

附件1：生命科学本科教学计划 Annexe 1 : Maquette de la Licence Science de la vie
生物技术专业 Biologie Cellulaire

课程类别 Course Classifications	课程编号 Course Code	课程 Course Name	学分 Credits	教学时数 Class Hours	学时分配				中方承担课程 Course undertaken by WUT	外方承担课程 Course undertaken by AMU	认证课程 Cours affiliés	法方学分课程 cours présents à AMU
					理论 HCM	实验 HTP	上机 Computer Practice	建议修读学期 Semesters				
通识课程 General Courses	必修课程 Compulsory courses	1	中国近现代史纲要The Outline of Chinese Modern History	2.5	42	42	0	0	1	★		
	2	思想道德修养与法律基础Moral Education and Fundamentals of Law	2.5	42	42	0	0	2	★			
	3	毛泽东思想和中国特色社会主义理论体系概论An Introduction to Mao Zedong's Thought and the Theoretical System of Socialism with Chinese Characteristics	4.5	66	66	0	0	3	★			
	4	马克思主义基本原理Basic Principles of Marxism	2.5	42	42	0	0	4	★			
	5	军事理论Military Theory	2	32	32	0	0	2	★			
	6	体育1Physical Education 1	1	32	32	0	0	1	★			
	7	体育2Physical Education 2	1	32	32	0	0	2	★			
	8	体育3Physical Education 3	1	32	32	0	0	3	★			
	9	体育4Physical Education 4	1	32	32	0	0	4	★			
	10	法语上 French Part 1	15	240	240	0	0	1	★		★	
	11	法语下 French Part 2	20	320	320	0	0	2	★		★	
	12	法语科技阅读与写作Reading and writing of French for Science and Technology	2	32	32	0	0	3	★		★	
	13	大学英语1College English1	3	60	48	0	12	1	★		★	
	14	大学英语2College English2	2	44	32	0	12	2	★		★	
	15	大学英语3College English3	2	44	32	0	12	3	★		★	
	16	大学英语4College English4	2	44	32	0	12	4	★			
	17	Python程序设计基础The Foundation of Python Programming Design	2	32	32	0	0	1	★		★	
	18	计算机基础与Python程序设计综合实验Basis of Computer Engineering and Comprehensive Experiments of Python Programming Design	1	32	0	0	32	1	★			
		小计Subtotal		67	1200	1120	0	80				

选修课 Optional Courses	19	创新创业类Innovation and Entrepreneurship	要求至少取得9个学分，且必须选修艺术体育类课程中的艺术类相关课程并取得至少2个学分，在创新创业类课程和经济管理类课程中分别至少选修一门课程。 At least 9 credits are required, and at least 2 credits must be taken in art-related courses in the Arts and Sports curriculum. At least one course in the Innovation and Entrepreneurship curriculum and one in the Economics and Management curriculum must be taken respectively.					★			
	20	人文社科类Humanities and Social Sciences						★			
	21	经济管理类Economics and Management						★			
	22	科学技术类Science and Technology						★			
	23	艺术体育类Art and Sports						★			
学科基础课程Basic Discipline Courses	24	高等数学 (Outils mathématiques数学工具) Advanced Mathematics (Outils MathématiquesMathematical Tools)	5	80	80	0	0	1	★		★
	25	大学物理 (Bases de physique : optique & électricité基础物理: 光和电) College Physics (Fundamentals of Physics: Light and Electricity)	3	48	32	16	0	2	★		★
	26	Diversité du monde vivant (生命世界概论or生命世界多样性) (Introduction to the Living World or The Diversity of Life)	1	16	16	0	0	2		★	★
	27	无机与分析化学(De l'atome vers la molécule 从原子到分子)Inorganic and Analytical Chemistry (From Atoms to Molecules)	3	48	48	0	0	3	★		★
	28	无机与分析化学实验Inorganic and Analytical Chemistry Experiment	1	32	0	32	0	3	★		
	29	Biochimie -Molécules de la vie 生物化学-生命分子Biochemistry - Biomolecules	3	48	48	0	0	3		★	★
	30	Biologie cellulaire 细胞生物学Cellular Biology	2.5	40	40	0	0	3		★	★
	31	Biologie moléculaire 分子生物学Molecular Biology	2.5	40	40	0	0	3		★	★
	32	Introduction à la physiologie 生理学导论Introduction to Physiology	2	32	32	0	0	3		★	★
	33	有机化学Chimie organique, Organic Chemistry	3	48	48	0	0	4	★		★
	34	有机化学实验Chimie Organique (TP), Organic Chemistry Experiment	0.5	16	0	16	0	4	★		
	35	Biochimie-Réactions cellulaires生物化学-细胞反应Biochemistry-Cellular Reaction	3	48	32	16	0	4		★	★
	36	Génétique moléculaire分子遗传学Molecular Genetics	2.5	40	40	0	0	4		★	★
	37	Bioinformatique : analyse des séquences 生物信息学: 序列分析Bioinformatics: Sequence Analysis	3	48	16		32	4		★	★
	38	Interactions et dynamique cellulaires细胞相互作用和动力学Cellular Interactions and Dynamics	2.5	40	40	0	0	4		★	★
39	生物仪器分析及应用(Spectrométrie, microscopie et imagerie) Bio-instrument Analysis and Applications	2	32	32	0	0	4		★	★	
	小计Subtotal	39.5	656	544	80	0					
	40	Physiologie intégrative 整合生理学Integrative Physiology	2	32	32	0	0	5		★	★

必修课 Compulsory Courses	41	Biologie des comportements cellulaires 细胞行为生物学 Biology of Cellular Behaviors	3	48	48	0	0	5		★		★
	42	Génétique moléculaire procaryote 原核分子遗传学 Prokaryotic Molecular Genetics	2	32	32	0	0	5			★	★
	43	Biologie du développement发育生物学 Biology of Development	2	32	32	0	0	6		★		★
	44	Génétique moléculaire eucaryote 真核分子遗传学 Eukaryotic Molecular Genetics	2	32	32	0	0	6		★		★
	45	发酵工程原理与技术Principles and Technology of Fermentation Engineering	2	32	32	0	0	6	★			★
	46	发酵工程原理与技术实验Principles and Technology of Fermentation Engineering Experiment	0.5	16	0	16	0		★			
	47	纳米生物技术及应用A Nanotechnology and Its Applications A	2	32	32	0	0	6	★			
	48	生化分离与分析技术 Bio-separation and Analysis	2	32	32	0	0	6	★			
	49	生化分离与分析技术实验Bio-separation and Analysis Experiment	1	32	0	32	0	6	★			
	50	蛋白质与酶工程Protein and Enzyme Engineering	2	32	32	0	0	7	★			★
	51	蛋白质与酶工程实验Protein and Enzyme Engineering Experiment	0.5	16	0	16	0	7	★			
	52	生物技术创新创业专题Biopharmaceutical Innovation and Entrepreneurship	1	16	16	0	0	7	★			
		小计Subtotal	22	384	320	64	0					
	专业课 Major Courses	53	天然产物提取分离与鉴定技术C Extraction, Separation and Identification of Natural Products	3	48	32	16	0	5	★		
54		重大疾病与健康前沿 Major Diseases and Health Frontiers	2	32	32	0	0	5	★			★
55		生物医学工程与技术 Biomedical Engineering and Technology	2	32	32	0	0	5	★			★
56		生化工程A Chemical Engineering A	2	32	32	0	0	5	★			★
57		生物材料与组织工程 Biomaterials and Tissue Engineering	2	32	32	0	0	6	★			★
58		生物催化技术及应用B Biocatalysis Technology and Application B	2	32	32	0	0	6	★			★
59		生物分子固定化技术与示踪技术 Immobilization and Tracer Technology of Biomolecules	2	32	32	0	0	7	★			★
60		仿生生物技术Bionic Biotechnology	2	32	32	0	0	7	★			★
61		生物技术制药 Biotechnological Pharmaceutics	2	32	32	0	0	7	★			★
62		新药开发原理与方法Principles and Methods of New Drug Development	2	32	32	0	0	7	★			★
修读说明：上述课程要求至少选修12学分 Instruction: At least 12 credits are required for the above courses.												

选修课 Optional Courses	63	Structure et fonction des protéines蛋白质的结构和功能Structure and Function of Proteins	2	32	32	0	0	5		★		★	
	64	Enzymologie 酶学Enzymology	2	32	32	0	0	5		★		★	
	修读说明：上述课程要求至少选修2学分 Instruction: At least 2 credits are required for the above courses.												
	65	Immunologie免疫学 Immunology	2	32	16	16	0	6			★		★
	66	Microbiologie微生物学 Microbiology	2	32	32	0	0	6			66%AMU 33% affilié AMU		★
	修读说明：上述课程要求至少选修2学分 Instruction: At least 2 credits are required for the above courses.												
	67	Biologie synthétique合成生物学Synthetic Biology	1.5	24	24	0	0	6		★			★
		Métabolisme et bioénergétique 新陈代谢与生物能学Metabolism and Bioenergetics	2	32	32	0	0	6			★		★
	68	Microbiologie moléculaire 分子微生物学 Molecular Microbiology	2	32	32	0	0	7		★			★
		Microbiologie expérimentale et biotechnologies 实验微生物学与生物技术	2	32	16	16	0	7			★		★
	69	Immunologie fondamentale 基础免疫学 Fundamental Immunology	2	32	32	0	0	7		★			★
		Immunologie appliquée 应用免疫学 Applied Immunology	2	32	16	16	0	7			★		★
	修读说明：上述课程模组，要求至少选修1组 Instruction: At least 1 optional course must be selected from the above curriculum module.												
集中实践环节课程 Centralized Practical Courses	70	军事训练Military Training	2	3周 3 weeks	0		32 (实践)	1		★			
	71	生物实验室基本能力训练 (Entrainement aux techniques de laboratoire)Training of Basic Techniques in Biology Laboratory	2	2周 2 weeks	0	64		3		★			
	72	专业基础实验 (TP intégrés-1) Professional Basic Experiments	2	2周 2 weeks	0	64		4			66%AMU 33% affilié AMU		★
	73	专业综合实验 (TP intégrés-2) Professional Comprehensive Experiments	2	2周 2 weeks	0	64		5		★			★
	74	专业实习 Internship	2	2周 2 weeks	0		32 (实践)	6		★			
	75	实验室创新能力训练(SEMESTRE 4: Labo In Vivo)Laboratory Innovation Training	1	1周 1 week	0	32		7			★		★
	76	毕业设计与论文Graduation Design and Thesis	9	17周 17 weeks	0		144 (实践)	8		★			

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制药工程专业 Biochimie

课程类别 Course Classifications	课程编号 Course Code	课程 Course Name	学分 Credits	教学时数 Class Hours	学时分配 Division of Class Hours				中方承担课程 Course undertaken by WUT	外方承担课程 Course undertaken by AMU	认证课程 Cours affiliés	法方学分课程 cours présents à AMU
					理论 HCM	实验 HTP	上机 Computer Practice	建议修				
								读学期 Semesters				
通识教育课程 General Courses	必修课 Compulsory Courses	1	中国近现代史纲要 The Outline of Chinese Modern History	2.5	42	42	0	0	1	★		
		2	思想道德修养与法律基础 Moral Education and Fundamentals of Law	2.5	42	42	0	0	2	★		
		3	毛泽东思想和中国特色社会主义理论体系概论 An Introduction to Mao Zedong's Thought and the Theoretical System of Socialism with Chinese Characteristics	4.5	66	66	0	0	3	★		
		4	马克思主义基本原理 Basic Principles of Marxism	2.5	42	42	0	0	4	★		
		5	军事理论 Military Theory	2	32	32	0	0	2	★		
		6	体育1 Physical Education 1	1	32	32	0	0	1	★		
		7	体育2 Physical Education 2	1	32	32	0	0	2	★		
		8	体育3 Physical Education 3	1	32	32	0	0	3	★		
		9	体育4 Physical Education 4	1	32	32	0	0	4	★		
		10	法语上 French Part 1	15	240	240	0	0	1	★		★
		11	法语下 French Part 2	20	320	320	0	0	2	★		★
		12	法语科技阅读与写作 Reading and writing of French for Science and Technology	2	32	32	0	0	3	★		★
		13	大学英语1 College English 1	3	60	48	0	12	1	★		★
		14	大学英语2 College English 2	2	44	32	0	12	2	★		★
		15	大学英语3 College English 3	2	44	32	0	12	3	★		★
		16	大学英语4 College English 4	2	44	32	0	12	4	★		
		17	Python程序设计基础 The Foundation of Python Programming Design	2	32	32	0	0	1	★		★
		18	计算机基础与Python程序设计综合实验 Basis of Computer Engineering and Comprehensive Experiments of Python Programming Design	1	32	0	0	32	1	★		

		小计Subtotal	67	1200	1120	0	80					
选修课 Optional courses	19	创新创业类Innovation and Entrepreneurship	要求至少取得9个学分，且必须选修艺术体育类课程中的艺术类相关课程并取得至少2个学分，在创新创业类课程和经济管理类课程中分别至少选修一门课程。At least 9 credits are required, and at least 2 credits must be taken in art-related courses in the Arts and Sports curriculum. At least one course in the Innovation and Entrepreneurship curriculum and one in the Economics and Management curriculum must be taken respectively.					★				
	20	人文社科类Humanities and Social Sciences						★				
	21	经济管理类Economics and Management						★				
	22	科学技术类Science and Technology						★				
	23	艺术体育类Art and Sports						★				
学科基础课程Basic Discipline Courses	24	高等数学 (Outils mathématiques数学工具) Advanced Mathematics (Outils Mathématiques Mathematical Tools)	5	80	80	0	0	1	★			★
	25	大学物理 (Bases de physique : optique & électricité基础物理: 光和电) College Physics (Fundamentals of Physics: Light and Electricity)	3	48	32	16	0	2	★			★
	26	Diversité du monde vivant (生命世界概论or生命世界多样性) (Introduction to the Living World or The Diversity of Life)	1	16	16	0	0	2		★		★
	27	无机与分析化学 (De l'atome vers la molécule 从原子到分子)Inorganic and Analytical Chemistry (From Atoms to Molecules)	3	48	48	0	0	3	★			★
	28	无机与分析化学实验Inorganic and Analytical Chemistry Experiment	1	32	0	32	0	3	★			
	29	Biochimie -Molécules de la vie 生物化学-生命分子Biochemistry - Biomolecules	3	48	48	0	0	3		★		★
	30	Biologie cellulaire 细胞生物学Cellular Biology	2.5	40	40	0	0	3		★		★
	31	Biologie moléculaire 分子生物学Molecular Biology	2.5	40	40	0	0	3		★		★
	32	Introduction à la physiologie 生理学导论Introduction to Physiology	2	32	32	0	0	3		★		★
	33	有机化学Chimie organique, Organic Chemistry	3	48	48	0	0	4	★			★
	34	有机化学实验Chimie Organique (TP), Organic Chemistry Experiment	0.5	16	0	16	0	4	★			
	35	Biochimie-Réactions cellulaires生物化学-细胞反应Biochemistry-Cellular Reaction	3	48	48	16	0	4		★		★
	36	Génétique moléculaire分子遗传学Molecular Genetics	2.5	40	40	0	0	4		★		★
	37	Bioinformatique : analyse des séquences 生物信息学: 序列分析 Bioinformatics: Sequence Analysis	3	48	16	0	32	4			66%AMU 33% affilié AMU	★
	38	Interactions et dynamique cellulaires细胞相互作用和动力学Cellular Interactions and Dynamics	2.5	40	40	0	0	4		★		★
39	生物仪器分析及应用(Spectrométrie, microscopie et imagerie) Bio-instrument Analysis and Applications	2	32	32	0	0	4		★		★	

	40	化工原理Principles of Chemical Engineering	2	32	32	0	0	4	★			
	41	化工原理实验Principles of Chemical Engineering Experiment	1	32	0	32	0	4	★			
		小计Subtotal	42.5	720	592	112	32					
必修课 Compulsory Courses	42	Structure et fonction des protéines蛋白质的结构和功能Structure and Function of Proteins	2	32	32	0	0	5		★		★
	43	Génétique moléculaire procaryote 原核分子遗传学 Prokaryotic Molecular Genetics	2	32	32	0	0	5			★	★
	44	Enzymologie 酶学Enzymology	2	32	32	0	0	5		★		★
	45	Réactivité des biomolécules生物分子活性Biomolecular Activity	2.5	40	40	0	0	5		★		★
	46	Méthodes analytiques de caractérisations des biomolécules 生物分子的分析方法Analysis Methods for Biomolecules	3	48	32	16	0	6			50%AMU 50%affilié AMU	★
	47	Chimie bio-inorganique生物无机化学Bio-inorganic Chemistry	1.5	24	24	0	0	6		★		★
	48	Chimie bio-inorganique (TP) 生物无机化学实验Bio-inorganic Chemistry Experiment	0.5	16	0	16	0	6	★			
	49	药理学C Pharmacology C	2	32	32	0	0	5	★			
	50	药物化学C Medicinal Chemistry C	2	32	32	0	0	5	★			
	51	生物药物分析Bio-pharmaceutical Analysis	2	32	32	0	0	6	★			
	52	生物药物分析实验 Bio-pharmaceutical Analysis Experiment	0.5	16	0	16	0	6	★			
	53	发酵工程原理与技术Principles and Technology of Fermentation Engineering	2	32	32	0	0	6	★			★
	54	发酵工程原理与技术实验Principles and Technology of Fermentation Engineering Experiment	0.5	16	0	16	0	6	★			
	55	生物分离工程Bio-separation Engineering	2	32	32	0	0	7	★			
	56	生物制药创新创业专题Biopharmaceutical Innovation and Entrepreneurship	1	16	16	0	0	7	★			
			小计Subtotal	25.5	432	368	64	0				
	57	线性代数Linear Algebra	2.5	40	40	0	0	4	★			★
	58	医学基础Basic Science of Medicine	2	32	32	0	0	4	★			★
	59	药事管理学与新药研究Pharmaceutical Administration and New Drug Research	2	32	32	0	0	5	★			★

专业课
Major
Courses

60	药剂学C Pharmaceutics C	2	32	32	0	0	5	★			★
61	生物反应工程Bio-reaction Engineering	2	32	32	0	0	5	★			★
62	药品生产质量管理工程B Quality Management Engineering in Pharmaceutical Production B	1.5	24	24	0	0	5	★			★
63	制药设备与车间设计Pharmaceutical Equipment and Workshop Design	2	32	32	0	0	6	★			★
64	计算机辅助药物设计Computer-Aided Drug Design	2	32	32	0	0	6	★			★
65	制药过程安全与环保Safety and Environmental protection in Pharmaceutical Process	2	32	32	0	0	6	★			★
66	新药开发原理与方法Principles and Methods of New Drug Development	2	32	32	0	0	7	★			★
67	蛋白质与核酸药物Protein and Nucleic Acid Drugs	2	32	32	0	0	7	★			★
68	药事管理学The Science of Pharmaceutical Administration	2	32	32	0	0	7	★			★
修读说明：上述课程要求至少选修6学分Instruction: At least 6 credits are required for the above courses.											
69	Biologie synthétique合成生物学Synthetic Biology	1.5	24	24	0	0	6		★		★
70	Ingénierie des protéines蛋白质工程Protein Engineering	2	32	16	16	0	6			★	★
71	Métabolisme et bioénergétique 新陈代谢与生物能学Metabolism and Bioenergetics	2	32	32	0	0	6			★	★
72	De la molécule au médicament从分子到医药From Molecules to Medicine	1.5	24	24	0	0	6			★	★
修读说明：上述课程要求至少选修3.5学分Instruction: At least 3.5 credits are required for the above courses.											
73	Microbiologie moléculaire 分子微生物学Molecular Microbiology	2	32	32	0	0	7			★	★
	Microbiologie expérimentale et biotechnologies 实验微生物学与生物技术Experimental Microbiology and Biotechnology	2	32	16	16	0	7				★
74	Immunologie fondamentale 基础免疫学Fundamental Immunology	2	32	32	0	0	7			★	★
	Immunologie appliquée应用免疫学Applied Immunology	2	32	16	16	0	7				★
75	Interactions protéines médicaments 药物蛋白相互作用Drug-protein Interaction	2	32	32	0	0	7				★
	Innovation moléculaire à visées thérapeutiques具有治疗目的的分子创新Molecular Innovation for Therapeutic Purposes	1.5	24	24	0	0	7			★	★
修读说明：上述课程模组，要求至少选修1组 Instruction: At least 1 optional course must be selected from the above curriculum module.											

选修课
Optional
Courses

集中实践环节课程 Centralized Practical Courses	76	军事训练Military Training	2	3周 3 weeks	0	0	32 (实践)	1	★			
	77	生物实验室基本能力训练 (Entrainement aux techniques de laboratoire)Training of Basic Techniques in Biology Laboratory	2	2周 2 weeks	0	64	0	3	★			
	78	专业基础实验 (TP intégrés-1) Professional Basic Experiments	2	2周 2 weeks	0	64	0	4			66%AMU 33% affilié AMU	★
	79	专业综合实验 (TP intégrés-2) Professional Comprehensive Experiments	2	2周 2 weeks	0	64	0	5	★			★
	80	TP intégrés-3 (由蛋白质的结构和功能与酶学的课内实验构成)	1	1周 1 week	0	32	0	5			★	★
	81	专业实习Internship	2	2周 2 weeks	0	0	32 (实践)	6	★			
	82	实验室创新能力训练(SEMESTRE 4: Labo In Vivo)Laboratory Innovation Training	1	1周 1 week	0	32	0	7	★			★
	83	毕业设计 with 论文Graduation Design and Thesis	9	17周 17 weeks	0	0	144 (实践)	8	★			

附件2：微生物学硕士教学计划 Annexe 2 : Maquette du Master Microbiologie

课程类别 Course type	课程编号 Course No.	课程名称 Course name	学时 Hours	学分 Creditors	开课学期 Semester	中方承担课程 To be lectured by Chinese teachers	外方承担课程 To be lectured by French teachers	法方学分课程 cours présents à AMU
公共 学位课 Public degree courses	1	第一外国语（英）上 First Foreign Language (English) I	36	2	1	★		★
	2	第一外国语（英）下 First Foreign Language (English) II	36	2	2	★		★
	3	中国特色社会主义理论与实践 Theory and Practice of Socialism with Chinese Characteristics	36	2	3	★		★
	4	自然辩证法概论 Introduction to Dialectics of Nature	18	1	3	★		★
	5	数学物理方程 Mathematical Physics Equations	36	2	3	★		★
	6	应用数理统计 Applied Mathematical Statistics	36	2	3	★		★
必选 Required								
专业 学位课 Professional degree courses	7	生物化学与分子生物学 Biochemistry and Molecular Biology	54	3	1	★		★
	8	高等微生物学 Advanced Microbiology	54	3	1	★		★
	9	原核细胞生物学 Biologie cellulaire procaryote	36	2	2		★	★
必选 Required								
跨学科必选 Required for studying interdisciplinar y course	10	第二外国语（法语） Second Foreign Language (French)	72	4	2	★		★
必选 Required								

专业 选修课 Professional optional courses	11	生命科学科技英语 Tech English for Life Science	18	1	1		★	★	
	12	科学交流之道 Communiquer en science	36	2	2		★	★	
	13	微生物硕士学术大会 Congrès du master Microbiologie	36	2	3		★	★	
	14	基础实验1 (Initiation à la recherche 1) Elementary Experiment 1	2周 2 weeks	4	1	★		★	
	15	基础实验2 (Initiation à la recherche 2) Elementary Experiment 2	2周 2weeks	4	2	★			
	16	文献分析 Atelier Bibliographique	36	2	3		★	★	
	法方学位必选 Required for pursuit of French degree								
	17	细菌适应性的分子和细胞机制 Adaptation moléculaire et cellulaire des bactéries	36	2	2		★	★	
	18	细菌遗传学	36	2	2		★	★	
	19	微生物多样性和代谢	36	2	2		★	★	
任选不少于4学分 Optional with at least four credits									
必修环节 Required links	20	艾克斯马赛学院硕士实践环节 (Stage en Laboratoire ou Industrie) Practice of Master Students of Aix-Marseille Université		3	3	★		★	
	21	选题报告及中期考核 Topic Selection Report and Mid-term Assessment		1	3	★			
	22	艾克斯马赛学院硕士学术活动 Academic Activities of Master Students of Aix-Marseille Université	≧5次 5times	1	1-5	★			

附件3：生物学与健康硕士教学计划 Annexe 3 : Maquette du Master Biologie Santé

课程类别 Course type		课程编号 Course No.	课程名称 Course name	学时 Hours	学分 Creditors	开课学期 Semester	中方承担课程 To be lectured by Chinese teachers	外方承担课程 To be lectured by French teachers	法方学分课程 cours présents à AMU
必选 Required	公共学位课 Public degree courses	1	第一外国语（英语）上 First Foreign Language (English) I	36	2	1	★		★
		2	第一外国语（英语）下 First Foreign Language (English) II	36	2	2	★		★
		3	中国特色社会主义理论与实践 Theory and Practice of Socialism with Chinese Characteristics	36	2	3	★		
		4	自然辩证法概论 Introduction to Dialectics of Nature	18	1	3	★		★
		5	数学物理方程 Mathematical Physics Equations	36	2	3	★		★
		6	应用数理统计 Applied Mathematical Statistics	36	2	3	★		★
	专业学位课 Professional degree courses	7	高等细胞生物学 Advanced Cell Biology	36	2	1	★		★
		8	高等分子遗传学 Advanced Molecular Genetics	36	2	1	★		★
		9	初级免疫学 Primary Immunology	36	2	1	★		★
		10	先天免疫学 Immunité innée	36	2	2		★	★
		11	后天免疫学 Immunité adaptative	36	2	2		★	★

法方学位 必修 Required for pursuit of French degree	选修课 Elective Courses	12	专业基础实验 (Immunologie expérimentale) Professional Elementary Experiment	2周 2 weeks	4	1	★		★
		13	生命科学科技英语 Tech English for Life Science	18	1	1		★	★
		14	专业综合实验 (Immunologie expérimentale) Professional Comprehensive Experiment	2周 2 weeks	4	2	★		★
		15	免疫病理学 Immunopathologie	36	2	2		★	★
		16	免疫和病菌感染 Immunité et infections	36	2	2		★	★
		17	细胞和分子生物治疗 Cellular and Molecular Biotherapy	36	2	3		★	★
		18	科学写作之道 Skills for Scientific Writing	36	2	3		★	★
跨学科必修 Required for studying interdisciplinary course		19	第二外国语 (法语) Second Foreign Language (French)	72	4	2	★		★
必修环节Compulsory Programs		20	马赛学院硕士学术活动 Academic Activities of Master Students in Institute of WUT-AMU	≥5次 5 times	1	1-5	★		★
		21	马赛学院硕士实践环节 Stage en Laboratoire ou Industrie Practice of Master Students in Institute of WUT- AMU	6个月 6 months	3	4-6	★	★	★
		22	马赛学院选题报告与中期考核 Topic Selection Report and Mid-term Assessment in Institute of WUT-AMU		1	3-5	★		

Annexe 1: LICENCE SCIENCES DE LA VIE

Code	Nature	Nom	Crédits	HCM	HTD	HTP
LIC	FRM	Licence Sciences de la vie	180			
PTBW	PT	 Biologie cellulaire - WUT-AMU	180			
SBWIAMUANNEE1	AN	 Année 1 - WUT-AMU	60			
SBWAS3UE1	UE	Biochimie - molécules de la vie	5	48	0	0
SBWAS3UE2	UE	Biologie cellulaire	4	40	0	0
SBWAS3UE3	UE	Biologie moléculaire	4	40	0	0
SBWAS3UE4	UE	Diversité du monde vivant	1	16	0	0
SBWAS3UE5	UE	Introduction à la physiologie	3	32	0	0
SBWAS4UE2	UE	Biochimie réactions cellulaires	6	48	0	16
SBWAS4UE5	UE	Spectrométrie, microscopie et imagerie	3	32	0	0
SBWWS2UE1	UE	Lectures intensives en Français	4	64	0	0
SBWWS3UE1	UE	De l'atome à la molécule	6	80	0	32
SBWWS3UE2	UE	College English Wuhan 1	6	60	0	0
SBWWS3UE3	UE	Outils mathématiques	6	80	0	0
SBWWS3UE4	UE	Physique: optique et électricité	6	48	0	16
SBWWS4UE1	UE	Chimie organique	6	56	0	16
SBWIAMUANNEE2	AN	 Année 2 - WUT-AMU	60			
SBCWAS6UE1	UE	Microbiologie	6	32	0	0
SBCWAS6UE2	UE	Immunologie	6	32	0	16
SBCWAS6UE3	UE	Biologie du développement	4	32	0	0
SBWAS4UE3	UE	Génétique moléculaire	4	40	0	0
SBWAS4UE4	UE	Interactions et dynamique cellulaires	4	40	0	0
SBWAS4UE6	UE	Bioinformatique:analyse des séquences	6	48	0	32
SBWWS4UE2	UE	Lectures intensives en Français	5	64	0	0
SBWWS4UE6	UE	TP intégrés 1	6	0	0	60
SBWWS5UE1	UE	College English Wuhan 2	5	44	0	0
SBWWS5UE2	UE	Les bases programmation python	4	32	0	0
SBWWS5UE3	UE	TP intégrés 2	6	0	0	60
SBWWS6UE3	UE	College English Wuhan 3	4	44	0	0

Annexe 1: LICENCE SCIENCES DE LA VIE (suite)

Code	Nature	Nom	Crédits	HCM	HTD	HTP
LIC	FRM	Licence Sciences de la vie	180			
SBWIAMUANNEE3	AN	Année 3 - WUT-AMU	60			
OPTWA1BIS2	OP	CHOIX D OPTIONS OFFRE AMU BC (8ECTS) (copie)	8			
SBWAOPT1	LI	Option AMU groupe 1 - BC	8			
SBCWAS5UE1	UE	physiologie intégrative	3	32	0	0
SBCWAS5UE2	UE	Biologie des comportements cellulaires	5	48	0	0
SBWAOPT2	LI	Option AMU groupe 2 - BC	8			
SBWAS5UE1	UE	Enzymologie	3	32	0	0
SBWAS5UE2	UE	Structure et fonction des protéines	5	48	0	0
OPTWA2	OP	Choix d'options 2 AMU-BC	8			
SBWAOPT2BC	LI	Option 2 - groupe 1 - AMU - BC	8			
SBWAS7UE10	UE	Microbiologie expérimentale	5	32	0	16
SBWAS7UE11	UE	Microbiologie moléculaire	3	32	0	0
SBWAOPT3BC	LI	Option 2 - groupe 2 - AMU - BC (copie)	8			
SBWAS7UE6	UE	Immunologie fondamentale	3	32	0	0
SBWAS7UE7	UE	Immunologie appliquée	5	32	0	16
SBWAOPT4	LI	Option 2-groupe 3- AMU- BC	8			
SBWAS7UE8	UE	Métabolisme et bioénergétique	5	32	0	0

Annexe 1: LICENCE SCIENCES DE LA VIE (suite)

Code	Nature	Nom	Crédits	HCM	HTD	HTP
LIC	FRM	Licence Sciences de la vie	180			
SBWAS7UE9	UE	Biologie synthétique	3	24	0	0
SBCWAS6UE8	UE	Génétique moléculaire eucaryote	4	32	0	0
SBCWAS7UE5	UE	TP intégrés	6	0	0	60
SBCWWS7UE1	UE	Protein and Enzyme Engineering	6	64	0	32
SBWAS5UE5	UE	Génétique moléculaire procaryote	4	32	0	0
SBWWS6UE4	UE	Principles and Technology of Fermentation Engineering	6	64	0	32
SBWWS7UE1	UE	Français pour les sciences et les technologies	3	32	0	0
SOPTBWWANNEE3	OP	CHOIX D OPTIONS OFFRE WUT BC	15			
SBCWWS5UE1	UE	Extraction, Separation and Identification	3	32	0	0
SBCWWS5UE2	UE	Major Diseases and Health Frontier	3	32	0	0
SBCWWS5UE3	UE	Biomedical Engineering and Technology	3	32	0	0
SBCWWS5UE4	UE	Chemical Engineering A	3	32	0	0
SBCWWS6UE5	UE	Biomaterials ans Tissue Engineering	3	32	0	0
SBCWWS6UE7	UE	Biocatalysis Technology and Application	3	32	0	0
SBCWWS7UE6	UE	Bionic Biotechnology	3	32	0	0
SBCWWS7UE8	UE	Immobilization and Tracer Technology	3	32	0	0
SBCWWS7UE9	UE	Biotechnological Pharmaceutics	3	32	0	0
SBWWS7UE10	UE	Principles and Methods of New Drugs Development	3	32	0	0

Annexe 1: LICENCE SCIENCES DE LA VIE (suite)

Code	Nature	Nom	Crédits	HCM	HTD	HTP
LIC	FRM	Licence Sciences de la vie	180			
PTBWBIOCH	PT	 Biochimie - WUT-AMU	180			
SBIOCHWIAMUAN2	AN	 Année 2 - WUT-AMU - BCH	60			
SBCHWAS4UE1	UE	Ingénierie des protéines	5	32	0	16
SBCHWAS4UE2	UE	Réactivité des biomolécules	5	40	0	0
SBCHWAS4UE4	UE	TP intégrés 3	3	0	0	30
SBCHWAS6UE3	UE	De la molécule au médicament	3	24	0	0
SBWAS4UE3	UE	Génétique moléculaire	4	40	0	0
SBWAS4UE4	UE	Interactions et dynamique cellulaires	4	40	0	0
SBWAS4UE6	UE	Bioinformatique:analyse des séquences	6	48	0	32
SBWWS4UE2	UE	Lectures intensives en Français	5	64	0	0
SBWWS4UE6	UE	TP intégrés 1	6	0	0	60
SBWWS5UE1	UE	College English Wuhan 2	5	44	0	0
SBWWS5UE2	UE	Les bases programmation python	4	32	0	0
SBWWS5UE3	UE	TP intégrés 2	6	0	0	60
SBWWS6UE3	UE	College English Wuhan 3	4	44	0	0
SBIOCHWIAMUANN3	AN	 Année 3 - WUT-AMU - Bioch	60			
OPTBIOCHWA1	OP	CHOIX D OPTIONS OFFRE AMU BCH (8ECTS)	8			
SBWAOPT1BCH	LI	Option AMU groupe 1 - BCH	8			
SBWAS7UE10	UE	Microbiologie expérimentale	5	32	0	16
SBWAS7UE11	UE	Microbiologie moléculaire	3	32	0	0
SBWAOPT2BCH	LI	Option AMU groupe 2 - BCH	8			
SBWAS7UE6	UE	Immunologie fondamentale	3	32	0	0
SBWAS7UE7	UE	Immunologie appliquée	5	32	0	16
SBWAOPT3BCH	LI	Option AMU groupe 3 - BCH	8			
SBWAS7UE8	UE	Métabolisme et bioénergétique	5	32	0	0
SBWAS7UE9	UE	Biologie synthétique	3	24	0	0
SBWAOPT4BCH	LI	Option AMU groupe 4 - BCH	8			
SBCHWAS7UE6	UE	Interactions protéines médicaments	5	32	0	0
SBCHWAS7UE7	UE	innovation moléculaire à visée thérapeutique	3	24	0	0

Annexe 1: LICENCE SCIENCES DE LA VIE (suite)

Code	Nature	Nom	Crédits	HCM	HTD	HTP
LIC	FRM	Licence Sciences de la vie	180			
SBCHWAS5UE1	UE	Méthodes analytiques de caractérisations	6	48	0	16
SBCHWAS5UE2	UE	Chimie Bio-inorganique	6	32	0	16
SBCHWAS5UE6	UE	Enzymologie	4	32	0	0
SBWAS5UE2	UE	Structure et fonction des protéines	5	48	0	0
SBWAS5UE5	UE	Génétique moléculaire procaryote	4	32	0	0
SBWWS6UE4	UE	Principles and Technology of Fermentation Engineering	6	64	0	32
SBWWS7UE1	UE	Français pour les sciences et les technologies	3	32	0	0
SBWWS7UE5	UE	TP intégrés	6	0	0	60
SOPTBCHWWAN3	OP	CHOIX D OPTIONS OFFRE WUT BCH (12ECTS)	12			
SBCHWWS5UE3	UE	Pharmaceutical Administration and new drugs research	3	32	0	0
SBCHWWS5UE4	UE	Pharmaceutics B	3	32	0	0
SBCHWWS6UE5	UE	Bio-reaction Engineering	3	32	0	0
SBCHWWS6UE6	UE	Quality Management Engineering in pharmaceutical production	3	32	0	0
SBCHWWS6UE7	UE	Pharmaceutical Equipment and Workshop Design	3	32	0	0
SBCHWWS6UE8	UE	Computer-Aided Drug Design	3	32	0	0
SBCHWWS711	UE	The Science of Pharmaceutical Administration	3	32	0	0
SBCHWWS7UE1	UE	Linear Algebra	3	40	0	0
SBCHWWS7UE10	UE	Protein and Nucleic Acid Drugs	3	32	0	0
SBCHWWS7UE2	UE	Basic Sciences of Medicine	3	32	0	0
SBCHWWS7UE9	UE	Safety and Environmental protection	3	32	0	0
SBWWS7UE10	UE	Principles and Methods of New Drugs Development	3	32	0	0

Annexe 1: LICENCE SCIENCES DE LA VIE (suite)

Code	Nature	Nom	Crédits	HCM	HTD	HTP
LIC	FRM	Licence Sciences de la vie	180			
SBWIAMUANNEE1	AN	Année 1 - WUT-AMU	60			
SBWAS3UE1	UE	Biochimie - molécules de la vie	5	48	0	0
SBWAS3UE2	UE	Biologie cellulaire	4	40	0	0
SBWAS3UE3	UE	Biologie moléculaire	4	40	0	0
SBWAS3UE4	UE	Diversité du monde vivant	1	16	0	0
SBWAS3UE5	UE	Introduction à la physiologie	3	32	0	0
SBWAS4UE2	UE	Biochimie réactions cellulaires	6	48	0	16
SBWAS4UE5	UE	Spectrométrie, microscopie et imagerie	3	32	0	0
SBWWS2UE1	UE	Lectures intensives en Français	4	64	0	0
SBWWS3UE1	UE	De l'atome à la molécule	6	80	0	32
SBWWS3UE2	UE	College English Wuhan 1	6	60	0	0
SBWWS3UE3	UE	Outils mathématiques	6	80	0	0
SBWWS3UE4	UE	Physique: optique et électricité	6	48	0	16
SBWWS4UE1	UE	Chimie organique	6	56	0	16

Annexe 2 : MASTER MICROBIOLOGIE

Code	Nature	Nom	Crédits	HCM	HTD	HTP
MAST	FRM	Master Microbiologie	120			
MASTERWUHAN	PT	Master of Microbiology - Chemical Engineering and Technology - WUT-AMU	120			
ANNEE1	AN	Master 1 Microbiology - CET - WUT-AMU	60			
M1S1WUHAN	SE	Semestre 1 - Master of Microbiology - Chemical Engineering and Technology	26			
S1WUE1	UE	English 1	4	36	0	0
S1WUE2	UE	Advanced Microbiology	6	54	0	0
S1WUE3	UE	English for Life science	2	18	0	0
S1WUE4	UE	Biochemistry and molecular Biology	6	54	0	0
S1WUE5	UE	Initiation à la recherche 1	8	0	0	0
M1S2WUHAN	SE	Semestre 2 - Master of Microbiology - Chemical Engineering and Technology - WUT-AMU	34			
S2AMUOPTUE5	OP	Option S2 - 4 crédits à choisir parmi 6	8			
S2AMUOPTUE1	UE	Adaptation cellulaire	4	36	0	0
S2AMUOPTUE2	UE	Génétique	4	36	0	0
S2AMUOPTUE3	UE	Métabolisme et diversité microbienne	4	36	0	0
S2AMUUE2	UE	Biologie cellulaire procaryote	4	36	0	0
S2AMUUE4	UE	Communiquer en Science	4	36	0	0
S2WUE1	UE	English 2	4	36	0	0
S2WUE3	UE	French	7	72	0	0
S2WUE6	UE	Stage	7	0	0	0
ANNEE2	AN	Master 2 - Microbiology- CET - WUT-AMU	60			
M2S3WUHAN	SE	Semestre 3 - Master of Microbiology - Chemical Engineering and Technology - WUT-AMU	24			
S3AMUUE5	UE	Congrès du Master	6	36	0	0
S3AMUUE6	UE	Atelier Bibliographique	4	36	0	0
S3WUE1	UE	Project in Microbiology	4	36	0	0
S3WUE2	UE	Introduction to dialectics of Biology	2	18	0	0
S3WUE3	UE	Mathematical physics equation	4	36	0	0
S3WUE4	UE	Applied Mathematical statistics	4	36	0	0
M2S4WUHAN	SE	Semestre 4 - Master of Microbiology- Chemical Engineering and Technology - WUT-AMU	36			
S4AMUWUUE1	UE	Stage 1	36	0	0	0
ANNEE3	AN	Année 3 - Master Microbiology - WUT-AMU	0			
M2S5WUHAN	SE	Semestre 5 - Master of Microbiology - Chemical Engineering and Technology - WUT-AMU	0			
S5AMUWUUE1	UE	Stage 2	0	0	0	0

Annexe 3 : MASTER BIOLOGIE-SANTE

Code	Nature	Nom	Crédits	HCM	HTD	HTP
M5ABS	FRM	Master Biologie-santé	120			
ABS5AJ	PT	Master Biomedical Engineering - WUT/AMU	120			
ABS4AAE	AN	Master 1 Biomedical Engineering - WUT/AMU	60			
ABSASAE	SE	Semestre 1 M1 Biomed Eng WUT/AMU	30			
ABSWUT01	UE	English I	4	36	0	0
ABSWUT02	UE	Tech English for life sciences	2	18	0	0
ABSWUT03	UE	Immunologie expérimentale	8	26,664	26,664	26,664
ABSWUT04	UE	Initiation à la Recherche	4	36	0	0
ABSWUT05	UE	Advanced cell biology	4	36	0	0
ABSWUT06	UE	Advanced molecular genetics	4	36	0	0
ABSWUT07	UE	Primary Immunology	4	36	0	0
ABSBSAE	SE	Semestre 2 M1 Biomed Eng WUT/AMU	30			
ABSAMU01	UE	Innate Immunity	4	36	0	0
ABSAMU02	UE	Immunopathology	4	36	0	0
ABSAMU03	UE	Adaptative Immunity	4	36	0	0
ABSAMU04	UE	Immunity and Infection	4	36	0	0
ABSWUT10	UE	French	8	72	0	0
ABSWUT11	UE	Immunologie expérimentale comprehensive	2	6,666	6,666	6,666
ABSWUT12	UE	English II	4	36	0	0
ABS5AAJ	AN	Master 2 Biomedical Engineering - WUT/AMU	60			
ABSCSAJ	SE	Semestre 3 M2 Biomed Eng WUT/AMU	30			
ABSAMU05	UE	Cellular and Molecular Biotherapy	4	36	0	0
ABSWUT08	UE	Skills for scientific writing	4	36	0	0
ABSWUT09	UE	Academic activities	12	40	40	40
ABSWUT13	UE	Introduction to dialectics of nature	2	18	0	0
ABSWUT14	UE	Mathematical Physics Equations	4	36	0	0
ABSWUT15	UE	Applied Mathematical Statistics	4	36	0	0
ABSDSAJ	SE	Semestre 4 M2 Biomed Eng WUT/AMU	30			
ABSSTG02	UE	Stage	30	100	100	100
ABS6AJ	AN	Année 3 Master Biomedical engineering	0			
ABSEAJ	SE	Semestre 5 Master Biomed Eng WUT/AMU Biomed Eng WUT/AMU	0			
ABSWUTSTAG 1	UE	Stage semestre 5 WUT/AMU	0	0	0	0
ABSFAJ	SE	Semestre 6 Master Biomed Eng WUT/AMU Biomed Eng WUT/AMU	0			
ABSWUTSTAG 2	UE	Stage semestre 6 WUT/AMU	0	0	0	0