Programme specification

(Notes on how to complete this template are provided in Annexe 3)

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	October 2019
Next revalidation	
Credit points for the award	BSc (Honours) – Biomedical Sciences: 375
UCAS Code	
HECoS Code	
LDCS Code (FE Colleges)	
Programme start date and cycle of starts if appropriate.	January 2020
Underpinning QAA subject benchmark(s)	Biomedical Sciences
Other external and internal reference points used to inform programme outcomes. For apprenticeships, the standard or framework against which it will be delivered.	None
Professional/statutory recognition	
For apprenticeships fully or partially integrated Assessment.	
Mode(s) of Study (PT, FT, DL, Mix of DL & Face-to-Face) Apprenticeship	
Duration of the programme for each mode of study	FT-3 years
Dual accreditation (if applicable)	NECHE Accredited

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.**

Date of production/revision of this specification	January 2024

2. Programme overview

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 programme also aims to develop an understanding of ethical issues in the biomedical sciences, and to create informed and responsible citizens and professionals.

Aims

The programme 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-centred 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, analysing 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 analyse 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 analyse 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
	Presentation Skills or Professional Communication or equivalent	3
	Information Technology Fundamentals or Introduction to Programming 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 (with a Lab)/STEM 4
The total LE credits therefore for the BMS program are 44.

Plus, the three courses in Social 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 3010 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

A. **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.

B. **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.

C. **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.

D. **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.

E. **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.

F. **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.

G. **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.
N/A

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

(The structure for any part-time delivery should be presented separately in this section.)

Programme Structure - LEVEL 4					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is module compensatable?**	**Semester runs in**
	120				
BI 1000 Introduction to Biology I	20				
BI 1101 Introduction to Biology II	20				
MA 2130 Calculus I	15				
CH 21XX Organic Chemistry	15				
CH 2015 General Chemistry	20				
PY 2225 University Physics I	20				
BI 22XX Cell Biology	10				

Intended learning outcomes at Level 4 are listed below:

Learning Outcomes – LEVEL 4

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. A2. human physiology, neurobiology, microbiology as well as genetic, metabolic, developmental, cellular and molecular processes. A3. appropriate methods for acquiring, analysing and interpreting scientific data and information. 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, analyse and interpret information related to biomedical and health sciences.	<u>Learning and Teaching Strategy:</u> In congruence with the Learning and Teaching strategy of the College, the following tools are used in L4 courses: ➢ Class lectures, interactive learning (class discussions, group work), exercises and practical problems solved in class. Active learning methods and a student-centred 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. ➢ 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. <u>Assessment Methods:</u>

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
	1. In class midterm and final written exams 2. Coursework portfolios 3. Lab exams and reports The midterm and final exams consist of a combination of multiple choice, short answers, problems and essay questions. The 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 them to demonstrate knowledge, understanding and a certain level of critical thinking. Lab exams and lab reports examine the lab component of these modules. Lab 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 aim to improve students' scientific writing, problem solving and critical scientific thinking skills.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
Upon completion of the BMS programme, students will be able to: B1. Use and correctly apply knowledge and understanding of biomedical concepts, principles and theories to problem solving. . B2. Use, analyze and critically evaluate the reliability, validity and significance of scientific data and information.	<u>Learning and Teaching Strategy:</u> Learning and teaching methods are described above (section 3A). In addition, practice questions and tutorial sessions allow students meet the LO described in this section. <u>Assessment Methods:</u> Assessment methods are described above (section 3A).

3B. Cognitive skills	
	Written exams include several questions that involve critical thinking and problem solving.

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
Upon completion of the BMS programme, students will be able to: 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. C3. Select and apply a range of methods, including ICTs, to study and address biomedical and health problems. C4. Use writing and reporting skills related to biomedical scientific literature with appropriate referencing, as well as plan, conduct and present an independent project.	<u>Learning and Teaching Strategy:</u> Learning and teaching strategy described above (section 3A). Most of the L4 modules include a lab component, at which students acquire practical skills, apply different methods, learn to plan and conduct an experiment, as well as to handle laboratory equipment competently and safely. Students also learn to write lab reports using scientific literature. <u>Assessments methods</u>: Assessment methods are described above (section 3A). In addition to what has been described above, all L4 modules include either a lab report or a portfolio. These components aim to assess the outcome of practical work conducted in the modules.

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
Upon completion of the BMS programme, students will be able to: 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. 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.	Learning and Teaching Strategy: Learning and teaching strategy described above (section 3A). Most of the L4 modules include a lab component, where students learn to locate, record and analyse scientific data, often using mathematics and statistics. Students are taught how to prepare and present a scientific project or theme in written form. Assessments methods: Assessment methods are described above (section 3A). Specific L4 modules include lab reports as part of their assessment. Students often need to make use of mathematics and statistics to prepare their reports.

[Please insert here title(s) of exit award(s) at Level 4, if applicable]

Programme Structure - LEVEL 5					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is module compensatable?**	**Semester runs in**
	115	**One of the following modules**	**15**		
PY 3330 University Physics II	20	BI 3232 Cellular and Molecular Neurobiology			
CH 32XX Organic and Medicinal Chemistry	15	BI 3204 Human Genetics			
BI 34XX Biochemistry	15	BI 3215 Environmental Health			
CH 3330 Organic Chemistry Lab	10	BMS 3325 Human Nutrition			
BI 33XX Molecular Biology	20				
BI 3240 Human Anatomy and Physiology	20				
BMS 3220 Microbiology and Infectious Diseases	15				

Intended learning outcomes at Level 5 are listed below:

Learning Outcomes – LEVEL 5	
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. A2. human physiology, neurobiology, microbiology as well as genetic, metabolic, developmental, cellular and molecular processes. A3. appropriate methods for acquiring, analysing and interpreting scientific data and information. 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, analyse and interpret information related to biomedical and health sciences. A5. advanced topics in biomedical sciences, such as pharmacology, pathophysiology, immunology, health management, nutrition and the effects of environmental agents on human health and development.	Learning and Teaching Strategy: In congruence with the Learning and Teaching strategy of the College, the following tools are used in L5 courses: ➢ Class lectures, interactive learning (class discussions, group work), exercises and practical problems solved in class. Active learning methods and a student-centred teaching approach are particularly encouraged. ➢ Throughout the lectures, students develop knowledge and understanding related to the subject by means of collaborative in-class case

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
	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. ➢ 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. ➢ Presentation and in-class discussion of student projects. ➢ Interpretation and analysis of primary data from research papers. ➢ Students are introduced to more advanced concepts in the field of biomedical sciences. <u>Assessment Methods:</u> 1. In class midterm and final written exams 2. Coursework portfolios 3. Lab exams and reports 4. Written reports and essays 5. Oral presentation of projects

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
	The midterm and final exams consist of a combination of multiple choice, short answers, problems and essay questions. 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 them to demonstrate knowledge, understanding and a certain level of critical thinking. Lab exams and lab reports examine the lab component of these modules. Lab 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 aim to improve students' scientific writing, problem solving and critical scientific thinking skills.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
Upon completion of the BMS programme, students will be able to: B1. Use and correctly apply knowledge and understanding of biomedical concepts, principles and theories to problem solving. B2. Use, analyze and critically evaluate the reliability, validity and significance of scientific data and information. B3. Explain moral and ethical issues and understand the need for professional codes of conduct.	<u>Learning and Teaching Strategy:</u> Learning and teaching strategy is described above (section 3A of L5 and 3B of L4 courses). In addition, students are exposed to the concepts of bioethics and scientific misconduct in courses such as Human Genetics and Environmental Health. Students also learn how to analyse data and integrate information to produce scientific reports. <u>Assessments methods</u>: Assessment methods are described above (section 3A of L5 and 3B of L4 courses).

3B. Cognitive skills	
B4. Synthesize and integrate several lines of subject-specific evidence towards a given purpose.	Written essays and presentations cover mainly LOs B2 and B4, as students learn to comprehend, analyse and integrate scientific knowledge. The timely and independent preparation of lab reports and essays require the adaptation of moral, ethical and professional values.

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
Upon completion of the BMS programme, students will be able to: 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. C3. Select and apply a range of methods, including ICTs, to study and address biomedical and health problems. C4. Use writing and reporting skills related to biomedical scientific literature with appropriate referencing, as well as plan, conduct and present an independent project.	Learning and Teaching Strategy: Learning and teaching strategy is described above (section 3A of L5 and 3C of L4 courses). Assessments methods: Assessment methods are described above (section 3A of L5 and 3C of L4 courses).

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
Upon completion of the BMS programme, students will be able to: 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. 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. D3. Collaborate as a member of a team and demonstrate that essential skill in personal and professional development.	Learning and Teaching Strategy: Learning and teaching strategy is described above (section 3A of L5 and 3D of L4 courses). Students are taught how to prepare and present a scientific project or theme orally and in written form. They also participate in team projects. Assessments methods: Assessment methods are described above (section 3A of L5 and 3D of L4 courses). Several L5 courses include an oral presentation as an assessment, where students learn to communicate their work. Moreover, the lab reports in the Organic and Biological Chemistry lab course are products of team work.

[Please insert here title(s) of exit award(s) at Level 5, if applicable]

Programme Structure - LEVEL 6					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is module compensatable?**	**Semester runs in**
BMS 4645 Research Methods and ICT tools in Biomedical Sciences	**80** 15 15	**3 modules out of the following** BMS 4055 Internship in Biomedical and Health Sciences BMS 4515 Environmental Burden in	**45** 15		

Programme Structure - LEVEL 6					
BMS 4510 Allergy and Immunity BMS 4540 Topics in Pathophysiology BMS 4535 Pharmacology in Health and Disease BMS 4750 Capstone in Biomedical Sciences	15 15 20	Neurodevelopment BMS 4330 Health Information Systems & Technology HM 4041 Health Policy and Governance	15 15 15		

Intended learning outcomes at Level 6 are listed below:

Learning Outcomes – LEVEL 6	
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. A2. human physiology, neurobiology, microbiology as well as genetic, metabolic, developmental, cellular and molecular processes.	Learning and Teaching Strategy: In congruence with the Learning and Teaching strategy of the College, the following tools are used in L6 courses: ➢ Class lectures, interactive learning (class discussions, group work), exercises and practical problems solved in class. Active learning methods and a student-centred teaching approach are particularly encouraged. ➢ Throughout the lectures, students develop knowledge and understanding related to the subject by means of collaborative in-class case

Learning Outcomes – LEVEL 6	
3A. Knowledge and understanding	
A3. appropriate methods for acquiring, analysing and interpreting scientific data and information. 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, analyse and interpret information related to biomedical and health sciences. A5. advanced topics in biomedical sciences, such as pharmacology, pathophysiology, immunology, health management, nutrition and the effects of environmental agents on human health and development.	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. ➢ 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. ➢ Presentation and in-class discussion of student projects ➢ Interpretation and analysis of primary data from research papers. ➢ Master classes by experts in the corresponding field <u>Assessment Methods:</u> 1. In class midterm and final written exams 2. Coursework portfolios 3. Written reports and essays 4. Oral presentation of projects

Learning Outcomes – LEVEL 6	
3A. Knowledge and understanding	
	The midterm and final exams consist of a combination of multiple choice, short answers, problems and essay questions. 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 them to demonstrate knowledge, understanding and a certain level of critical thinking. In several L6 courses, final exams include the analysis of case studies. The coursework portfolios aim to improve students' scientific writing, problem solving and critical scientific thinking skills.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
Upon completion of the BMS programme, students will be able to: B1. Use and correctly apply knowledge and understanding of biomedical concepts, principles and theories to problem solving. B2. Use, analyze and critically evaluate the reliability, validity and significance of scientific data and information. B3. Explain moral and ethical issues and understand the need for professional codes of conduct. B4. Synthesize and integrate several lines of subject-specific evidence towards a given purpose.	Learning and Teaching Strategy: Learning and teaching strategy is described above (section 3A of L6 courses and 3B of L4 and L5 courses). LO B4 is mainly covered by the capstone project (BMS 4650), where students conduct independent research (lab-based or literature-review) with guidance from a faculty member. Assessments methods: Assessment methods are described above (section 3A of L6 courses and 3B of L4 and L5 courses) Students are required to prepare a thesis of their capstone project, as well as present it orally.

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
Upon completion of the BMS programme, students will be able to: 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. C2. Conduct research in a responsible, safe and ethical manner, considering risk assessment as well as health and safety regulations. C3. Select and apply a range of methods, including ICTs, to study and address biomedical and health problems. C4. Use writing and reporting skills related to biomedical scientific literature with appropriate referencing, as well as plan, conduct and present an independent project.	<u>Learning and Teaching Strategy:</u> Learning and teaching strategy described above (section 3A of L6 courses and 3C of L4 and L5 courses). LOs C2 and C3 is covered in the Research Methods course (BMS 4545), the Health Informatics course (BMS 4330), as well as the capstone project, where students learn to analyse and present data, using computer, ICT and statistical tools. LO C4 is mainly covered by the execution of the capstone project. <u>Assessments methods</u>: Assessment methods are described above (section 3A of L6 courses and 3C of L4 and L5 courses). These LOs are examined mainly by the capstone thesis and presentation.

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
Upon completion of the BMS programme, students will be able to: D1. Locate, record, process and analyse 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. 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. D3. Collaborate as a member of a team and demonstrate that essential skill in personal and professional development. D4. Engage in independent study and self-evaluation.	<u>Learning and Teaching Strategy:</u> Learning and teaching strategy described above (section 3A of L6 courses and 3C of L4 and L5 courses). LO D4 is mainly covered by the capstone project and the BMS internship (BMS 4330), where experts guide students through a specific field of study and teach them how to perform independent studies. <u>Assessments methods</u>: Assessment methods are described above (section 3A of L6 courses and 3C of L4 and L5 courses). Students learn to evaluate themselves throughout the internship course and the capstone project, where they get continuous feedback from their supervisor.

Exit awards at Level 6:

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

4. Distinctive features of the programme structure

- **Where applicable, this section provides details on distinctive featurs 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
- **Additional considerations for apprenticeships:**
  - how the delivery of the academic award fits in with the wider apprenticeship
  - the integration of the 'on the job' and 'off the job' training
  - how the academic award fits within the assessment of the apprenticeship

- 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-calibre academics and professionals in the fields of biomedical and health sciences.
- It provides a student-centred 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, as well as the ACG Health and Wellness Center.
- It exposes students to state-of-the art facilities and a unique campus environment.

5. Support for students and their learning

(For apprenticeships this should include details of how student learning is supported in the workplace)

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

(For apprenticeships this should include details of how the criteria will be used with employers who will be recruiting apprentices.)

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)

N/A

9. For apprenticeships in England End Point Assessment (EPA)

(Summary of the approved assessment plan and how the academic award fits within this and the EPA)

N/A

10. 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 material
- hands-on practical work

- 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

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

No significant changes have been made to the program since its initial validation. Proposed changes are presented in detail in the background document.

Annexe 1: Curriculum map

Annexe 2: Curriculum mapping against the apprenticeship standard or framework (delete if not required.)

Annexe 3: 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	Programme outcomes																														
		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7
4	BI 1000 Introduction to Biology I	√	√	√						√								√		√						√						
	BI 1101 Introduction to Biology II	√	√	√						√								√		√						√						
	CH 2015 General Chemistry	√		√							√							√		√	√					√	√					
	CH 21XX Organic Chemistry	√		√																												
	PY 2225 University Physics I	√		√							√							√		√	√					√	√					
	MA 2130 Calculus I				√																					√						
	BI 22XX Cell Biology	√	√							√																						

Level	Study module/unit	Programme outcomes																														
		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7
5	PY 2330 University Physics II	√		√	√													√		√	√					√	√	√				

	CH 32XX Organic and Medicinal Chemistry	√				√				√	√																				
	BI 34XX Biochemistry	√	√							√	√																√				
	CH 3330 Organic Chemistry Lab	√	√	√						√								√		√	√					√	√	√			
	BI 33XX Molecular Biology		√	√						√	√	√						√		√	√					√	√	√			
	BI 3240 Human Anatomy and Physiology		√	√						√	√							√		√	√					√	√	√			
	BMS 3220 Microbiology and Infectious Diseases		√								√		√													√	√				
	One of the following modules																														
	BI 3232 Cellular and Molecular Neurobiology		√							√	√																				
	BI 3204 Human Genetics		√							√	√	√	√													√	√	√			
	BI 3215 Environmental Health		√			√					√	√	√														√				
	BMS 3325 Human Nutrition		√			√					√		√													√	√				

Level	Study module/unit	Programme outcomes																													
		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7
6	BMS 4645 Research Methods and ICT Tools in Biomedical Sciences (Lab course)	√		√	√					√	√	√	√					√	√	√	√					√	√	√	√			
	BMS 4510 Allergy and Immunity		√			√				√	√	√	√								√					√	√	√	√			
	BMS 4540 Topics in Pathophysiology					√				√	√	√	√								√					√	√	√	√			
	BMS 4535 Pharmacology in Health and Disease					√				√	√	√	√								√					√	√	√	√			

	BMS 4750 Capstone in Biomedical Sciences			√	√	√				√	√	√	√					√	√	√	√					√	√		√			
	3 modules out of the following																															
	BMS 4055 Internship in Biomedical and Health Sciences					√						√	√						√		√					√	√	√	√			
	BMS 4515 Environmental Burden in Neurodevelopment		√			√					√	√	√								√					√						
	BMS 4330 Health Information Systems & Technology			√	√							√	√							√	√					√						
	HM 4041 Health Policy and Governance					√					√	√	√								√					√						

Annexe 2 - Curriculum mapping against the apprenticeship standard

This table indicates which study units assume responsibility for delivering (shaded) and assessing (✓) particular knowledge, skills and behavious.

Please ammend this mapping to suit Frameworks used within the different Nations if appropriate.

Level	Study module/unit	Apprenticeship standard																								
		K1	K2	K3	K4	K5	K6	K7	K8	S1	S2	S3	S4	S5	S6	S7	S8	B1	B2	B3	B4	B5	B6	B7	B8
4																										

Level	Study module/unit	Apprenticeship standard																								
		K1	K2	K3	K4	K5	K6	K7	K8	S1	S2	S3	S4	S5	S6	S7	S8	B1	B2	B3	B4	B5	B6	B7	B8
5																										

Level	Study module/unit	Apprenticeship standard																								
		K1	K2	K3	K4	K5	K6	K7	K8	S1	S2	S3	S4	S5	S6	S7	S8	B1	B2	B3	B4	B5	B6	B7	B8	
6																										

Annexe 3: 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.