

Programme specification

(Notes on how to complete this template are provided in Annexe 2)

1. Overview/ factual information

Programme/award title(s)	a. BSc (Honours) –Biomedical Sciences b. BSc – Biomedical Sciences c. Diploma in Higher Education – Biomedical Sciences d. Certificate in Higher Education
Teaching Institution	Deree - The American College of Greece
Awarding Institution	The Open University (OU)
Date of first OU validation	October 2019
Date of latest OU (re)validation	
Next revalidation	February 2024
Credit points for the award	BSc (Honours) – Biomedical Sciences:375
UCAS Code	
Programme start date	January 2020
Underpinning QAA subject benchmark(s)	Biomedical Sciences
Other external and internal reference points used to inform programme outcomes	None
Professional/statutory recognition	
Mode(s) of Study (PT, FT, DL, Mix of DL & Face-to-Face)	
Duration of the programme for each mode of study	FT-3 years
Dual accreditation (if applicable)	NECHE Accredited
Date of production/revision of this specification	July 2019

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in student module guide(s) and the students' handbook.

The accuracy of the information contained in this document is reviewed by the University and may be verified by the Quality Assurance Agency for Higher Education.

2.1 Educational aims and objectives

Mission

In congruence with the mission of the College, the mission of the **BMS** program is to provide students with theoretical knowledge, as well as practical and transferable skills that will allow them to succeed in biomedical and health sciences careers. The program also aims to develop an understanding of ethical issues in the biomedical sciences, and to create informed and responsible citizens and professionals.

Aims

The program will be accessible to candidates of all educational backgrounds and will provide opportunities to select various concentrations.

The aims of the **BMS** program are to:

- Provide a firm knowledge basis and understanding of biomedical and health sciences by integrating knowledge not only from general modules in biology, chemistry, physics and mathematics, but also from advanced modules in molecular and cellular biology, human anatomy and physiology, infectious diseases and immunity, pathophysiology and pharmacology.
- Enable students to realize the relationship between health and disease, between environmental burden on gene expression and human development, as well as the interrelationships of body and brain.
- Identify the relationships among incidence, diagnosis and treatment of diseases, as well as promote the maintenance and improvement of health in different populations and in a sustainable way.
- Enable students to integrate theories and methodologies from different fields in the quest for a holistic and interdisciplinary understanding of biomedical and health sciences; and to explore health and disease from a problem- and evidence-based perspective.
- Enable students to gain a foundation on research methods in biomedical and health sciences ranging from the study of gene expression to the cell, tissue and organ system functions.

- Enable students to obtain the necessary skills for practical work in a variety of laboratory settings in the biomedical and health sciences.
- Provide a student-centered learning environment that promotes the academic and personal development of the students and helps them become independent learners.
- Develop students' cognitive, practical and transferable skills necessary for postgraduate study and future careers in the biomedical and health science fields.

Learning Outcomes

Upon completion of the **BMS** degree, students will have mastered skills in the following areas:

Knowledge and Understanding

Students should demonstrate knowledge and understanding of:

- core concepts, principles, theories, tools and practice in biology, chemistry and physics that provide an essential foundation of knowledge in the biomedical and health sciences field.
- human physiology, as well as human genetic, metabolic and developmental processes, brain function, and the impact of environmental exposures on living functions and human health.
- appropriate methods for acquiring, analyzing and interpreting scientific data and information, as well as of the role and limitations of science.
- basic tools in mathematics, as well as of quantitative and qualitative techniques and data processing methods including use of various ICT tools to acquire, analyze and interpret information related to biomedical and health sciences.
- Specializations within the biomedical sciences (such as pharmacology, pathophysiology, health management and policy, health communication).

Cognitive Skills

Students should be able to:

- Use and correctly apply knowledge and understanding of biomedical concepts, principles and theories to problem solving.
- Explain moral and ethical issues of investigations and the need for professional codes of conduct.
- Use and analyze data and information concerning biomedical and health issues and critically evaluate their reliability, validity and significance.

- Synthesize and integrate several lines of subject-specific evidence towards a given purpose.

Practical and Professional Skills

Students should be able to:

- Plan and conduct practical or practice-based tasks related to biomedical and health sciences in a safe and ethical manner, and use appropriate laboratory equipment competently and safely.
- Conduct basic or clinical research in a responsible, safe and ethical manner, considering risk assessment as well as health and safety regulations.
- Select and apply a range of methods, including ICTs, to study and address biomedical and health problems.
- Use writing and reporting skills related to biomedical scientific literature with appropriate referencing, as well as plan, conduct and present an independent project.

Key/Transferable Skills

Students should be able to:

- Locate, record, process, and analyze data and information from a variety of sources, using appropriate qualitative and quantitative methods, including the use of statistics, spreadsheets and programs for presenting data visually.
- Communicate scientific information accurately and effectively in written, oral, visual and numerical formats in a style that suits the purpose and the audience, as well as produce detailed and coherent project reports.
- Collaborate as a member of a team and demonstrate that essential skill in personal and professional development.
- Engage in independent study and self-evaluation.

Note: The term course(s) is equivalent with the term module(s)

2.2 Relationship to other programmes and awards

(Where the award is part of a hierarchy of awards/programmes, this section describes the articulation between them, opportunities for progression upon completion of the programme, and arrangements for bridging modules or induction)

This programme specification is part of a US bachelor's degree programme that consists of 121 US credits, comprising 44 credits of General Education credits, 70 credits of Concentration, and 7 credits of Electives.

Deree-Liberal Education Program (Distance Learning)

	Credit Hours
Total	43
Core Modules	
Academic Writing (WP designated course)	3
Integrated Academic Writing & Ethics	3
Academic Writing, Research (WP 1212)	3
Mathematics (basic statistics, college algebra, OR higher)	3
Public speaking or professional communication or equivalent	3
Introduction to information systems or equivalent computer literacy course *	3
Any Natural Science with a lab	4
Liberal Education Electives (must meet at least 4 LE competencies)	
LE designated course in STEM/Natural Sciences	3
LE designated courses in the Social Sciences	9
LE designated courses in Humanities	6
LE designated course in Fine and Performing Arts (including MU 1000)	3

*May be fulfilled through appropriate academic evaluation

LE designated courses in the Social Sciences and Humanities must come from at least two different disciplines

TOTAL: 43

P.S. In the case of the BMS Programme the 3cr STEM requirement under Liberal Education Electives is replaced by
 One course in Natural Sciences (without a Lab)/STEM4
 The total LE credits therefore for the BMS program are 44.

Plus, the three courses in Social and Behavioural Sciences are replaced by two as one requirement is SO 3007 LE Health and Society L5 and the two courses in Humanities is replaced by one as one requirement is PH 3XXX Ethics L5

LIBERAL EDUCATION-MISSION

A vital component of the undergraduate experience, the Liberal Education program prepares students to become globally engaged twenty-first century citizens with the knowledge, intellectual habits, practical skills, and socio-cultural sensibilities needed in a rapidly changing world. Liberal Education helps students develop essential competencies for success across disciplines and in life beyond college by cultivating open mindedness, tolerance, problem-solving ability, intellectual curiosity and creativity.

It also promotes thoughtful self-expression, an ethical compass, and responsibility to the local and global communities.

LIBERAL EDUCATION COMPETENCIES AND LEARNING OUTCOMES

1. Communication and Information Literacy

1. Demonstrate effective verbal (writing, speaking and listening) and nonverbal communication skills.
2. Retrieve, critically evaluate and synthesize information adhering to legal and ethical practices.
3. Show knowledge of the stages needed from draft to final text or presentation using proper documentation and citation.
4. Demonstrate a mastery of the basic skills in information technology.

2. Social Responsibility and Civic Engagement

1. Discuss issues of identity and inclusion.
2. Explain different dimensions of sustainability and how it relates to one's discipline.
3. Discuss ways of responsible civic engagement.
4. Engage in activities that serve the needs of the local and global community.
5. Evaluate elements of Greek society that reflect Greek cultural values and the desirability to maintain or change such values so that Greek society can succeed in a new interdependent environment without losing its identity.

3. Cultural and Global Perspectives

1. Discuss world history or sociocultural traditions from different perspectives.
2. Describe diverse worldviews, ideas, institutions or artistic expressions manifest in varied contexts globally.
3. Demonstrate understanding of the workings of Greek, American and European social, political and economic systems and trace the geographical and historical factors that shape these systems.
4. Evaluate perspectives on cultural diversity.

4. Ethics and Values

1. Explain the importance of values in our venture to understand the world.
2. Identify ethical issues in different contexts, especially in one's major course of study.
3. Discuss ideologies and ethical principles upheld by different cultures and co-cultures.
4. Describe different approaches through which ethical dilemmas may be examined and resolved.

5. Aesthetic Expression

1. Discuss the main themes, symbols, and means of expression in various art forms.
2. Demonstrate ability to create or recreate aesthetic works that reflect knowledge of the artistic process and awareness of self, social and stylistic contexts.
3. Reflect on the outcomes of an artistic work.
4. Discuss the value of diversity in creative approaches in the visual, verbal and performing arts.

6. Scientific and Quantitative Literacy

1. Describe major concepts, principles, laws and theories in mathematics and the natural sciences.
2. Discuss the impact of science and technology on the individual, society, and the physical environment.

3. Apply scientific and mathematical methods and principles in making informed decisions in various disciplines.
4. Demonstrate practical and processing skills associated with natural sciences, mathematics and technology.
7. **Integration**
 1. Synthesize concepts learned in the Liberal Education program with major concepts in one's academic major.
 2. Evaluate theoretical and practical knowledge included in Liberal Education competencies in the context of academic and professional enhancement.

2.3 For Foundation Degrees, please list where the 60 credit work-related learning takes place. For apprenticeships an articulation of how the work based learning and academic content are organised with the award.

2.4 List of all exit awards

- a. *BSc (Honours) – Biomedical Sciences*
- b. *BSc – Biomedical Sciences*
- c. *Diploma in Higher Education – Biomedical Sciences*
- d. *Certificate in Higher Education*

3. Programme structure and learning outcomes

Programme Structure - LEVEL 4					
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensable?	Semester runs in
	120				
BI 1000 LE Introduction to Biology I	20				
BI 1101 LE Introduction to Biology II	20				
MA 22XX Calculus I	20				
CH 1002 Principles of Chemistry	20				
CH 21XX General Chemistry	20				
PY 22XX University Physics I	20				

Programme Structure - LEVEL 5					
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensable?	Semester runs in
	115	One of the following modules	15		
PY 33XX University Physics II	20	BI 3232 Cellular and Molecular Neurobiology			
CH 32XX Organic Chemistry	15	BI 3204 Human Genetics			
CH 33XX Organic and Biological Chemistry	15	BI 3215 Environmental Health			
CH 33XX Organic and Biological Chemistry Lab	10	BI 34XX Human Nutrition			
BI 32XX Cell and Molecular Biology	20				
BI 32XX Human Anatomy and Physiology	20				
BI 32XX Microbiology and Infectious Diseases	15				

Programme Structure - LEVEL 6					
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensable?	Semester runs in
	35	6 modules out of the following	90		
BMS 45XX Research Methods and ICT tools in Biomedical Sciences (Lab course)	15	BMS 40XX Internship in Biomedical and Health Sciences	15		
BMS 46XX Capstone in Biomedical Sciences	20	BMS 44XX Environmental Burden in Neurodevelopment	15		
		BMS 44XX Pharmacology in Health and Disease	15		
		BMS 43XX Health Information Systems & Technology	15		
		HM 4041 Health Policy and Governance	15		
		BMS 44XX Topics in Pathophysiology	15		
		BMS 44XX Allergy and Immunity	15		

Intended learning outcomes at Level 4, 5 & 6 are listed below:

<u>Learning Outcomes – LEVEL 4, 5 & 6</u>	
3A. Knowledge and understanding	
Learning outcomes:	Learning and teaching strategy/ assessment methods

Upon completion of the BMS programme, students will be able to demonstrate knowledge and understanding of:

A1. core concepts, principles, theories, tools and practice in biology, chemistry and physics that provide an essential foundation of knowledge in the biomedical and health sciences field.

A1.

Where it is taught:

To attain this learning outcome, students take the following **level 4** modules:

BI 1000 Introduction to Biology I L4
 BI 1101 Introduction to Biology II L4
 CH 1002 Principles of Chemistry L4
 CH 21XX General Chemistry L4
 PY 22XX University Physics I L4

and the following **level 5** modules:

PY 33XX University Physics II L5
 CH 32XX Organic Chemistry L5
 CH 33XX Organic and Biological Chemistry L5
 CH 33XX Organic and Biological Chemistry Lab L5

LEVEL 4:

➤ **BI 1000 Introduction to Biology I**

An integrated exploration of the fundamentals of biology as a science, the nature of life, biological chemistry, cell biology, metabolism and human body anatomy and function.

➤ **BI 1101 Introduction to Biology II**

An integrated exploration of major principles of biology. Emphasis on diversity of life, development, cell division, molecular biology, genetics, evolution, and ecology. Consideration of issues and applications related to society.

➤ **CH 1002 Principles of Chemistry**

An introduction to chemical science and the chemistry of everyday life. The module presents fundamental principles of chemistry such as atomic theory, chemical bonding, chemical reactions, states of matter, nuclear chemistry as well as basic concepts of inorganic chemistry. Focus is given to chemical applications and their relevance to the natural environment.

➤ **CH 21XX General Chemistry**

	<p>General Chemistry builds upon essential chemical concepts and their applications. It is a systematic study of chemical change and equilibria. Topics include advanced atomic structure and hybridization, thermochemistry and thermodynamics, ionic equilibria, electrochemistry and kinetics</p> <ul style="list-style-type: none"> ➤ PY 22XX University Physics I An introduction to the classical laws of motion, including kinematics, forces in nature, Newton's laws of motion, conservation of energy and momentum, fluid statics and dynamics, oscillations, waves, thermodynamics and properties of matter. Suggested for students of the life science or engineering programs. <p>LEVEL 5:</p> <ul style="list-style-type: none"> ➤ PY 33XX University Physics II Principles in electricity, magnetism, the nature of light and electromagnetic radiation, wave phenomena, Einstein's Theories, the structure of the atom, quantum theory and nuclear physics. ➤ CH 32XX Organic Chemistry An introduction to organic chemistry, focusing primarily on the basic principles underlying the structure and reactivity of organic molecules. Hydrocarbons, alcohols and ethers, aldehydes, ketones and carboxylic acids are discussed, with emphasis on biomolecular applications of reaction mechanisms, stereochemistry, nomenclature and tools for structure determination, including nuclear magnetic resonance and infrared spectroscopy. ➤ CH 33XX Organic and Biological Chemistry Organic chemistry with focus on the chemistry of life, examining proteins, carbohydrates, lipids, nucleic acids, the relationship between structure and function, as well as metabolism and gene expression. ➤ CH 33XX Organic and Biological Chemistry Lab An introduction to methods of analysis in organic and biological chemistry, with emphasis on laboratory techniques and structure determination. Students get exposed to techniques such as distillation, vacuum filtration, liquid extraction, spectroscopy, chromatography and rotary evaporation; they also learn to apply the scientific method and design an experiment. <p><u>Learning and Teaching Strategy:</u></p>
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	<p>In congruence with the Learning and Teaching strategy of the College, the following tools are used in the above level 4 and 5 modules:</p> <ul style="list-style-type: none"> ➤ Class lectures, interactive learning (class discussions, group work), exercises and practical problems solved in class. Active learning methods and a student-centered teaching approach are particularly encouraged. ➤ Throughout the lectures, students develop knowledge and understanding related to the subject by means of collaborative in-class case discussions and specialized video presentations, which reinforce students' cognitive and key transferable skills. ➤ Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class. ➤ Use of a Blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources. ➤ A recent addition to the teaching and learning strategy at this level is the use of Blackboard online tools (discussion boards, journals, blogs, wikis, and surveys) that promote interactive learning outside the classroom. ➤ Use of textbook web site and online resources. ➤ Laboratory and field activities (laboratory/field practical work and reports). ➤ Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material. ➤ Instructors provide essential feedback on coursework (lab reports, presentations, essays, projects) that students can use to improve their learning performance. <p><u>Assessment Methods:</u> Assessment methods give students the opportunity to display knowledge and understanding. Students get timely feedback (within 21 days) on their formative assessments and midterm assessments by their lecturer.</p> <p>Student performance in BI 1000 and BI 1101 midterm and final exam each consisting of two components are used for student assessment (see table below):</p> <p>Summative:</p> <table border="1" data-bbox="1102 1353 2110 1388"> <tr> <td>Midterm examination</td> <td>40%</td> </tr> </table>	Midterm examination	40%
Midterm examination	40%		

	<p>In-class lab midterm (1/2-hour), 10% (Microscopy slide identification, diagram labelling, organ identification, problem solving, short answers, classification of organisms, chemical reactions of processes etc.)</p> <p>In-class midterm examination (2-hour), 30% (Multiple choice/short answers/matching /essay questions combination/problem solving)</p>							
	<p>Final examination</p> <p>In-class lab final (1/2-hour), 10% (Microscopy slide identification, diagram labelling, organ identification, problem solving, short answers, classification of organisms, chemical reactions of processes etc.)</p> <p>In-class midterm examination (2-hour), 50% (Multiple choice/short answers/matching /essay questions combination/problem solving)</p>	60%						
	Formative:							
	Multiple "diagnostic on-line" tests	0%						
	Multiple choice/short answers/ essay questions	0%						
<p>Student performance in chemistry modules (CH 1002, CH 21XX, CH 32XX, CH 33XX) is assessed by a combination of exams, lab reports and coursework portfolio, as follows:</p> <p>For CH 1002 Principles of Chemistry</p> <p>Summative:</p> <table border="1"> <tr> <td>Midterm examination (2 hours): (Multiple choice/short answers/essay questions)</td> <td>30%</td> </tr> <tr> <td>Final examination (2 hours): (Multiple choice/short answers/essay questions)</td> <td>45%</td> </tr> <tr> <td>Lab report(s)</td> <td>25%</td> </tr> </table>			Midterm examination (2 hours): (Multiple choice/short answers/essay questions)	30%	Final examination (2 hours): (Multiple choice/short answers/essay questions)	45%	Lab report(s)	25%
Midterm examination (2 hours): (Multiple choice/short answers/essay questions)	30%							
Final examination (2 hours): (Multiple choice/short answers/essay questions)	45%							
Lab report(s)	25%							

	Formative:	
	Essay questions (as homework assignments)	0%
	In-class or online quizzes	0%
	For CH 21XX General Chemistry	
	Summative:	
	Coursework Portfolio (with 3 components, each counting towards 10%): exercises, problems, short answers	30
	Final Examination (Multiple choice, problems, short answers, essay questions)	50
	Laboratory Report	20
	Formative:	
	Homework	0
	For CH 32XX Organic Chemistry	
	Summative:	
	In-class midterm examination (2-hour), (Multiple choice/short answers/matching /short essay questions, exercises)	40%
	In-class final examination (2-hour), 50% (Multiple choice/short answers/matching /essay questions combination/problem solving)	60%
	Formative:	
Multiple homework quizzes and worksheets	0	
For CH 33XX Organic and Biological Chemistry:		
Summative:		
Coursework portfolio Includes three components:	50%	

	<ul style="list-style-type: none"> • short in-class midterm exam (25%) • a) in-class student presentation of a specific topic, followed by a written summary, or b) a structured reflection on a scientific article or report (25%) 			
	Final examination (2 hours) (essay questions)	50%		
	Formative:			
	Essay questions/problems (in-class or as homework assignments)	0		
	In-class or online quizzes	0		
	For CH 33XX Organic and Biological Chemistry Lab:			
	Summative:			
	Laboratory Portfolio (Worksheets, short answers, investigations)	60		
	Group project (design and execution of a group project that addresses a particular theme in organic chemistry methodology and submission of a research paper)	40		
	Formative:			
	Multiple homework quizzes and worksheets	0		
	<p>Student performance in physics modules is assessed through a combination of lab reports and exams. In PY 22XX University Physics I (L4) and PY33XX University Physics II (L5), assessment is as follows:</p>			
	Summative:			
	<table border="1"> <tbody> <tr> <td>Laboratory Report</td> <td>10%</td> <td>Students will have to submit one full lab report on an experiment which they have performed and will be evaluated on the following criteria: Personal engagement,</td> </tr> </tbody> </table>	Laboratory Report	10%	Students will have to submit one full lab report on an experiment which they have performed and will be evaluated on the following criteria: Personal engagement,
Laboratory Report	10%	Students will have to submit one full lab report on an experiment which they have performed and will be evaluated on the following criteria: Personal engagement,		

		Exploration, Analysis, Evaluation, Communication.
In-class midterm examination (1-hour)	30%	Multiple choice/short answers/matching /essay questions combination/problem solving
Laboratory Report	10%	Students will have to submit one full lab report on an experiment which they have performed and will be evaluated on the following criteria: Personal engagement, Exploration, Analysis, Evaluation, Communication.
In-class midterm examination (2-hour)	50%	Multiple choice/short answers/matching /essay questions combination/problem solving
Total of all Exams	100	
Formative:		
1 Diagnostic test (In class or to take home)		0
<p>The midterm and final exams of all level 4 modules consist of a combination of multiple choice, short answers, problems and essay questions. These introductory modules provide a survey of the field (e.g. biology, chemistry and physics). The multiple-choice questions examine a large number of topics and cover breadth, while the essay questions assess students' ability to explain and discuss specific topics, thus allowing students to demonstrate knowledge, understanding and a certain level of critical thinking. Lab exams and lab reports examine the lab component of these modules. Lab or field activities and reports help develop students' practical skills, introducing them to the scientific method and to the process of data collection, processing and interpretation. The coursework portfolios of CH 21XX General Chemistry and CH 33XX Organic and Biological Chemistry (with exercises, critical</p>		

<p>A2. human physiology, as well as human genetic, metabolic and developmental processes, brain function, and the impact of environmental exposures on living functions and human health.</p>	<p>reflection and lab reports) aim to improve students' scientific writing, problem solving and critical scientific thinking skills.</p> <p>A2.</p> <p><u>Where it is taught:</u></p> <p>To attain this learning outcome, students take the following level 4, level 5 and level 6 modules:</p> <p>BI 1000 Introduction to Biology I L4 BI 1101 Introduction to Biology II L4</p> <p>BI 32XX Cell and Molecular Biology L5 BI 32XX Human Anatomy and Physiology L5 CH 33XX Organic and Biological Chemistry L5 CH 33XX Organic and Biological Chemistry (lab) L5 BI 3232 Cellular and Molecular Neurobiology L5 BI 3204 Human Genetics L5 BI 3215 Environmental Health L5 BI 34XX Human Nutrition L5 BI 32XX Microbiology and Infectious Diseases L5</p> <p>BMS 44XX Environmental Burden in Neurodevelopment L6 BMS 44XX Allergy and Immunity L6</p> <p>LEVEL 4:</p> <ul style="list-style-type: none"> ➤ BI 1000 Introduction to Biology I (see A1) ➤ BI 1101 Introduction to Biology II (see A1) <p>LEVEL 5:</p> <ul style="list-style-type: none"> ➤ BI 32XX Cell and Molecular Biology
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	<p>An integrated exploration of the fundamentals of cell and molecular biology as a science, the nature of life, biological chemistry, cell biology, metabolism and genetics.</p> <ul style="list-style-type: none"> ➤ BI 32XX Human Anatomy and Physiology An integrated exploration of the fundamentals of human anatomy including tissues, organs and systems with an emphasis on their pathophysiology. ➤ CH 33XX Organic and Biological Chemistry (see A1) ➤ CH 33XX Organic and Biological Chemistry (lab) (see A1) ➤ BI 3232 Cellular and Molecular Neurobiology A course on cellular and molecular neurobiology. The course will cover the neuron morphology, neurophysiology, neurochemistry and neuroanatomy, sensory receptor systems, and motor systems, neuro development and the biology of higher cognitive function. ➤ BI 3204 Human Genetics An integrated exploration of human genetics for science majors. Focuses on fundamental concepts of gene transmission, gene expression, human development, population genetics and human origins, including the genetics of immunity, cancer and behaviour. It examines genetic diseases and applications of genetic technologies. ➤ BI 3215 Environmental Health This course examines health issues, the scientific understanding of their causes and possible future approaches to control major environmental health problems in industrialized and developing countries. ➤ BMS 34XX Human Nutrition An integrated overview of the physiological requirements and functions of major nutrients for humans, the connection between nutrition and disease, the role of nutrients in growth and health through the life cycle and in physical activity, dietary requirements, as well as issues of food safety, food security and contemporary challenges of nutrition and the food system. ➤ BMS 32XX Microbiology and Infectious Diseases An analysis of essential microbiology and infectious disease. The course introduces the major classes of micro-organisms and through their biological adaptations relates them to human activity. Their beneficial and harmful roles on humans is discussed through case studies, disease profiles and epidemiological analysis.
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	<p>LEVEL 6:</p> <ul style="list-style-type: none"> ➤ BMS 44XX Environmental Burden in Neurodevelopment The course focuses on fundamental principles of organogenesis in the nervous system and integrates information from a variety of model systems, relating them to human nervous system development trajectory, including disorders of development. It offers expanded coverage of topics such as neuronal determination, axonal navigation and targeting, neuron survival and death, synapse formation and developmental plasticity. Environmental exposures, epigenetics, gene expression, cell migration and stem cells, sleep and learning/memory, socioeconomic status and development of prefrontal cortex function are considered. ➤ BMS 44XX Allergy and Immunity The course provides a detailed review of allergy and immunology and an integrated exploration of molecular, cellular, physiologic and pathologic aspects of the immune system. The pathophysiology of the immune system as it contributes to diseases, autoimmunity is explored together with various treatment strategies for allergic and immune disorders. <p><u>Learning and Teaching Strategy:</u></p> <p>In congruence with the Learning and Teaching strategy of the College, the following tools are used in the above level 4 and 5 modules:</p> <ul style="list-style-type: none"> ➤ Class lectures, interactive learning (class discussions, group work), exercises and practical problems solved in class. Active learning methods and a student-centered teaching approach are particularly encouraged. ➤ Throughout the lectures, students develop knowledge and understanding related to the subject by means of collaborative in-class case discussions and specialized video presentations, which reinforce students' cognitive and key transferable skills. ➤ Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class. ➤ Discussion and analysis of original data from primary research papers and other sources (especially in level 5 and level 6 modules).
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	<ul style="list-style-type: none"> ➤ Discussion of scientific literature and of case studies (level 5 and 6 modules) ➤ Student projects and presentations. ➤ Use of a Blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources. ➤ A recent addition to the teaching and learning strategy at this level is the use of Blackboard online tools (discussion boards, journals, blogs, wikis, and surveys) that promote interactive learning outside the classroom. ➤ Use of textbook web site and online resources. ➤ Laboratory and field activities (laboratory/field practical work and reports). ➤ Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material. ➤ Instructors provide essential feedback on coursework (lab reports, presentations, essays, projects) that students can use to improve their learning performance. ➤ In the level 6 modules, master lectures by retired professors and other experts in the field are included. ➤ Tutorials of an interactive format to establish understanding of topic areas primarily through case studies and experimentally derived data. <p><u>Assessment Methods:</u> Assessment methods give students the opportunity to display knowledge and understanding. Students get timely feedback (within 21 days) on their formative assessments and midterm assessments by their lecturer.</p> <p>Student performance in BI 1000 and BI 1101 midterm and final exam each consisting of two components are used for student assessment (see A1).</p> <p>For BI 32XX Cell and Molecular Biology L5 and BI 32XX Human Anatomy and Physiology L5, one midterm assessment consisting of a lab report and an in-class test and a final examination are used:</p> <p>Summative:</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 80%;">Midterm assessment</td> <td style="width: 20%;">40%</td> </tr> <tr> <td>i) Laboratory report (20%)</td> <td></td> </tr> <tr> <td>ii) In course test (MCQ - Multiple choice) – 40 minutes (20%)</td> <td></td> </tr> </table>	Midterm assessment	40%	i) Laboratory report (20%)		ii) In course test (MCQ - Multiple choice) – 40 minutes (20%)	
Midterm assessment	40%						
i) Laboratory report (20%)							
ii) In course test (MCQ - Multiple choice) – 40 minutes (20%)							

	Final examination i) Multiple choice questions ii) Essay questions	60%
Formative:		
Coursework "diagnostic" (MC/problems/essay questions combination)		0%
In-class or online quizzes		0%
<p>A coursework portfolio and a final examination are used in CH 33XX Organic and Biological Chemistry L5 (See A1). A Lab portfolio and a group project for CH 33XX Organic and Biological Chemistry Lab L5 (See A1).</p>		
<p>Two examinations are used for BI 3232 Cellular and Molecular Neurobiology L5:</p>		
Summative:		
Midterm examination In-class midterm examination (2-hour) (Multiple choice/short answers/matching /essay questions combination/problem solving)		40%
Final examination In-class final examination (2-hour) (Multiple choice/short answers/matching /essay questions combination/problem solving)		60%
Formative:		
Multiple "diagnostic on-line" tests Multiple choice/short answers/essay questions		0
<p>A midterm examination and a portfolio consisting of chapter presentation, paper or poster and oral presentation of paper or poster are used for BI 3204 Human</p>		
Genetics L5		
Summative:		
Midterm examination In-class midterm examination (2-hour) (Multiple choice/short answers/matching /essay questions combination/problem solving)		40%

	<p>Portfolio Flipped Classroom: Chapter presentation 20% Paper or Poster 20% Oral Presentation of Paper or Poster 20%</p>	<p>60%</p>
<p>Formative: Multiple "diagnostic on-line" tests Multiple choice/short answers/ essay questions</p>	<p>0 0</p>	
<p>A project and a final examination are used to assess students in BI 3215</p>		
<p>Environmental Health L5:</p>		
<p>Summative:</p>		
<p>Project (2,000 to 2,500 words)</p>	<p>40%</p>	
<p>Final examination (2 hours): Essay questions</p>	<p>60%</p>	
<p>Formative:</p>		
<p>Essay questions (as homework assignments)</p>	<p>0</p>	
<p>A coursework portfolio consisting of a student project and a critical reflection essay and a final examination are used to assess students in BMS 34XX Human Nutrition</p>		
<p>L5:</p>		
<p>Summative:</p>		
<p>Coursework Portfolio It includes the following components: <ul style="list-style-type: none"> • Student project on a specific nutrition topic leading to a written report and oral presentation (30%) • Critical reflection on a scientific article or report (20%) </p>	<p>50%</p>	
<p>Final examination (2 hours) (essay questions)</p>	<p>50%</p>	
<p>Formative:</p>		

	Essay questions/problems (in-class or as homework assignments)	0
	In-class or online quizzes	0
	<p>Analysis of a case study and a final examination are the assessment strategy used in BMS 32XX Microbiology and Infectious Diseases L5: Summative:</p>	
	Case Study (Students will be given in random an actual case study and will be required to identify the pathogen/disease/syndrome and file a 2000 word report on it)	40%
	Final Examination (Short and Long Essay Questions)	60%
	Formative:	
	Source-based questions (in-class or as homework assignments)	0%
	<p>Finally, the level 6 modules BMS 44XX Environmental Burden in Neurodevelopment L6 and BMS 44XX Allergy and Immunity L6 use a midterm exam and a final assessment (seen exam/case study). Summative:</p>	
	Method of 1 st SUMMATIVE assessment: Time constrained assessment: Online/in class MCQ questions	20%
	Method of 2 nd SUMMATIVE assessment: Seen Exam/Case study Outline Details: Students will be expected to complete both parts of the seen exam consisting of <ul style="list-style-type: none"> • essay question (s) • critical evaluation of case study data and/or analysis and evaluation based on the scientific literature on a topic of current investigative research interest 	80%

<p><i>A3. appropriate methods for acquiring, analyzing and interpreting scientific data and information, as well as of the role and limitations in science.</i></p>	TOTAL	100%
	Formative:	
	Multiple "diagnostic on-line" tests Multiple choice/short answers/	0
	essay questions	0
<p>The diversity of assessment strategies used in all above modules reflects the different nature and the particular learning outcomes of each module. They all ensure that students will gain appropriate knowledge and can be suitable for different learning styles.</p> <p>A3.</p> <p><u>Where it is taught:</u></p> <p>It should be noted that, to a certain level, students gain introductory knowledge of methods in biology, chemistry and physics at level 4, as all modules of this level have a lab component.</p> <p>BI 1000 Introduction to Biology I L4 BI 1101 Introduction to Biology II L4 CH 1002 Principles of Chemistry L4 CH 21XX General Chemistry L4 PY 22XX University Physics I L4</p> <p>This learning outcome is mostly attained in the following level 5 and 6 modules:</p> <p>PY 33XX University Physics II L5 BI 32XX Cell and Molecular Biology L5 BI 32XX Human Anatomy and Physiology L5 CH 33XX Organic and Biological Chemistry Lab L5</p> <p>BMS 45XX Research Methods and ICT Tools in Biomedical Sciences L6 BMS 46XX Capstone in Biomedical Sciences L6 BMS 43XX Health Information Systems and Technology L6</p>		

	<p>LEVEL 4</p> <ul style="list-style-type: none"> ➤ BI 1000 Introduction to Biology I (see A1) ➤ BI 1101 Introduction to Biology II (see A1) ➤ CH 1002 Principles of Chemistry (see A1) ➤ CH 21XX General Chemistry (see A1) ➤ PY 22XX University Physics I (see A1) <p>LEVEL 5:</p> <ul style="list-style-type: none"> ➤ PY 33XX University Physics II (see A1) ➤ BI 32XX Cell and Molecular Biology (see A2) ➤ BI 32XX Human Anatomy and Physiology (see A2) ➤ CH 33XX Organic and Biological Chemistry (lab) (see A1) <p>LEVEL 6:</p> <ul style="list-style-type: none"> ➤ BMS 45XX Research Methods and ICT Tools in Biomedical Sciences The course provides a guide to the key practical and broader skills needed in biomedical sciences, including comprehensive coverage of: study and examination skills; fundamental laboratory and analytical skills; investigative techniques and evaluation skills; analysis and presentation of data. The capstone proposal is also prepared in this course. ➤ BMS 46XX Capstone in Biomedical Sciences This course is the culmination of the work in Biomedical Sciences. It involves an individual research project and is designed to provide students with opportunities to research health and biomedical sciences issues from different perspectives. The project topics are selected from a broad spectrum of BMS areas. ➤ BMS 43XX Health Information Systems and Technology The course provides an overview of Health Information Technology, Health Informatics and Biomedical Informatics. The student is introduced to the concepts of the discipline, models, and systems including the major areas of the evolving discipline. The course focuses on the application of health information technology for healthcare delivery, education and research as well as the multidisciplinary nature of informatics. <p><u>Learning and Teaching Strategy:</u></p> <ul style="list-style-type: none"> ➤ Class lectures, lab and practical work, interactive learning (class discussions, group work) audio-visual presentations, model, databases, and other and practical
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	<p>problems solved in class.</p> <ul style="list-style-type: none"> ➤ Exercises and primary source documents are assigned as homework, the solutions of which are reviewed in class ➤ Laboratory work (practical engagement, reporting calculations and data processing). ➤ Instruction and demonstration of techniques through online, virtual and physical resources. ➤ Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material. ➤ Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources. ➤ Use of online interactive tools (e.g. journal, blog or discussion board). Instructors will provide feedback and share project-specific material with each individual student through Blackboard. ➤ Capstone project will include independent research: literature review, collection of data and information, critical evaluation, analysis and synthesis. ➤ Presentations of student projects and discussion. Students are required to present orally (defend) their capstone project <p><u>Assessment Methods:</u></p> <p>LEVEL 4:</p> <p>All level 4 science modules have a lab component and are assessed by either two exams (including lab quizzes) or by a combination of exams and lab reports. (see A1).</p> <p>LEVEL 5:</p> <p>For BI 32XX Cell and Molecular Biology L5 and BI 32XX Anatomy and Physiology L5, one midterm assessment consisting of a lab report and an in-class test and a final examination are used (see A2), while for CH 33XX Organic and Biological Chemistry (lab) a lab portfolio and a group project are used (see A2).</p> <p>LEVEL 6:</p>
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	<p>Both BMS 45XX Research Methods and ICT Tools in Biomedical Sciences and BMS 43XX Health Information Systems and Technology use a coursework portfolio consisting of a review of a scientific article, a student project and, either a capstone proposal (Research Methods module) or a Health informatics/ Data analysis product (ICT Tools module), as follows:</p> <p>BMS 45XX Research Methods and ICT Tools in Biomedical Sciences :</p> <p>Summative:</p> <table border="1" data-bbox="1108 542 2112 762"> <tr> <td>Coursework Portfolio It includes the following components: <ul style="list-style-type: none"> • Review of a scientific article or report (20%) • Student project on a specific topic leading to a written report and oral presentation (50%) • Student's capstone proposal (2,000 - 3,000 words) (30%) </td> <td style="text-align: center;">100%</td> </tr> </table> <p>Formative:</p> <table border="1" data-bbox="1108 794 2112 861"> <tr> <td>Selected practical exercises and short practice projects</td> <td style="text-align: center;">0</td> </tr> <tr> <td>essay questions</td> <td style="text-align: center;">0</td> </tr> </table> <p>BMS 44XX Health Information Systems and Technology L6</p> <p>Summative:</p> <table border="1" data-bbox="1108 941 2112 1225"> <tr> <td>Coursework Portfolio It includes the following components: <ul style="list-style-type: none"> • Review of a scientific article or report (20%) • Student project on a specific topic leading to a written report and oral presentation (50%) • Health informatics or data analysis product (audio-visual or ICT product), accompanied by an essay of up to 750 words (30%) </td> <td style="text-align: center;">100%</td> </tr> </table> <p>Formative:</p> <table border="1" data-bbox="1108 1257 2112 1324"> <tr> <td>Multiple on-line tests and short practice projects</td> <td style="text-align: center;">0</td> </tr> <tr> <td>essay questions</td> <td style="text-align: center;">0</td> </tr> </table>	Coursework Portfolio It includes the following components: <ul style="list-style-type: none"> • Review of a scientific article or report (20%) • Student project on a specific topic leading to a written report and oral presentation (50%) • Student's capstone proposal (2,000 - 3,000 words) (30%) 	100%	Selected practical exercises and short practice projects	0	essay questions	0	Coursework Portfolio It includes the following components: <ul style="list-style-type: none"> • Review of a scientific article or report (20%) • Student project on a specific topic leading to a written report and oral presentation (50%) • Health informatics or data analysis product (audio-visual or ICT product), accompanied by an essay of up to 750 words (30%) 	100%	Multiple on-line tests and short practice projects	0	essay questions	0
Coursework Portfolio It includes the following components: <ul style="list-style-type: none"> • Review of a scientific article or report (20%) • Student project on a specific topic leading to a written report and oral presentation (50%) • Student's capstone proposal (2,000 - 3,000 words) (30%) 	100%												
Selected practical exercises and short practice projects	0												
essay questions	0												
Coursework Portfolio It includes the following components: <ul style="list-style-type: none"> • Review of a scientific article or report (20%) • Student project on a specific topic leading to a written report and oral presentation (50%) • Health informatics or data analysis product (audio-visual or ICT product), accompanied by an essay of up to 750 words (30%) 	100%												
Multiple on-line tests and short practice projects	0												
essay questions	0												

A4. basic tools in mathematics, as well as of quantitative and qualitative techniques and data processing methods including use of various ICT tools to acquire, analyze and interpret information related to biomedical and health sciences.

Finally, the **BMS 46XX Capstone in Biomedical Sciences** is an independent study module that is assessed by a final project paper (thesis) accompanied by an oral defense (see below):

Summative:

Research project (6,500 - 7,000 words)	100%
<ul style="list-style-type: none"> • Project paper 85% • Oral defense 15% 	

Formative:

Regular meetings with instructor at different stages of research in which a student will receive feedback on his/her work.	0%
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The diversity of assessment strategies (exams, lab reports, review of scientific articles, projects, independent research paper and presentations) used in all above modules reflects the different nature and the particular learning outcomes of each module. They all ensure that students will learn appropriate methods for acquiring, analysing and interpreting scientific data and information relevant to biomedical sciences.

A4.

Where it is taught:

To attain this learning outcome, students take the following
MA 22XX Calculus I L4

BMS 45XX Research Methods and ICT Tools in Biomedical Sciences L6

BMS 46XX Capstone in Biomedical Sciences L6

BMS 43XX Health Information Systems and Technology L6

Learning and Teaching Strategy:

- For Calculus I, classes will consist of lectures where the concepts of the course will be introduced. Coursework will be regularly assigned and discussed in class with students actively participating in the discussion. Computer software will be available both as a teaching aid and as the medium for solving problems.
- For the other modules (Research Methods and Health Information Systems and Technology), class lectures, lab and practical work, interactive learning (class discussions, group work) audio-visual presentations, model, databases, and other and practical problems will be used. (see A3)
- Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material. (see A3)
- Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources. (see A3)
- Use of online interactive tools (e.g. journal, blog or discussion board). Instructors will provide feedback and share project-specific material with each individual student through Blackboard. (see A3)
- Capstone project will include independent research: literature review, collection of data and information, critical evaluation, analysis and synthesis.(see A3)
- Presentations of student projects and discussion. Students are required to present orally (defend) their capstone project. (see A3)

Assessment Methods:

In **MA 22XX Calculus I**, students are assessed by two examinations and a math portfolio.

Summative:

Midterm Examination	40%
Final Examination	50%
Math Portfolio Assessment	10%

A5. Specializations within the biomedical sciences (such as pharmacology, pathophysiology, health management and policy, health communication).

Formative:

In-class examination	0%
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In the three level 6 modules (BMS 45XX Research Methods and ICT Tools in Biomedical Sciences, BMS 46XX Capstone in Biomedical Sciences, BMS 43XX Health Information Systems and Technology, the assesemnt strategy is described in A3 (coursework portfolio, student project).

As stated also in A3, these assessments test well the learning outcomes of the particular modules and ensure that students gain knowledge of basic tools in mathematics, as well as of quantitative and qualitative techniques and data processing methods including use of various ICT tools to acquire, analyze and interpret information related to biomedical and health sciences.

A5.

Where it is taught:

BMS 46XX Capstone in Biomedical Sciences L6
 BMS 44XX Allergy and Immunity L6
 BMS 44XX Environmental Burden in Neurodevelopment L6
 BMS 44XX Pharmacology in Health and Disease L6
 BMS 44XX Topics in Pathophysiology L6
 BMS 40XX Internship in Biomedical and Health Sciences L6
 HM 4041 Health Policy and Governace L6

- **BMS 46XX Capstone in Biomedical Sciences (See A2)**
- **BMS 44XX Environmental Burden in Neurodevelopment (See A2)**
- **BMS 44XX Allergy and Immunity (See A2)**
- **HM 4041 Health Policy and Governace**
 Healthcare Policy and Governace issues, and practices. Funding, provision, regulation, quality of care and access in different settings.

	<ul style="list-style-type: none"> ➤ BMS 44XX Pharmacology in Health and Disease An integrated exploration of pharmacology in health and disease. Focuses on, principles of pharmacology, including receptor mechanisms, drug distribution and metabolism, and pharmacokinetics in addition to drug discovery, safety and efficacy. The existing and experimental treatment strategies in pharmacology both in health and disease are discussed. Specific cases, research and bioethics questions are explored in a critical and analytical approach. ➤ BMS 44XX Topics in Pathophysiology An integrated exploration of human pathophysiology. Focuses on molecular, cellular, physiologic and pathologic processes contributing to diseases. Specific cases, research and bioethics questions are explored in a critical and analytical approach including the existing and experimental treatment strategies. ➤ BMS 40XX Internship in Biomedical and Health Sciences Work-based learning in the field of Biomedical and Health Sciences, such as in a pharmaceutical industry or a clinical setting. Students gain hands-on experience and receive training as they learn to apply knowledge and skills gained in the program in a real life work environment. <p><u>Learning and Teaching Strategy:</u></p> <ul style="list-style-type: none"> ➤ Class lectures, interactive learning (class discussions, group work) video presentations, and practical problems solved in class. ➤ Exercises and primary source documents are assigned as homework, the solutions of which are reviewed in class ➤ Master lectures by retired professors and other experts in the field. ➤ Lectures on the principles and understanding of the subject matter, including original data from primary research papers and other sources. ➤ Tutorials of an interactive format to establish understanding of topic areas primarily through case studies and experimentally derived data. ➤ Literature discussions and case study analysis ➤ Independent research project (BMS 46XX Capstone module) with oral
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	<p>defence (see A3 for details)</p> <ul style="list-style-type: none"> ➤ Work-based learning internship (for the BMS 46XX Internship in Biomedical and Health Sciences module) ➤ Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material. ➤ Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources. <p><u>Assessments methods:</u></p> <p>The assessment of the capstone module (BMS 46XX) has been described in A3 (independent research project with paper and oral defense).</p> <p>In the modules BMS 44XX Allergy and Immunity, BMS 44XX Environmental Burden in Neurodevelopment, BMS 44XX Pharmacology in Health and Disease, BMS 44XX Topics in Pathophysiology, a combination of midterm and final examination are used, with the final consisting of a seen exam/case study.</p> <p>Summative:</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 80%;">Method of 1st SUMMATIVE assessment: Time constrained assessment: Online/in class MCQ questions</td> <td style="text-align: right;">20%</td> </tr> <tr> <td>Method of 2nd SUMMATIVE assessment: Seen Exam/Case study</td> <td></td> </tr> <tr> <td>Outline Details: Students will be expected to complete both parts of the seen exam consisting of</td> <td></td> </tr> <tr> <td> <ul style="list-style-type: none"> • essay question (s) • critical evaluation of case study data and/or analysis and evaluation based on the scientific literature on a topic of current investigative research interest </td> <td style="text-align: right;">80%</td> </tr> <tr> <td style="text-align: center;">TOTAL</td> <td style="text-align: right;">100%</td> </tr> </table> <p>Formative:</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 80%;">Multiple "diagnostic on-line" tests</td> <td style="text-align: right;">0</td> </tr> </table>	Method of 1 st SUMMATIVE assessment: Time constrained assessment: Online/in class MCQ questions	20%	Method of 2 nd SUMMATIVE assessment: Seen Exam/Case study		Outline Details: Students will be expected to complete both parts of the seen exam consisting of		<ul style="list-style-type: none"> • essay question (s) • critical evaluation of case study data and/or analysis and evaluation based on the scientific literature on a topic of current investigative research interest 	80%	TOTAL	100%	Multiple "diagnostic on-line" tests	0
Method of 1 st SUMMATIVE assessment: Time constrained assessment: Online/in class MCQ questions	20%												
Method of 2 nd SUMMATIVE assessment: Seen Exam/Case study													
Outline Details: Students will be expected to complete both parts of the seen exam consisting of													
<ul style="list-style-type: none"> • essay question (s) • critical evaluation of case study data and/or analysis and evaluation based on the scientific literature on a topic of current investigative research interest 	80%												
TOTAL	100%												
Multiple "diagnostic on-line" tests	0												

	Multiple choice/short answers/															
	essay questions	0														
<p>In the BMS 40XX Internship in Biomedical and Health Sciences module, students conduct an internship and are assessed as follows:</p> <p>Summative:</p> <table border="1"> <tr> <td>1st Assessment: Reflective Paper (2,500-3,000 words). A reflection on the internship experience, including an oral presentation to faculty and fellow students. Oral presentation counts 10% of the 1st assessment grade.</td> <td>50%</td> </tr> <tr> <td>2nd Assessment: Personal Development Planning Report (PDP) (2,500-3,000 words) Grading of the PDP report takes the Internship Provider evaluation into account.</td> <td>50%</td> </tr> </table> <p>Formative:</p> <table border="1"> <tr> <td>Activities Report – Individual (includes daily journal and brief weekly report)</td> <td>0%</td> </tr> <tr> <td>Presentation of Internship Experience and Reflective Paper (individual)</td> <td>0%</td> </tr> </table> <p>Finally, the HM 4041 Health Policy and Governance assesses students via a written project and a final examination, as follows:</p> <p>Summative:</p> <table border="1"> <tr> <td>Written Project (Written Project) 2,000 - 2,200 words</td> <td>40%</td> </tr> <tr> <td>Final Examination (essay-type questions)</td> <td>60%</td> </tr> </table> <p>Formative:</p> <table border="1"> <tr> <td>Cases, tests, coursework preparation</td> <td>0%</td> </tr> </table>			1 st Assessment: Reflective Paper (2,500-3,000 words). A reflection on the internship experience, including an oral presentation to faculty and fellow students. Oral presentation counts 10% of the 1 st assessment grade.	50%	2 nd Assessment: Personal Development Planning Report (PDP) (2,500-3,000 words) Grading of the PDP report takes the Internship Provider evaluation into account.	50%	Activities Report – Individual (includes daily journal and brief weekly report)	0%	Presentation of Internship Experience and Reflective Paper (individual)	0%	Written Project (Written Project) 2,000 - 2,200 words	40%	Final Examination (essay-type questions)	60%	Cases, tests, coursework preparation	0%
1 st Assessment: Reflective Paper (2,500-3,000 words). A reflection on the internship experience, including an oral presentation to faculty and fellow students. Oral presentation counts 10% of the 1 st assessment grade.	50%															
2 nd Assessment: Personal Development Planning Report (PDP) (2,500-3,000 words) Grading of the PDP report takes the Internship Provider evaluation into account.	50%															
Activities Report – Individual (includes daily journal and brief weekly report)	0%															
Presentation of Internship Experience and Reflective Paper (individual)	0%															
Written Project (Written Project) 2,000 - 2,200 words	40%															
Final Examination (essay-type questions)	60%															
Cases, tests, coursework preparation	0%															

	<p>Both the teaching and assessment strategies used in these modules ensure that students gain knowledge in specialized fields of biomedical and health sciences.</p>

3B. Cognitive skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p><i>Upon completion of the BMS programme, students will be able to:</i></p> <p>B1. Use and correctly apply knowledge and understanding of biomedical concepts, principles and theories to problem solving.</p>	<p>B1. <u>Where it is taught:</u> Level 5 and level 6 modules in which students are trained to problem-based learning in biomedical sciences. BI 32XX Cell and Molecular Biology L5 BI 32XX Human Anatomy and Physiology L5 BI 3204 Human Genetics L5 BI 3215 Environmental Health L5 BI 3232 Cellular and Molecular Neurobiology L5 BI 32XX Microbiology and Infectious Diseases CH32XX Organic Chemistry L5 CH 33XX Organic and Biological Chemistry L5</p> <p>BMS 45XX Research Methods in Biomedical Sciences L6 BMS 46XX Capstone in Biomedical Sciences L6 BMS 4XXX Topics in Pathophysiology L6 BMS 4XXX Allergy and Immunity L6 BMS 4XXX Pharmacology in Health and Disease L6</p> <p>LEVEL 5</p> <ul style="list-style-type: none"> ➤ BI 32XX Cell and Molecular Biology (see A2) ➤ BI 32XX Human Anatomy and Physiology (see A2) ➤ BI 3204 Human Genetics (see A2) ➤ BI 3215 Environmental Health (see A2) ➤ BI 3232 Cellular and Molecular Neurobiology (see A2)

- **BI 32XX Microbiology and Infectious Diseases (see A2)**
- **CH 32XX Organic Chemistry (see A1)**
- **CH 32XX Organic and Biological Chemistry (see A1)**
- LEVEL 6**
- **BMS 45XX Research Methods in Biomedical Sciences (see A3)**
- **BMS 46XX Capstone in Biomedical Sciences (see A3)**
- **BMS 44XX Topics in Pathophysiology (see A5)**
- **BMS 44XX Allergy and Immunity (see A5)**
- **BMS 44XX Pharmacology in Health and Disease (see A2)**

Learning and Teaching Strategy (see also A1, A2, A3 and A5):

In congruence with the Learning and Teaching strategy of the College, the following tools are used in the above level 4 and 5 modules:

- Class lectures, interactive learning (class discussions, group work), exercises and practical problems solved in class. Active learning methods and a student-centered teaching approach are particularly encouraged.
- Throughout the lectures, students develop knowledge and understanding related to the subject by means of collaborative in-class case discussions and specialized video presentations, which reinforce students' cognitive and key transferable skills.
- Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class.
- Discussion and analysis of original data from primary research papers and other sources (especially in level 5 and level 6 modules).
- Discussion of scientific literature and of case studies (level 5 and 6 modules)
- Student projects and presentations.

	<ul style="list-style-type: none"> ➤ Use of a Blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources. ➤ A recent addition to the teaching and learning strategy at this level is the use of Blackboard online tools (discussion boards, journals, blogs, wikis, and surveys) that promote interactive learning outside the classroom. ➤ Use of textbook web site and online resources. ➤ Laboratory activities (laboratory practical work and reports). ➤ Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material. ➤ Instructors provide essential feedback on coursework (lab reports, presentations, essays, projects) that students can use to improve their learning performance. ➤ In the level 6 modules, master lectures by retired professors and other experts in the field are included. ➤ Tutorials of an interactive format to establish understanding of topic areas primarily through case studies and experimentally derived data. ➤ Use of online interactive tools (e.g. journal, blog or discussion board). Instructors will provide feedback and share project-specific material with each individual student through Blackboard. ➤ Capstone project will include independent research: literature review, collection of data and information, critical evaluation, analysis and synthesis. ➤ Presentations of student projects and discussion. Students are required to present orally (defend) their capstone project <p><u>Assessments methods:</u></p> <p>A combination of different assessment methods are used (see A1, A2, A3 and A5). From examinations and lab reports to projects and coursework portfolios including review of scientific literature, critical essays and case study analysis.</p> <p>B2.</p> <p><u>Where it is taught:</u></p>
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B2. Explain moral and ethical issues of investigations and the need for professional codes of conduct.

This learning outcome is taught in all modules that discuss moral and ethical issues in research as well as codes of professional conduct.

BI 1000 Introduction to Biology I L4
BI 1101 Introduction to Biology II L4

BI 32XX Cell and Molecular Biology L5
BI 32XX Human Anatomy and Physiology L5
BI 3204 Human Genetics L5
BI 3215 Environmental Health L5
BI 3232 Cellular and Molecular Neurobiology L5
BMS 34XX Human Nutrition L5
CH 32XX Organic Chemistry L5
CH 33XX Organic and Biological Chemistry L5

BMS 45XX Research Methods and ICT Tools in Biomedical Sciences L6
BMS 40XX Internship in Biomedical and health Sciences L6
BMS 46XX Capstone in Biomedical Sciences L6
BMS 44XX Environmental Burden in Neurodevelopment L6
BMS 44XX Topics in Pathophysiology L6
BMS 44XX Allergy and Immunity L6
BMS 44XX Pharmacology in Health and Disease L6
HM 4041 Health Policy and Governance L6

LEVEL 4

- **BI 1000 Introduction to Biology I (see A1)**
- **BI 1101 Introduction to Biology II (see A1)**

LEVEL 5

- **BI 32XX Cell and Molecular Biology (see A2)**
- **BI 32XX Anatomy and Physiology (see A2)**
- **BI 3204 Human Genetics (see A2)**
- **BI 3215 Environmental Health (see A2)**
- **BI 3232 Cellular and Molecular Neurobiology (see A2)**

- **BMS 34XX Human Nutrition (see A2)**
- **CH 32XX Organic Chemistry (see A1)**
- **CH 33XX Organic and Biological Chemistry (see A1)**

LEVEL 6

- **BMS 45XX Research Methods and ICT Tools in Biomedical Sciences (see A3)**
- **BMS 40XX Internship in Biomedical and Health Sciences (see A5)**
- **BMS 46XX Capstone in Biomedical Sciences (see A5)**
- **BMS 44XX Environmental Burden in Neurodevelopment (see A5)**
- **BMS 44XX Topics in Pathophysiology (see A5)**
- **BMS 44XX Allergy and Immunity (see A5)**
- **BMS 44XX Pharmacology in Health and Disease (see A5)**
- **HM 4041 Health Policy and Governance (see A5)**

Learning and Teaching Strategy (see also A1, A2 and A5):

The teaching and learning strategy described in A1, A2 and A5, consisting of lectures, class discussions, lab work, case study analysis, literature discussions and projects promotes critical reflection on ethical and moral issues related to biomedical research.

Additionally, the BMS 40XX Internship in Biomedical and health Sciences module teaches professional codes of conduct; students need to demonstrate their work ethic and are evaluated by the internship provider. Also, through the capstone module, students learn to conduct independent study on a topic and recognize moral and ethical issues in their research.

Assessments methods:

A combination of different assessment methods are used (see A1, A2 and A5). From examinations and lab reports to projects and coursework portfolios including review of scientific literature, critical essays and case study analysis. Teaching and assessment methods are designed to raise awareness of ethical and moral dimensions of scientific research.

B3. Use and analyze data and information concerning biomedical and health issues and critically evaluate their reliability, validity and significance.

B4. Synthesize and integrate several lines of subject-specific evidence towards a given purpose.

B3 and B4.

Where it is taught:

All level 5 and 6 modules with coursework components such as projects, lab reports, case study analysis, review of scientific articles

BI 32XX Cell and Molecular Biology L5

BI 32XX Human Anatomy and Physiology L5

BI 3204 Human Genetics L5

BI 3215 Environmental Health L5

BI 34XX Human Nutrition L5

BMS 32XX Microbiology and Infectious Diseases L5

CH 33XX Organic and Biological Chemistry L5

CH 33XX Organic and Biological Chemistry Lab L5

BMS 45XX Research Methods and ICT tools in Biomedical Sciences L6

BMS 46XX Capstone in Biomedical Sciences L6

BMS 40XX Internship in Biomedical and Health Sciences L6

BMS 44XX Environmental Burden in Neurodevelopment L6

BMS 44XX Pharmacology in Health and Disease L6

BMS 44XX Health Information Systems & Technology L6

HM 4041 Health Policy and Governance L6

BMS 44XX Topics in Pathophysiology L6

BMS 44XX Allergy and Immunity L6

Module descriptions are given under LOs A1-A5.

Learning and Teaching Strategy:

Teaching strategy is also discussed under LOs A1-A5. More specifically, at level 5 and 6, most modules include analysis of data and information as part of the learning and teaching strategy; primary sources such as scientific articles are discussed and analyzed and students are asked to write lab reports and projects on different topics. Some modules also include discussion of case studies as part of their learning and teaching strategies.

Assessments methods:

Assessment methods are also discussed under LOs A1-A5. More specifically these modules include:

- Coursework portfolios with different components (CH 33XX Organic and Biological Chemistry, BI 3204 Human Genetics, BMS 3XXX Human Nutrition, BMS 45XX Research Methods and ICT Tools in Biomedical Sciences; BMS 44XX Health Information Systems & Technology);
- Projects (BI 3215 Environmental Health, BI 33XX Organic and Biological Chemistry lab);
- Case study analysis (BMS 44XX Environmental Burden in Neurodevelopment, BMS 44XX Pharmacology in Health and Disease, BMS 44XX Topics in Pathophysiology, BMS 44XX Allergy and Immunity; BMS 46XX Capstone in Biomedical Sciences);
- Lab reports (BI 32XX Cell and Molecular Biology; BI 32XX Human Anatomy and Physiology; BI 33XX Organic and Biological Chemistry lab);
- Reflective essays, activities report and professional development plan (BMS 40XX Internship in Biomedical and Health Sciences)

All assessment strategies aim to assess students' ability to analyze data and information, evaluate and interpret them as well as synthesize and integrate them towards a given purpose.

3C. Practical and professional skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p><i>Upon completion of the BMS programme, students will be able to:</i></p> <p><i>C1. Plan and conduct practical or practice-based tasks related to biomedical and health sciences in a safe and ethical manner, and use appropriate laboratory equipment competently and safely.</i></p>	<p>C1.</p> <p><u>Where it is taught:</u> All modules with a lab component.</p> <p>BI 1000 Introduction to Biology I L4 BI 1101 Introduction to Biology II L4 CH 1002 Principles of Chemistry L4 CH 21XX General Chemistry L4 CH 33XX Organic and Biological Chemistry Lab L5</p> <p>BI 32XX Cell and Molecular Biology L5 BI 32XX Human Anatomy and Physiology L5 PY 33XX University Physics II L5</p> <p>BMS 45XX Research Methods and ICT Tools in Biomedical Sciences L6 BMS 46XX Capstone in Biomedical Sciences L6</p> <p>Module descriptions are given under LOs A1-A5.</p> <p><u>Learning and Teaching Strategy:</u> Learning and teaching strategy described under LOs A1-A5.</p> <p>These modules include a lab component, at which students acquire practical skills, learn to plan and conduct an experiment, as well as to handle laboratory equipment competently and safely. The capstone project may also include lab work.</p> <p><u>Assessments methods:</u> Assessment methods are described under LOs A1-A5.</p>

C2. Conduct basic or clinical research in a responsible, safe and ethical manner, considering risk assessment as well as health and safety regulations.

More particularly, all modules include either a lab report or a portfolio (BMS 45XX Research Methods and ICT Tools in Biomedical Sciences) or a final project paper based on experimental work (BMS 46XX Capstone in Biomedical Sciences). These assessments aim to assess the outcome of practical work conducted in the modules.

C2.

Where it is taught:

BMS 45XX Research Methods and ICT Tools in Biomedical Sciences L6
 BMS 40XX Internship in Biomedical and Health Sciences L6
 BMS 46XX Capstone in Biomedical Sciences L6

Module descriptions are given under LOs A3 and A5.

Learning and Teaching Strategy:

The above three modules provide important skills that prepare students for research and for professional careers in the biomedical science fields.

In the BMS 45XX Research Methods module, students are exposed to:

- Class lectures, lab and practical work, interactive learning (class discussions, group work) audio-visual presentations, model, databases, and other and practical problems solved in class.

In the BMS 46XX Capstone module teaching strategy includes:

- Independent research: literature review, collection of data and information, critical evaluation, analysis and synthesis.
- Presentations of student projects and discussion. Students are required to present orally (defend) their capstone project.
- They have regular meetings with their tutor at which they discuss progress in their work.

In the Internship module, students do work-based learning.

In all three modules, students make use of:

- Office hours: Students are encouraged to make full use of the office hours of their instructor, where they can where they can ask questions and

C3. Select and apply a range of methods, including ICTs, to study and address biomedical and health problems.

discuss work-based learning issues.

- a Blackboard site, where instructors can post course material and resources such as notes, readings, assignment instructions, timely announcements and useful web links; also interact with the instructor via online Blackboard tools such as journals.
- Library facilities: Students are encouraged to make use of the library facilities for their papers.

Assessment Methods:

The assessment methods for the three modules have been described in A3, A4 and A5. BMS 45XX Research Methods and ICT Tools in Biomedical Sciences and BMS 46XX Capstone in Biomedical Sciences teach students to do research in a safe and ethical manner, while through the BMS 40XX Internship in Biomedical and Health Sciences module they learn how to work and behave in a professional environment (clinical setting or pharmaceutical company).

C3.

Where it is taught:

All modules with a lab component or teaching the use of ICT Tools:

BI 1000 Introduction to Biology I L4
 BI 1101 Introduction to Biology II L4
 CH 1002 Principles of Chemistry L4
 CH 21XX General Chemistry L4

CH 3XXX Organic and Biological Chemistry Lab L5
 BI 32XX Cell and Molecular Biology L5
 BI 32XX Anatomy and Physiology L5

BMS 45XX Research Methods and ICT Tools in Biomedical Sciences L6
 BMS 46XX Capstone in Biomedical Sciences L6
 BMS 43XX Health Information Systems and Technology L6

<p><i>C4. Use writing and reporting skills related to biomedical scientific literature with appropriate referencing, as well as plan, conduct and present an independent project.</i></p>	<p>The module descriptions have been provided in LOs A1-A5.</p> <p><u>Learning and Teaching Strategy:</u></p> <p>It has been described in LOs A1-A5. A characteristic of the above modules is that most of them include a lab component at which students get trained to methods of biomedical analysis, including the use of ICT tools. So they need to do labs in biology, chemistry, organic biological chemistry, anatomy and physiology, cell and molecular biology; and to learn to use ICT tools in Biomedical Sciences and in Health Information Systems and Technology.</p> <p><u>Assessment methods:</u></p> <p>Assessment methods have been described in A1-A5. They include lab reports and written examinations (level 4 and level 5), coursework portfolios including literature reviews and data analysis products, as well as research projects (level 6).</p> <p>C4.</p> <p><u>Where it is taught:</u></p> <p>All level 5 and 6 modules with a project as an assessment.</p> <p>BI 3204 Human Genetics L5 BI 3215 Environmental Health L5 CH 33XX Organic and Biological Chemistry L5 BMS 34XX Human Nutrition L5 BMS 32XX Microbiology and Infectious Diseases L5</p> <p>BMS 46XX Capstone in Biomedical Sciences L6 BMS 45XX Research Methods and ICT Tools in Biomedical Sciences L6 BMS 40XX Internship in Biomedical and Health Sciences L6 BMS 44XX Topics in Pathophysiology L6 BMS 44XX Allergy and Immunity L6</p>
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	<p>BMS 44XX Pharmacology in Health and Disease L6 BMS 44XX Environmental Burden in Neurodevelopment L6 BMS 43XX Health Information Systems and Technology L6 HM 4041 Healthcare Policy and Governance L6</p> <p>The module descriptions have been provided in LOs A1-A5.</p> <p><u>Learning and Teaching Strategy:</u></p> <p>It has been described in LOs A1-A5. A characteristic of the above modules is that they all include a project or case study analysis at which, thus students learn to conduct a literature search on a topic, plan and conduct a project, write a project report with appropriate referencing and present it orally in some cases. In this way they get trained to scientific writing in the biomedical sciences field.</p> <p><u>Assessment methods:</u></p> <p>Assessment methods have been described in A1-A5. Apart from examinations, they include projects, critical reflections on scientific literature, as well as case study analysis.</p>
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3D. Key/transferable skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p><i>Upon completion of the BMS programme, students will be able to:</i></p> <p><i>D1. Locate, record, process and analyze data and information from a variety of sources, using appropriate qualitative and quantitative methods, including the use of statistics, spreadsheets and programs for presenting data visually.</i></p>	<p>D1 and D2.</p> <p><u>Where it is taught:</u> These skills are attained progressively in modules of all levels. In level 4 natural science modules, students learn to acquire and process data in the laboratory. In level 5 and 6, they conduct projects.</p> <p>CH 1002 Principles of Chemistry L4</p>

D2. Communicate scientific information accurately and effectively in written, oral, visual and numerical formats in a style that suits the purpose and the audience, as well as produce detailed and coherent project reports

CH 21XX General Chemistry L4
 PY 22XX University Physics I L4
 MA 22XX Calculus I L4

BI 32XX Cell and Molecular Biology L5
 BI 32XX Human Anatomy and Physiology L5
 BI 3204 Human Genetics L5
 BI 3215 Environmental Health L5
 BMS 34XX Human Nutrition L5
 BMS 32XX Microbiology and Infectious Diseases L5
 CH 33XX Organic and Biological Chemistry L5
 CH 33XX Organic and Biological Chemistry Lab L5
 PY 33XX University Physics II

BMS 46XX Capstone in Biomedical Sciences L6
 BMS 45XX Research Methods and ICT Tools in Biomedical Sciences L6
 BMS 40XX Internship in Biomedical and Health Sciences L6
 BMS 44XX Topics in Pathophysiology L6
 BI 44XX Allergy and Immunity L6
 BMS 44XX Pharmacology in Health and Disease L6
 BMS 44XX Environmental Burden in Neurodevelopment L6
 BMS 43XX Health Information Systems and Technology L6
 HM 4041 Healthcare Policy and Governance L6

Module descriptions have been provided under LOs A1-A5.

Learning and Teaching Strategy:

Learning and teaching strategy has been described under LOs A1-A5.

Assessments methods:

D3. Collaborate as a member of a team and demonstrate that essential skill in personal and professional development.

Described under LOs A1-A5. All modules include some scientific writing, either in the form of lab report or project or critical reflection on a scientific article or case study analysis, which is followed by a paper and, in some cases, an oral presentation. Students need to make use of mathematics, statistics and ICT tools to process and analyze data.

D3.

Where it is taught:

These skills are attained in all level 4 natural science modules with laboratory, as lab and field activities involve teamwork and in some level 5 and level 6 modules where students work in teams in their projects. It should be noted, however, that, as most instructors aim to foster student-student interaction, they may also include activities (in-class or online) that involve collaborative learning (e.g. in-class discussion, online discussion boards and blogs, group presentations), even though these are not always assessed.

At level 4, lab activities, include group work.

BI 1000 Introduction to Biology I L4

BI 1101 Introduction to Biology II L4

CH 1002 Principles of Chemistry L4

CH 21XX General Chemistry L4

PY 22XX University Physics I L4

At level 5

BI 32XX Cell and Molecular Biology L5

BI 3204 Human Genetics L5

BI 32XX Human Anatomy and Physiology L5

CH 33XX Organic and Biological Chemistry Lab L5

PY 33XX University Physics II L5

BMS 45XX Research Methods and ICT Tools in Biomedical Sciences L6

D4. Engage in independent study and self-evaluation.

BMS 40XX Internship in Biomedical and Health Sciences L6
 BMS 44XX Topics in Pathophysiology L6
 BMS 44XX Allergy and Immunity L6
 BMS 44XX Pharmacology in Health and Disease L6

Learning and Teaching Strategy:

Learning and teaching strategy has been described under LOs A1-A5.

Assessments Methods:

Described under LOs A1-A5. In level 4 modules, students work as groups but are assessed individually. Level 5 Organic and Biological Chemistry Lab uses a group project for assessment. Several other level 5 and 6 modules also use group work in student projects.

D4.

Where it is taught:

Students take a) BMS 45XX Research Methods and ICT Tools in Biomedical Sciences in which they design and plan their capstone project, with minimum guidance and within agreed guidelines and b) BMS 46XX Capstone in Biomedical Sciences L6 (level 6 modules) in which they develop the ability to plan and conduct a research project with minimum guidance (autonomy in work). In the capstone module, they make use of feedback, challenge received opinion and reflect on action (self-evaluation). In the Internship module, they also engage in self-evaluation as they are asked to write a reflective paper on the internship experience.

BMS 45XX Research Methods and ICT Tools in Biomedical Sciences L6
 BMS 46XX Capstone in Biomedical Sciences L6
 BMS 40XX Internship in Biomedical and Health Sciences L6

Module descriptions provided under LOs A3, A4 and A5.

	<p><u>Learning and Teaching Strategy:</u> As described under LOs A3-A5.</p> <p><u>Assessment Methods:</u> As described under LOs A3-A5.</p>
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**[Please insert here title(s) of exit award(s) at Level 4, if applicable]
Certificate in Higher Education**

**[Please insert here title(s) of exit award(s) at Level 5, if applicable]
Diploma in Higher Education – Biomedical Sciences**

**[Please insert here title of exit awards(s) at Level 6]
BSc in Biomedical Sciences
BSc (Hons) in Biomedical Sciences**

4. Distinctive features of the programme structure

- Where applicable, this section provides details on distinctive features such as:
- where in the structure above a professional/placement year fits in and how it may affect progression
- any restrictions regarding the availability of elective modules where in the programme structure students must make a choice of pathway/route

- It leads to the awarding of two degrees:
 - A US BSc degree accredited by the US NECHE (New England Commission of Higher Education), and
 - A UK BSc (Honors) validated by the UK Open University (OU).
- It fully prepares students to enter US medical schools and graduate programs in health related fields.
- It introduces students to medical school modules beyond the pre-med requirements.
- It prepares graduates to work in the pharmaceutical industry, in biomedical research, in diagnostic services, and in the design and execution of clinical trials.
- It offers opportunities for practical and professional experience through research and internships.
- It offers flexibility to focus on different aspects of biomedical sciences.
- It allows students to personalize their studies and follow different career pathways in combination with minors such as Healthcare Management, Environmental Studies, Communication and Information Technology.
- It offers students the unique opportunity to be mentored by high-caliber academics and professionals in the fields of biomedical and health sciences.
- It provides a student-centered learning environment that promotes the academic and personal development, broadens horizons, and builds confidence to become independent learners.
- It collaborates with the Institute of Public Health and the Center of Excellence for Sustainability (Office of Public Affairs), as well as the ACG Health and Wellness Center (Student Affairs Office).
- It exposes students to state-of-the art facilities and a unique campus environment.

5. Support for students and their learning

All new students participate in an orientation programme as they begin their first semester at the College. The orientation program is designed to introduce them to the campus, the academic system, College regulations and policies, and student life.

Student Success Center (SSC)

The Student Success Centre supports students by offering comprehensive, integrated services in the areas of academic advising, OU validation issues, student records, registration, and

payments in a one-stop area. The Centre is committed to providing students with consistent, high-quality service, both in person and through technology. The Student Success Centre aims to create the optimum conditions so that students can follow the path to academic success.

Students may visit the Student Success Centre to pay a bill, request a certificate, obtain a form, arrange to bring a visitor on campus, obtain their transcript, see an academic advisor, ask about OU validation, change a course, and obtain or replace their student ID.

The SSC web page has been set up to reflect the one-stop concept of the Centre and includes information from different departments. It may be accessed from the “Quick Links” on the ACG homepage (www.acg.edu) and it allows students to print forms or view the academic calendar, academic policies, final exams schedule, course schedule, graduation instructions, major requirements, frequently asked questions (FAQs), the e-mail directory, and financial aid and international student information. From the SSC web page students may choose to log on to the myACG portal, where they can print their personal course schedule and their unofficial transcript. To log on, students need to go to the SSC and get their PIN, which is private, should not be shared with anyone, and will be given to the students only if they have no obligations (business office, library, or academic advising).

Academic Advising

All students are assigned an academic advisor responsible for assisting them in gaining the greatest benefit from their educational experience at the College. Good academic advising is a vital part of the learning process and an integral part of the basic teaching function of the College. Effective academic advising provides specific aid to students in considering and completing academic programs, but it goes beyond mere course scheduling; it includes planning, decision-making, implementation, and evaluation of academic, personal, and career-related matters, and exploration. The College assigns all entering freshmen a First-Year advisor from the Office of Academic Advising. Thereafter, the advising programme is faculty-based and fosters personal contact between students and faculty. Department Heads and Programme Coordinators act as educational consultants.

New incoming students and continuing Deree-ACG students are required to consult every semester and during the announced advising period with an advisor at the Office of Academic Advising.

Advisors never make decisions for students. Their overriding objective is to assist students in developing the maturity required to make their own choices and to be responsible for the consequences of those choices.

Student Academic Support Services (SASS)

Student Academic Support Services (SASS) provides support to the learning of Deree students at the undergraduate and graduate level through a variety of approaches encouraging participatory learning. SASS learning facilitators recognize that individual qualities and efforts vary; therefore, facilitators adopt a learner-centred approach without undue interference in order to promote individual development and to respond to the needs of each student. The goal of SASS is to help students become insightful readers, effective critical thinkers, and independent learners.

Student Academic Support Services offers two major types of academic support:

1. One-on-one Sessions, conducted on a one-on-one basis between a facilitator and a student. They are provided on a first-come-first-served basis and cover a wide range of college skills.

2. Group Sessions are of two kinds, both designed to emphasize direct interaction between participants:
 - a. Academic-skills workshops are offered on demand. They may focus on sharpening a quantitative or qualitative skill for a course or help participants sharpen conversational skills in a foreign language.
 - b. Study-skills workshops are offered regularly. They are designed to help participants improve a particular study skill, such as note-taking or exam preparation.

Disability and Learning Differences

The College Committee on Disability and Learning Differences monitors and recommends policies and procedures to benefit individuals with disabilities and learning differences. In addition, it makes recommendations in consultation with relevant academic departments/ areas regarding special assessments to be given by tutors to specific students with disability and/or learning differences.

The Committee proposes alternative assessment methods for specific students with disability and/or learning differences in consultation with relevant academic departments/ areas to ensure appropriateness of assessment method. The Committee is obliged to follow the advice of the department with regard to appropriateness and communicate with the Registrar about this. The Committee on Disability and Learning Differences submits the list of OU students with disabilities and learning difficulties and their approved alternative assessment methods to the OU Validation Office and Registrar.

6. Criteria for admission

The Admissions Process

To qualify for admission to the academic programs of the College, applicants must demonstrate that they possess the appropriate qualifications to enable them to be successful in the program of their choice. To this end, applicants must meet the following requirements:

The standard minimum entry requirement for the major's programme is the following: 14/20 in the Greek system, an overall average grade of C in the US system, or 24 and above in the International Baccalaureate or the equivalent of any other educational grading system. Applicants whose grades are between 11/20-13.99/20 or its equivalent, may be admitted to the College on a provisional basis.

Students admitted on a provisional basis will be required to fulfil the following conditions in order to be allowed to continue on their selected major after the completion of one academic year after their acceptance to Deree:

- Meet with an assigned advisor at the Academic Advising Office at least twice every month or whenever the advisor thinks it is necessary. The assigned advisor will monitor the student progress very closely and may require that they seek academic help through the Student Academic Support Services.
- The number of modules students will be allowed to register for will be determined by their English language placement (see section "English Language Requirements"). However, in no case will they be allowed to register for a total of more than 2 modules if placed in EAP 1002 or for more than 4 modules if placed in WP 1010. Students with provisional status who are placed in

EAP 999, EAP 1000, EAP 1001 must first complete their English for Academic Purpose modules before they begin taking College level modules along with EAP 1002.

- Students who have successfully completed only the EAP sequence during their first academic year will be able to continue.
- Achieve a minimum cumulative average (CI) of at least 2.0 after one academic year.
- After the completion of one academic year on provisional status, students' performance will be reviewed by the Committee on Academic Standards and Policies (CASP), which will decide on student progression and/or new conditions.
- Students on provisional status are subject to the College probation policy (see section "Academic Probation").

The following is required for all freshmen applicants:

1. A completed application form.
2. A letter of recommendation from an academic teacher or professor.
3. An official secondary school transcript and an official copy of a secondary diploma, both legally certified.
4. A certified copy of their identity card for Greek citizens or a valid passport for non-Greek citizens.
5. An interview with an admissions counsellor.
6. Evidence of proficiency in English.

Evidence of Proficiency in English

All applicants must demonstrate proficiency in the English language either by taking the College's English Placement Test (EPT) or by submitting any evidence derived from one of the following tests:

Pearson test of Academic English (PTE Academic): 58 or greater
Michigan State University Certificate of Language Proficiency (MSU-CELP)
Michigan Proficiency Certificate
Cambridge Proficiency Certificate
Cambridge Advanced English (CAE) with Grade A only
International Baccalaureate Certificate*
International Baccalaureate Diploma
IELTS: (academic) 6.5 or above
SAT: 450 or above
ACT: 18 or above
TOEFL (paper based): 567 or above
TOEFL (computer based): 227 or above
TOEFL (internet based): 87 or above
GCE higher level English: Grade C or greater
Oxford Online Placement Test: 99 or above

* With grade 4 and above in the English higher level subject or at least an average of 12 in the higher level subjects.

Applicants presenting a TOEFL score should arrange to have the test results sent directly to the Office of Admissions by the Educational Testing Service (ETS). The College's Institution Code Number is 0925. TOEFL scores are valid for 2 years.

Students may also qualify to take WP 1010 by submitting evidence of fluency based on graduation from an English speaking secondary school or programme.

The above listed grades qualify the student for placement directly into WP 1010. Applicants who do not qualify for WP 1010 but who otherwise show academic promise may be admitted

conditionally and placed in the English for Academic Purposes Program (see section “English Language Requirements”).

7. Language of study

English Language

8. Information about non-OU standard assessment regulations (including PSRB requirements)

9. Methods for evaluating and improving the quality and standards of teaching and learning.

Deree faculty comprises of experienced professionals active in their respective fields through their research, publications, think-tank work and other forms of professional engagement. Significant body of research has been garnered by Deree faculty in the fields of learning innovation and pedagogy. Recognizing the need of a structured holistic approach to teaching and learning, over the past years, Deree has been implementing a variety of initiatives aimed at boosting the faculty’s teaching excellence geared toward maintaining high standards and their comparability across sections, modules, and schools. An important component of this strategy was driven by the recognition that new members of the faculty have to be socialized with the sophisticated, induced with best standard emulated by the OU, Deree teaching culture.

During the academic year 2017-18, a wide range of activities took place aiming to raising staff awareness with regards to the College’s emphasis on pedagogy and research. Lectures, workshops, and seminars were organized by the College and were well-attended by the staff of all departments/areas.

Recognizing the importance of pedagogy and research, the College has established the Deree Teaching and Learning Center, which organizes workshops on current pedagogy, informs faculty about relevant opportunities abroad and seeks external funding for such purposes among other things. It also assists departments with planning and monitoring implementation of

a series of events (e.g. lectures, workshops, symposia, round-table discussions, colloquia, retreats) every semester.

A variety of teaching, learning and assessment resources will be used that include:

- web-based materials
- hands-on practical work
- virtual and augmented reality solutions
- computer-aided learning packages
- online forums
- directed reading
- formative assessments
- summative assessments
- self-assessment questions

Interdisciplinary-Problem-based learning
Utilizing expertise from
Bioethics
Bioinformatics
Drug interactions
Internships
Media
Pharmaceutical companies
Simulations
ICTs

10. Changes made to the programme since last (re)validation

N/A



Annexe 1: Curriculum map

Annexe 2: Notes on completing the OU programme specification template

Annexe 1 - Curriculum map

This table indicates which study units assume responsibility for delivering (shaded) and assessing (☐) particular programme learning outcomes.

Level	Study module/unit	A 1	A 2	A 3	A 4	A 5	B 1	B 2	B 3	B 4	C 1	C 2	C 3	C 4	D 1	D 2	D 3	D 4
4	BI 1000 Introduction to Biology I	☐	☐	☐				☐			☐		☐				☐	
	BI 1101 Introduction to Biology II	☐	☐	☐				☐			☐		☐				☐	
	CH 1002 Principles of Chemistry	☐		☐							☐		☐		☐	☐	☐	
	CH 21XX General Chemistry	☐		☐							☐		☐		☐	☐	☐	
	PY 22XX University Physics I	☐		☐							☐				☐	☐	☐	
	MA 22XX Calculus I				☐													

Level	Study module/unit	A 1	A 2	A 3	A 4	A 5	B 1	B 2	B 3	B4	C 1	C 2	C3	C 4	D 1	D 2	D 3	D 4
5	PY 33XX University Physics II	☐		☐							☐				☐	☐	☐	
	CH 32XX Organic Chemistry	☐					☐	☐										
	CH 33XX Organic and Biological Chemistry	☐	☐				☐	☐	☐	☐				☐	☐	☐		
	CH 33XX Organic and Biological Chemistry Lab	☐	☐	☐					☐	☐	☐		☐		☐	☐	☐	
	BI 32XX Cell and Molecular Biology		☐	☐			☐	☐	☐	☐	☐		☐		☐	☐	☐	
	BI 32XX Human Anatomy and Physiology		☐	☐			☐	☐	☐	☐	☐		☐		☐	☐	☐	
	BMS 32XX Microbiology and Infectious Diseases		☐				☐		☐	☐				☐	☐	☐		
	One of the following modules																	
	BI 3232 Cellular and Molecular Neurobiology		☐				☐	☐										
	BI 3204 Human Genetics		☐				☐	☐	☐	☐				☐	☐	☐	☐	
BI 3215 Environmental Health		☐				☐	☐	☐	☐				☐	☐	☐			
BMS 34XX Human Nutrition		☐					☐	☐	☐				☐	☐	☐			

Level	Study module/unit	A 1	A 2	A3	A4	A5	B 1	B2	B3	B 4	C1	C2	C3	C4	D1	D2	D3	D4
6	BMS 45XX Research Methods and ICT Tools in Biomedical Sciences (Lab course)			☐	☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	BMS 46XX Capstone in Biomedical Sciences			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐
	6 modules out of the following																	
	BMS 40XX Internship in Biomedical and Health Sciences					☐			☐	☐		☐		☐	☐	☐	☐	☐
	BMS 44XX Environmental Burden in Neurodevelopment		☐			☐		☐	☐	☐				☐	☐	☐		
	BMS 44XX Pharmacology in Health and Disease					☐	☐	☐	☐	☐				☐	☐	☐	☐	
	BMS 43XX Health Information Systems & Technology			☐	☐				☐	☐			☐	☐	☐	☐		
	BMS 44XX Topics in Pathophysiology					☐	☐	☐	☐	☐				☐	☐	☐	☐	
	BMS 44XX Allergy and Immunity		☐			☐	☐	☐	☐	☐				☐	☐	☐	☐	
	HM 4041 Health Policy and Governance					☐		☐	☐	☐				☐	☐	☐		

Annexe 2: Notes on completing programme specification templates

- 1 - This programme specification should be mapped against the learning outcomes detailed in module specifications.
- 2 – The expectations regarding student achievement and attributes described by the learning outcome in section 3 must be appropriate to the level of the award within the **QAA frameworks for HE qualifications**: <http://www.qaa.ac.uk/AssuringStandardsAndQuality/Pages/default.aspx>
- 3 – Learning outcomes must also reflect the detailed statements of graduate attributes set out in **QAA subject benchmark statements** that are relevant to the programme/award: <http://www.qaa.ac.uk/AssuringStandardsAndQuality/subject-guidance/Pages/Subject-benchmark-statements.aspx>
- 4 – In section 3, the learning and teaching methods deployed should enable the achievement of the full range of intended learning outcomes. Similarly, the choice of assessment methods in section 3 should enable students to demonstrate the achievement of related learning outcomes. Overall, assessment should cover the full range of learning outcomes.
- 5 - Where the programme contains validated **exit awards** (e.g. CertHE, DipHE, PGDip), learning outcomes must be clearly specified for each award.
- 6 - For programmes with distinctive study **routes or pathways** the specific rationale and learning outcomes for each route must be provided.
- 7 – Validated programmes delivered in **languages other than English** must have programme specifications both in English and the language of delivery.