mai Chung, Nguyễn Minh Hương	F	8/2022	12/2022
7	MET2.005	Object oriented programming	4	40	30	10		M	Nghiêm Thị Phương	F	8/2022	01/2023
8	MET2.006	Micro-processor and micro-controller	3	35	25	10		M	Phạm Xuân Tùng	F	8/2022	01/2023
9	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
10	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
11	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023

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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 2</b>												
12	MET2.007	Digital electronics	4	62	48	8	6	M	Phạm Duy An	F	02/2023	6/2023
13	EER2.014	Sensors and analytical devices	4	35	22	13		M	Dương Việt Anh, Phạm Xuân Tùng	F	02/2023	6/2023
14	MET2.008	Math for the mechanical engineers	3	45	30		15	M	Nguyễn Việt Khoa	I	02/2023	6/2023
15	MET2.009	General mechanics of rigid solids 2	4	60	40		20	M	Nguyễn Lương Thiện	I	02/2023	6/2023
16	MET2.010	Material 1	3	36	26	3	7	M	Nguyễn Văn Tăng	F	02/2023	6/2023
17	MET2.011	Design 1	4	40	16	24		M	Thái Minh Quân	I	02/2023	6/2023
18	MET2.012	PLC programming	2	24	14	10		M	Dương Việt Anh	F	02/2023	6/2023
19	MET2.013	Manufacturing 1	3	45	30	6	9	M	Phạm Văn Bạch Ngọc, Phạm Xuân Tùng	F+I	02/2023	6/2023
20	MET2.014	Entrepreneurship: From idea to market	0	16	12	4		M	Vũ Hương	I	02/2023	6/2023
21	FR2.002	French 2.2	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
22	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

16.2. TEACHING PLAN OF B3

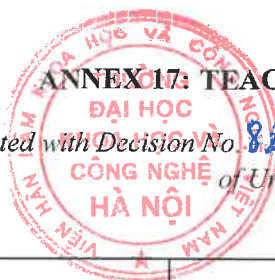
No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MET3.001	Summer internship	4					M			8/2022	12/2022
2	MET3.002	Non-metallic materials	3	36	19	10	7	M	Nguyễn Anh Tuấn	I	8/2022	12/2022
3	MET3.003	Manufacturing 2	3	45	26	7	12	M	Phạm Văn Bạch Ngọc, Phạm Xuân Tùng	F+I	8/2022	12/2022
4	MET3.004	Industrialization	3	36	26	3	7	M	Nguyễn Thị Xuân Hoà	I	8/2022	12/2022
5	MET3.005	Signal processing	3	40	23	8	9	M	Phan Anh Tuấn	F	8/2022	12/2022
6	MET3.006	Design 2	4	40	16	24		M	Thái Minh Quân	I	8/2022	12/2022
7	MET3.007	Automatic control 1	3	44	28	9	7	M	Phan Anh Tuấn	F	8/2022	12/2022
8	MET3.008	Embedded system	3	35	10	25		M	Phạm Xuân Tùng	F	8/2022	12/2022
9	FR3.001	French 3.1	4	66	66			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	9/2022	10/2023
10	FR3.002	French 3.2	3	34	34			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	10/2022	11/2022
11	MS3.001	Scientific Writing and Communication	2	20	20			O	Tô Thị Mai Hương	F	9/2022	02/2023
<b>Semester 2</b>												
12	MS3.002	Startups	2	20	20			O	Trần Minh Thu	I	02/2023	6/2023



No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
13	MET3.009	Automatic control 2	3	36	23	6	7	M	Dương Việt Anh	F	01/2023	3/2023
14	MET3.010	Group project	3					M			01/2023	3/2023
15	MET3.011	Control of automated system	2	24	18		6	M	Trịnh Lương Miên	I	01/2023	3/2023
16	EER3.005	Power electronics and applications	4	46	26	11	9	M	Hoàng Trung Kiên	F	01/2023	3/2023
17	MET3.012	Electrical engineering 2	3	38	19	10	9	O	Hoàng Trung Kiên	F	01/2023	3/2023
18	MET3.013	Materials 2	3	36	26	3	7	O	Nguyễn Anh Tuấn	I	01/2023	3/2023
19	MET3.014	Management of manufacturing	4	49	27	10	12	O	Nguyễn Thị Xuân Hoà	I	01/2023	3/2023
20	MET3.015	Internship	9					O			4/2023	6/2023

ANNEX 17: TEACHING PLAN OF BACHELOR PROGRAM IN DATA SCIENCE IN 2022-2023

(Promulgated with Decision No. 824 /QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)



TEACHING PLAN OF B2

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	MAT2.001	Numerical Methods	3	36	21	15		M	Thái Minh Quân, Phan Thanh Hiền, Phạm Đức Bình, Trần Anh Tú, Nguyễn Lê Dũng, Nguyễn Xuân Thành	F+I	8/2022	12/2022
2	DS2.004	Probability	3	36	18		18	M	Đoàn Nhật Minh	I	8/2022	12/2022
3	ICT2.001	Data Structures and Algorithms	3	36	20	16		M	Đoàn Nhật Quang, Nguyễn Minh Hương, Lê Hữu Tôn, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	8/2022	12/2022
4	ICT2.003	Object-Oriented Programming	4	40	30	10		M	Nghiêm Thị Phương, Trần Giang Sơn, Kiều Quốc Việt	F	9/2022	01/2023
5	ICT2.004	Signal and Systems	3	36	30		6	M	Trần Hoàng Tùng	F	9/2022	01/2023
6	ICT2.005	Fundamentals of databases	3	36	27	9		M	Nguyễn Hoàng Hà, Nguyễn Cẩm Linh, Huỳnh Vinh Nam	F+I	9/2022	01/2023
7	ICT3.002	Machine Learning and Data Mining 1	3	30	21	9		M	Lê Hữu Tôn, Đoàn Nhật Quang	F	8/2022	12/2022
8	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023



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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
9	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
10	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023
<b>Semester 2</b>												
11	ICT2.013	Advanced Programming with Python	4	40	30	10		M	Trần Giang Sơn, Kiều Quốc Việt, Nghiêm Thị Phương	F	02/2023	5/2023
12	MAT2.004	Algebraic Structures	3	36	20		16	M	Đoàn Nhật Quang	F	02/2023	5/2023
13	DS2.005	Statistics	3	36	18		18	M	Hồ Đăng Phúc	I	02/2023	5/2023
14	ICT2.009	Software Engineering	3	36	26		10	M	Lê Minh Đức, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	3/2023	6/2023
15	DS2.001	Introduction to Artificial Intelligence	3	30	30			M	Nguyễn Việt Anh	I	3/2023	6/2023
16	ICT3.011	Machine Learning and Data Mining 2	3	36	20	16		M	Đoàn Nhật Quang, Lê Hữu Tôn, Huỳnh Vinh Nam	F	02/2023	3/2023
17	ICT2.010	Image Processing	3	36	27	9		M	Nghiêm Thị Phương, Trần Giang Sơn	F	3/2023	6/2023
18	DS2.002	Fundamentals of optimization	3	30	16		14	M	Lê Xuân Thanh	I	3/2023	6/2023
19	DS2.003	Applied Statistics and Experimental Design	3	36	18		18	M	Đoàn Thái Sơn	I	3/2023	6/2023
20	FR2.002	French 2.2	4	60	60			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
21	MS2.006	Intellectual Property Management	2	20	18		2	O	Lê Thị Thu Hiền	I	02/2023	6/2023

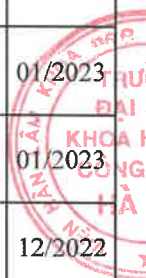
**ANNEX 18: TEACHING PLAN OF BACHELOR PROGRAM IN AUTOMOTIVE ENGINEERING IN 2022-2023**

*(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)*



**TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	ATE2.001	Introduction to automotive engineering	2	24	18		6	M	Phạm Xuân Tùng	F	8/2022	01/2023
2	ATE2.002	General mechanics of rigid solids	3	45	30		15	M	Dương Việt Anh	F	8/2022	01/2023
3	ATE2.003	Analog and digital electronics	3	45	30	10	5	M	Phạm Duy An	F	8/2022	01/2023
4	EER2.003	Fluid Mechanics	3	42	30	12		M	Bùi Văn Tuấn	F	8/2022	01/2023
5	MAT2.002	Probability and Statistics	4	40	20		20	M	Trần Hoàng Tùng, Nguyễn Mai Chung, Nguyễn Minh Hương	F	8/2022	12/2022
6	ATE2.004	Automobile structure	4	47	34	5	8	M	Lê Huệ Tài Minh	F	8/2022	01/2023
7	ATE2.005	Principles of internal combustion engine	3	45	30	15		M	PGS. TS. Nguyễn Thế Lương, Lê Huệ Tài Minh	F+I	8/2022	01/2023
8	ATE2.006	Electrical engineering	3	45	24	9	12	M	Hoàng Trung Kiên	F	8/2022	01/2023
9	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
10	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
11	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023



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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 2</b>												
12	FR2.002	French 2.2	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	3/2023	5/2023
13	MS2.006	Intellectual property management	1	20	16	2	2	O	Lê Thị Thu Hiền	I	02/2023	6/2023
14	ATE2.007	Mechanics of materials	3	45	30	0	15	M	Nguyễn Lương Thiện	I	02/2023	6/2023
15	EER2.014	Sensors and Analytical devices	4	40	25	15		M	Dương Việt Anh, Phạm Xuân Tùng	I	02/2023	6/2023
16	MET2.008	Math for the mechanical engineers	3	45	30		15	M	Nguyễn Việt Khoa	I	02/2023	6/2023
17	ATE2.008	Material	3	36	26	3	7	M	Nguyễn Văn Tăng	F	02/2023	6/2023
18	ATE2.009	Machine design	3	45	27	6	12	M	Bùi Văn Hưng	I	02/2023	6/2023
19	ATE2.010	Technical drawing	3	45	20	15	10	M	Phạm Xuân Tùng	I	02/2023	6/2023
20	ATE2.011	Automotive theory	4	46	36	0	10	M	Lê Huệ Tài Minh	F	02/2023	6/2023
21	ATE2.012	Automobile design	3	45	39	0	6	M	Nguyễn Trung Kiên	I	02/2023	6/2023

## ANNEX 19: TEACHING PLAN OF BACHELOR PROGRAM IN AERONAUTICAL ENGINEERING IN 2022-2023

(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Training plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)

### 19.1. TEACHING PLAN OF B1

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	ENG1.012	English Academic Writing	3	36	36			M	Nguyễn Thị Ngọc Thảo, Nguyễn Hồng Nga, Nguyễn Ngọc Anh, Đỗ Thùy Linh, Bùi Phương Hà, GV thỉnh giảng	F+I	10/2022	2/2023
2	ENG1.014	English Listening and Note-taking	2	28	28		B	M	Nguyễn Thị Ngọc Thảo, Nguyễn Hồng Nga, Nguyễn Ngọc Anh, Đỗ Thùy Linh, Bùi Phương Hà, GV thỉnh giảng	F+I	10/2022	2/2023
3	ENG1.013	English Presentation	3	36	36			M	Nguyễn Thị Ngọc Thảo, Nguyễn Hồng Nga, Nguyễn Ngọc Anh, Đỗ Thùy Linh, Bùi Phương Hà, GV thỉnh giảng	F+I	10/2022	2/2023
4	AE1.016	Calculus 1	3	36	18		18	M	Lê Hải Khôi, Lương Thái Hưng, Đỗ Hoàng Sơn, Nguyễn Huyền Mười, Phạm Việt Hùng	F+I	10/2022	2/2023
5	AE1.017	Linear Algebra	3	40	20		20	M	Nguyễn Việt Dũng, Nguyễn Bích Vân, Lê Xuân Thanh, Lê Hải Yên, Hoàng Lê Trường, Hà Minh Lam, Phong Thị Thu Huyền	F+I	10/2022	2/2023
6	AE1.018	Introduction to Informatics	4	47	32	15		M	Nguyễn Đức Dũng, Phan Thanh Hiền, Phạm Đức Bình, Trần Anh Tú, Nguyễn Lê Dũng, Nguyễn Xuân Thành	I	10/2022	2/2023



No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
7	AE1.019	Mechanics 1 & Thermodynamics	4	48	40	8		M	Bùi Văn Tuấn	F	10/2022	2/2023
8	AE1.001	Electricity & Electromagnetism 1	3	46	36	10		M	Ngô Quang Minh	F	10/2022	2/2023
9	AE1.007	Introduction to Aeronautics 2	3	36	30		6	M	Nguyễn Văn Tăng	F	10/2022	2/2023
10	AE1.003	Classical optics and wave optics	2	24	20	4		M	Phí Thị Mai Linh	F	10/2022	2/2023
<b>Semester 2</b>												
11	MAT1.003	Calculus 2	3	36	18		18	M	Lê Hải Khôi, Lương Thái Hưng, Đỗ Hoàng Sơn, Nguyễn Huyền Mười, Phạm Việt Hùng	F+I	2/2023	6/2023
12	ICT1.002	Basic programming	4	40	28	12		M	Nguyễn Hoàng Hà, Nguyễn Minh Hương, Giang Anh Tuấn, Lê Hữu Tôn, Tống Sĩ Sơn, Kiều Quốc Việt, Huỳnh Vinh Nam	F+I	2/2023	6/2023
13	AE2.003	Mechanics 2	3	33	30	3		M	Phí Thị Mai Linh	F	2/2023	6/2023
14	AE2.005	Probabilities and Statistics	3	40	20		20	M	Phí Thị Mai Linh	F	2/2023	6/2023
15	AE1.002	Fluid mechanics	3	42	30	12		M	Bùi Văn Tuấn	F	2/2023	6/2023
16	AE1.004	Electricity and Electromagnetism 2	3	40	30	10		M	Ngô Quang Minh	F	2/2023	6/2023
17	AE1.005	Electronics	4	60	48	12		M	Phạm Duy An	F	2/2023	6/2023
18	AE1.006	Introduction to Aeronautics 1	3	30	30			M	French lecturer	I	2/2023	6/2023
19	AE1.009	Waves and sounds	2	24	20	4		M	Nguyễn Xuân Bách	F	2/2023	6/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
20	AE1.015	CATIA V5 Basic Training	2	20	20			M	Trần Anh Tú	F	2/2023	6/2023



**19.2. TEACHING PLAN OF B2**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture hour	Practical hour	Tutorial hour	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	FR2.001	French 2.1	4	60	60	0		M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	12/2022	02/2023
2	MS2.005	Basic Principles of Project Management	2	20	20	0		O	Nguyễn Văn Hùng	I	9/2022	02/2023
3	PHI2.001	Philosophy	0	30	30	0		M	Trần Xuân Bình	I	9/2022	02/2023
4	AE2.003	Mechanics 2	3	33	30	3		M	Phí Thị Mai Linh	F	9/2022	2/2023
5	AE2.005	Probabilities and Statistics	3	40	20		20	M	Phí Thị Mai Linh	F	9/2022	2/2023
6	AE2.010	Automatism	3	44	40	4		M	Trần Anh Tú	F	9/2022	2/2023
7	AE2.008	Aerodynamics and Flight mechanics	4	53	45	8		M	Hoàng Thị Kim Dung, Bùi Văn Tuấn	F	9/2022	2/2023
8	AE2.002	Materials	6	91	75	16		M	French lecturer, Nguyễn Văn Tăng, Trần Anh Tú	F+I	9/2022	2/2023
9	AE2.011	Electrical power	3	24	20	4		M	Phạm Duy An	F	9/2022	2/2023
10	AE2.012	Electronics systems: Analog systems & Digital systems	3	58	50	8		M	French lecturer, Dương Quang Hà, Phạm Duy An	F+I	9/2022	2/2023
11	MAT2.001	Numerical methods and Matlab	3	40	20	20		M	Thái Minh Quân, Trần Anh Tú	F+I	9/2022	2/2023

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture hour	Practical hour	Tutorial hour	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 2</b>												
12	FR2.002	French 2.2	4	60	60			M	Trần Thị Phương Thảo, Nguyễn Tuấn Anh, Trương Thị Khánh Hoà, Phạm Thị Huyền, Invited lecturer	F+I	2/2023	6/2023
13	MS2.006	Intellectual property Management	2	20	18	2		O	Lê Thị Thu Hiền	I	2/2023	6/2023
14	AE2.006	Thermodynamics	3	34	30	4		M	Nguyễn Xuân Bách	F	2/2023	6/2023
15	PHY2.005	Mechanics of Materials	3	52	36	16		M	Nguyễn Văn Tăng	F	2/2023	6/2023
16	AE2.009	Aircraft documentation	2	15	15			M	Bùi Văn Tuấn	F	2/2023	6/2023
17	AE2.018	Electronics systems: Instrument systems, avionics and troubleshooting	3	66	50	16		M	French lecturer, Phạm Duy An	F+I	2/2023	6/2023
18	AE2.013	Thermal systems	4	57	45	12		M	French lecturer, Nguyễn Văn Tăng	F+I	2/2023	6/2023
19	AE2.001	Hydraulic/Pneumatic power	3	24	20	4		M	Nguyễn Xuân Bách	F	2/2023	6/2023
20	AE2.017	CATIA V5 Advanced Training	2	20	20			M	Trần Anh Tú	F	2/2023	6/2023
21	AE2.014	Internship	4					M			6/2023	8/2023

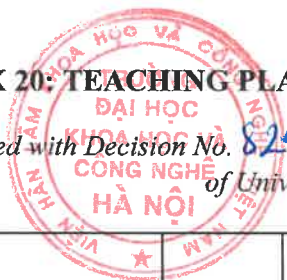
**19.3. TEACHING PLAN OF B3**

No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	AE3.001	Aviation regulations	3	27	27			M	French lecturer, Nguyễn Văn Tăng	F+I	9/2022	2/2023
2	AE3.002	Safety and Human Factors	3	27	27			M	French lecturer, Nguyễn Văn Tăng	F+I	9/2022	2/2023
<b>Operation Engineering</b>												
3	AE3.004	Legal environment of maintenance contracts	1	15	15			M	Trần Ánh Hồng	I	9/2022	2/2023
4	AE3.005	Accounting of maintenance projects	1	20	20			M	Lê Trà My	I	9/2022	2/2023
5	AE3.007	Maintenance and realibility	4	54	54			M	French lecturer, Dương Quang Hà	F+I	9/2022	2/2023
6	AE3.016	Power electronics	3	38	30	8		M	Nguyễn Kiên Trung, Tô Quang Hoàn	I	9/2022	2/2023
7	AE3.017	Vibrations	3	27	27			M	Cédric Bonnardot	F	9/2022	2/2023
<b>Maintenance Engineering</b>												
3	AE3.012	Gas turbine engine 2	6	140	120	20		O	VAECO lecturer	I	9/2022	2/2023
4	AE3.013	Propeller	2	26	26			O	VAECO lecturer	I	9/2022	2/2023
5	AE3.014	Aeroplane Aerodynamics, structures and systems 2	15	290	250	40		O	VAECO lecturer	I	9/2022	2/2023

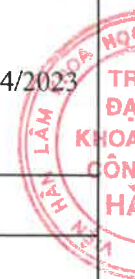
No.	Module Code	Modules	ECTS	Total teaching hours	Lecture Hours	Practical Hours	Tutorial Hours	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 2</b>												
8	AE3.003	Gas turbine engine	3	38	30	8		M	Nguyễn Văn Tăng	F	2/2023	3/2023
<b>Operation Engineering</b>												
9	AE3.006	Presentation skills/professional orientation	1	15	15			M	Hoàng Mỹ Linh	I	2/2023	3/2023
10	AE3.018	Flight operations	4	48	48			M	French lecturer, Bùi Văn Tuấn	F+I	2/2023	3/2023
11	AE3.020	Project Management and Quality assurance	2	24	24			M	Cédric Bonnardot	F	2/2023	3/2023
12	AE3.026	Airline management	2	24	24			M	French lecturer	I	2/2023	3/2023
13	AE3.024	Internship	30					M			4/2023	7/2023
<b>Maintenance Engineering</b>												
7	AE3.008	Aerodynamics structures and systems 1	6	76	60	16		M	French lecturer, Dương Quang Hà, Tô Quang Hoàn	F+I	2/2023	7/2023
8	AE3.009	Maintenance practices	9	160	120	40		M	French lecturer, Cedric Bonnardot, Hà Mạnh Tuấn, Tô Quang Hoàn	F+I	2/2023	7/2023
9	AE3.010	Materials and hardware	6	66	50	16		M	Vũ Đình Quý, Tô Quang Hoàn	I	2/2023	7/2023
10	AE3.021	Internship	9					M			8/2023	11/2023

**ANNEX 20: TEACHING PLAN OF THE PREPARATION YEAR (B0) OF BACHELOR PROGRAMS IN 2022-2023**

*(Promulgated with Decision No. 824/QĐ-ĐHKHCN dated August 11, 2022 on approving the Teaching plan of bachelor programs of University of Science and Technology of Hanoi in academic year 2022-2023)*



No.	Module Code	Modules	ECTS	Total teaching hours	Lecture hour	Practical hour	Tutorial hour	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
<b>Semester 1</b>												
1	ENG0.001	English Stage 01	14	180	180			M	Nguyễn Thị Ngọc Thảo, Nguyễn Hồng Nga, Nguyễn Ngọc Anh, Đỗ Thùy Linh, Bùi Phương Hà, invited lecturers	F+I	10/2022	01/2023
2	ENG0.002	English Stage 02	14	180	180			M	Nguyễn Thị Ngọc Thảo, Nguyễn Hồng Nga, Nguyễn Ngọc Anh, Đỗ Thùy Linh, Bùi Phương Hà, invited lecturers	F+I	01/2023	4/2023
<b>Semester 2</b>												
3	ENG0.003	English Stage 03	12	140	140			M	Nguyễn Thị Ngọc Thảo, Nguyễn Hồng Nga, Nguyễn Ngọc Anh, Đỗ Thùy Linh, Bùi Phương Hà, invited lecturers	F+I	4/2023	7/2023
4	MAT0.001	Mathematics	4	40	40			M	Trần Hoàng Tùng, Nguyễn Mai Chung, Lương Thái Hưng	F	02/2023	6/2023
5	PHY0.001	Physics	4	40	40			M	Lê Thị Lý, Trịnh Bích Ngọc, Nguyễn Hồng Nam, Nguyễn Thị Ngọc, Nguyễn Mai Chung	F	02/2023	6/2023
6	CHE0.001	Chemistry	4	40	32		8	M	Lê Hồng Luyến, Lê Phương Thu, Vũ Cẩm Tú	F	02/2023	6/2023



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No.	Module Code	Modules	ECTS	Total teaching hours	Lecture hour	Practical hour	Tutorial hour	Mandatory module (M)/ Optional module (O)	Lecturer	USTH fulltime lecturer (F)/ Invited lecturer (I)	Start Date	End Date
7	BIO0.001	Biology	4	40	34		6	M	Lê Thị Vân Anh, Nguyễn Quỳnh Hoa, Lê Thanh Hương, Nguyễn Thy Ngọc	F	02/2023	6/2023
8	ICT0.001	Informatics	4	40	40			M	Lê Hữu Tôn, Nguyễn Hoàng Hà, Giang Anh Tuấn, Nguyễn Minh Hương	F	02/2023	6/2023

