

School of Biology

Important Degree Information:

B.Sc./M.A. Honours

The general requirements are 480 credits over a period of normally 4 years (and not more than 5 years) or part-time equivalent; the final two years being an approved Honours programme of 240 credits, of which 90 credits are at 4000-level and at least a further 120 credits at 3000- and/or 4000-levels. Refer to the appropriate Faculty regulations for lists of subjects recognised as qualifying towards either a B.Sc. or a M.A. degree.

B.Sc./M.A. Honours with Integrated Year Abroad

The general requirements are 540 credits over a period of normally 5 years (and not more than 6 years) or part-time equivalent; the final three years being an approved Honours programme of 300 credits, of which 60 credits are gained during the integrated year abroad, 90 credits are at 4000 level and at least a further 120 credits at 3000 and/or 4000 levels. Refer to the appropriate Faculty regulations for lists of subjects recognised as qualifying towards either a B.Sc. or M.A. degree.

Other Information: In the case of students who spend part of the Honours programme abroad on a recognised Exchange Scheme, the Programme Requirements will be amended to take into account courses taken while abroad. With the permission of the Director of Teaching up to 20 credits per programme may be taken in a module outwith the specified modules in the above Programmes. Entry to the Honours programme is at the discretion of the Director of Teaching, but is automatically granted for students gaining at least grade 11 in two of the prerequisite second year modules. Those who, at their first attempt, earn a minimum aggregate of 35 grade points from 2000-level Biology modules will also be considered for entry. Where there are choices between modules in the programmes that follow, some options may have pre-requisites so that choices may be limited by the Pre-honours modules taken. *The availability of 4000-level modules in the School of Biology will be dependent on sufficient student demand.*

Degree Programmes	Programme Requirements at:
(B.Sc. Honours): Behavioural Biology	<p>Single Honours Behavioural Biology Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: at least 60 credits including BL2102 and BL2105.</p> <p>Level 3: 130 credits comprising BL3000, BL3306, BL3307, BL3308, BL3319, BL3320; and two from BL3309, BL3313, BL3315, BL3316, BL3318.</p> <p>Level 4: BL4200 and FIVE other modules, OR BL4201 and FOUR other modules. Other modules to be chosen will be four or five from BL3400, BL4232, BL4234, BL4256, BL4258, BL4261, BL4280 - BL4285, BL4290; but may also include ONE of BL4291 - BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p>
(B.Sc. Honours): Biochemistry	<p>Single Honours Biochemistry Degree:</p> <p>Level 1: 40 credits comprising passes in (BL1001 and BL1201. BL1002 is also recommended for all students considering Honours Programmes in the School of Biology) or (BL1101 and BL1102).</p> <p>Level 2: At least 60 credits including BL2101 and BL2104.</p> <p>Level 3: 125 credits comprising BL3301, BL3302, BL3303, BL3310, BL3320; and two from BL3311, BL3312, BL3313.</p> <p>Level 4: BL4200, BL4210 and FOUR other modules, OR BL4201, BL4210 and THREE other modules. Other modules to be chosen will be three or four from BL4211 - BL4216, BL4221, BL4222, BL4223, BL4230 and BL4273; but may also include ONE of BL4219, BL4220, BL4255, BL4291- BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p>

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Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Biology</p>	<p>Single Honours Biology Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: At least 60 credits from 2000-level modules available in the School of Biology</p> <p>Level 3: 120-130 credits including BL3320, and then comprising a free choice of modules as approved by the Degree Controller & Director of Teaching. Students on this programme are expected to study across a wide range of sub-disciplines within Biology. BL3000 is required if BL3308 or BL3309 are taken.</p> <p>Level 4: BL4200 and FIVE other modules, OR BL4201 and FOUR other modules; the other modules comprising a free choice (including BL3400) as approved by the Degree Controller and Director of Teaching but may also include ONE of BL4291 - BL4293, ID4001.</p>
<p>(B.Sc. Honours): Biology and Economics</p>	<p>Biology element Joint Honours Biology and Economics Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: 60 credits including any two 2000-level BL modules with a grade 11 pass in each.</p> <p>Level 3: 65 credits from modules BL3301-BL3320; 20 credits will normally be taken in Semester 1 and 40 credits in Semester 2. BL3320 is compulsory for all students.</p> <p>BL3000 is required if BL3308 or BL3309 are taken.</p> <p>Level 4: 60 credits from any 4000-level BL modules (including BL3400), but may also include ONE of BL4291 - BL4293, ID4001.</p>
<p>(B.Sc. Honours): Biology and Psychology</p>	<p>Biology element Joint Honours Biology and Psychology Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: 60 credits including any two 2000-level BL modules with a grade 11 pass in each.</p> <p>Level 3: 40-65 credits from BL3000 level modules, which must include BL3320, as approved by the Degree Controller.</p> <p>Level 4: At least 45 credits comprising 4000-level BL modules as approved by the Degree Controller but may also include ONE of BL4291 - BL4293, ID4001.</p> <p>Note: The total Honours credits in Biology and Psychology must equal or exceed 240, and must include a project in either School (PS4050 or BL4200).</p>

Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Biology with French</p>	<p>Biology element of Major Degree with French:</p> <p>Level 1: At least 40 credits comprising passes in (BL1001 and BL1201) or (BL1101 and BL1102).</p> <p>Level 2: EITHER:</p> <p>60 credits comprising passes at grade 11 or better in two of BL2101, BL2102, BL2104 or BL2105; and 20 credits from SD1001 or ID2003 and ID2004</p> <p>OR</p> <p>90 credits comprising passes in three of BL2101, BL2102, BL2104 or BL2105, at least two of which are at grade 11 or better.</p> <p>Level 3: 95 credits from 3000-level BL modules and 30 credits comprising FR3001 and FR3002. BL3320 is compulsory for all students.</p> <p>Level 4: 90 credits comprising (BL4201 and two modules) OR (BL4200 and three modules) but may also include ONE of BL4291 - BL4293, ID4001 and 30 credits comprising FR4105 and FR4106.</p>
<p>(B.Sc. Honours): Biology with French With Integrated Year Abroad</p>	<p>Biology & French elements of Major Degree with French:</p> <p>Level 1: Biology Element: At least 40 credits comprising passes in (BL1001 and BL1201) or (BL1101 and BL1102).</p> <p>French Element: 40 credits comprising passes in FR1001 and FR1002.</p> <p>Level 2: Biology Element EITHER:</p> <p>60 credits comprising passes at grade 11 or better in two of BL2101, BL2102, BL2104 or BL2105; and 20 credits from SD1001 or ID2003 and ID2004</p> <p>OR</p> <p>90 credits comprising passes in three of BL2101, BL2102, BL2104 or BL2105, at least two of which are at grade 11 or better.</p> <p>French Element: 40 credits comprising a pass in FR2021 and a pass at grade 11 or better in FR2022.</p> <p>Year Abroad: 60 credits comprising FR3101</p> <p>Level 3: 95 credits from 3000-level BL modules and 30 credits comprising FR3001 and FR3002. BL3320 is compulsory for all students.</p> <p>Level 4: 90 credits comprising (BL4201 and two modules) OR (BL4200 and three modules) but may also include ONE of BL4291 - BL4293, ID4001 and 30 credits comprising FR4105 and FR4106.</p>

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Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours):</p> <p>Biology with German[^] or Spanish[^]</p> <p>[^]also available as 'with Integrated Year Abroad Degrees'</p> <p>Not available to entrants from 2008-09</p>	<p>Biology element of Major Degree with German or Spanish:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: 60 credits from the 2000-level modules available in the School of Biology.</p> <p>Levels 3 & 4: 185 credits from BL modules.</p> <p>BL3320 is compulsory for all students and BL3000 is required if BL3308 or BL3309 are taken.</p> <p>Typically at level 4000: BL4200 and 3 or 4 other 4000-level BL 15 credit modules, OR BL4201 and 2 or 3 other 4000-level BL 15 credit modules. Other modules to be chosen will be from the groups defined for a Single Honours Degree, subject to the permission of the Degree Controller and Director of Teaching.</p>
<p>(B.Sc. Honours):</p> <p>Psychology with Biology</p>	<p>Biology element of Minor Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: 60 credits from the 2000-level modules available in the School of Biology.</p> <p>Level 3: Up to 45 credits from 3000-level BL modules as approved by the Degree Controller. These may be taken in year 3 or 4. BL3320 is compulsory for all students.</p> <p>Level 4: At least 45 credits comprising 4000-level BL modules as approved by the Degree Controller.</p> <p>Note: The total Honours credits in Biology and Psychology must equal or exceed 240 and must include a project in either School (PS4050 or BL4200)</p>

Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours):</p> <p>Biomolecular Science (note admission to this degree is via the School of Chemistry)</p>	<p>Biomolecular Science (B.Sc. Honours):</p> <p>Level 1: Biology Element: 40 credits including passes in (BL1001 and BL1201) or (BL1101 and BL1102).</p> <p>Chemistry Element: 20 – 40 credits comprising pass or bypass for CH1001, pass in CH1004 or From 2008-08: 60 credits comprising passes in CH1401, CH1402 and CH1601.</p> <p>Level 2: 120 credits comprising passes at 11 or better in BL2101, BL2104, CH2501 and CH2601.</p> <p>Level 3: 125 credits comprising Biology Element: BL3301, BL3310, BL3312, BL3320 Chemistry Element: CH3611, CH3612, CH3613, CH3621, CH3432, CH3716.</p> <p>Level 4: 120 credits comprising:</p> <p>Biology element: BL4210 and THREE modules chosen from (BL4212, BL4213, BL4215, BL4216, BL4222, and BL4223)#.</p> <p>Chemistry element: CH4442 and TWO other modules chosen from CH4611, CH4612, CH4613, CH5611, CH5612, CH5613, CH5614, CH5616.</p> <p>(By special arrangement only, BL4201 may be taken instead of CH4442; but modules chosen from # must then be eliminated and five 10 credit CH modules taken.)</p> <p>Chemistry: Direct entry into Level 2 is possible, in which case 120 advanced standing credits at Level 1 are given.</p> <p>In the case of students who spend part of the Honours Programme abroad on a recognised Exchange Scheme, the Programme Requirements will be amended to take into account courses taken while abroad.</p> <p>Other Information: This course is recognised by the Royal Society of Chemistry (RSC) for professional membership.</p>
<p>(B.Sc. Honours):</p> <p>Cell Biology</p>	<p>Single Honours Cell Biology Degree:</p> <p>Level 1: 40 credits comprising passes in (BL1001 and BL1201) or (BL1101 and BL1102).</p> <p>Level 2: at least 60 credits including BL2101 and BL2104.</p> <p>Level 3: 125 credits comprising BL3301, BL3302, BL3303, BL3320; and three from BL3310, BL3311, BL3312, BL3313, BL3315.</p> <p>Level 4: BL4200 and FIVE other modules, OR BL4201 and FOUR other modules. Other modules to be chosen will be four or five from BL4210*, BL4211 - BL4221, BL4223, BL4230 - BL4234, BL4273; but may also include ONE of BL4291 - BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p> <p>*BL4210 should normally be taken by any student whose project supervisor is in the Biomedical Sciences Research Complex (BRSC).</p>

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Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Ecology & Conservation</p>	<p>Single Honours Ecology & Conservation Degree:</p> <p>Level 1: At least 40 credits comprising passes in [BL1201 and either BL1001 or BL1002 (BL1002 is recommended).] or [BL1101 and B11102].</p> <p>Level 2: at least 60 credits including (BL2102 or BL2103) and BL2105.</p> <p>Level 3: 130 credits including BL3000, BL3306, BL3307, BL3308, BL3309, BL3320; and two from BL3316, BL3318, BL3319.</p> <p>Level 4: BL4200 and FIVE other modules, OR BL4201 and FOUR other modules. Other modules to be chosen will be four or five from BL3400, BL4219 -BL4220, BL4249, BL4257 - BL4261, BL4265 - BL4270, BL4272 -BL4273, BL4282, BL4285; but may also include ONE of BL4291 - BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p>
<p>(B.Sc. Honours): Environmental Biology & Geography</p>	<p>Environmental Biology element of Geography Joint Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: 60 credits including BL2102 or BL2103; and BL2105.</p> <p>Level 3: 60-70 credits comprising any three of BL3306, BL3307, BL3308, BL3309, BL3316, BL3318, BL3319, BL3320.</p> <p>BL3320 is compulsory for all students.</p> <p>BL3000 is also required if BL3308 or BL3309 are taken.</p> <p>Level 4: Any four modules from BL3400, BL4219, BL4220, BL4260, BL4265 - BL4276; but may also include ONE of BL4291 - BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p>
<p>(B.Sc. Honours): Environmental Biology & Environmental Geoscience or Geoscience</p>	<p>Environmental Biology of Geoscience Joint Degrees:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: 60 credits including (BL2102 or BL2103); and BL2105</p> <p>Level 3: 45-85 credits taken from BL3000, BL3306, BL3307, BL3308, BL3309, BL3316, BL3318, BL3319, BL3320. BL3320 is compulsory for all students.</p> <p>Level 4: 45-75 credits taken from BL3400, BL4219, BL4220, BL4260, BL4261, BL4265 - BL4276; but may also include ONE of BL4291 - BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p> <p>Modules from Levels 3 and 4 should give a total of 240 credits comprising 105-135 from each School.</p>

Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours):</p> <p>Evolutionary Biology</p> <p>(for those entering the programme in 2009-10 or subsequently)</p>	<p>Single Honours Evolutionary Biology Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: At least 60 credits including (BL2102 or BL2103) and BL2105.</p> <p>Level 3: 120-130 credits comprising BL3307 and BL3320; and five from BL3302, BL3306, BL3308, BL3309, BL3313, BL3315, BL3316, BL3318, BL3319.</p> <p>BL3000 is also required if BL3308 or BL3309 are taken.</p> <p>Level 4: BL4200 and FIVE other modules, OR BL4201 and FOUR other modules. Other modules to be chosen will be four or five from BL3400, BL4219, BL4272 - BL4276, BL4280, BL4282, BL4284, BL4292; but may also include ONE of BL4291, BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p>
<p>(B.Sc. Honours):</p> <p>Human Biology</p> <p>(Not available to entrants after 2007-08)</p> <p>(these requirements have been amended for 2009-10 - students entering the programme before this time should consult the entry above or previous Catalogues)</p>	<p>Single Honours Human Biology Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: At least 60 credits including BL2101 and BL2106.</p> <p>Level 3: 125 credits from BL3301, BL3302, BL3303, BL3306, BL3310, BL3311, BL3312, BL3313, BL3315, BL3319, BL3320. BL3320 is compulsory for all students.</p> <p>Level 4: BL4200 and FIVE other modules, OR BL4201 and FOUR other modules. Other modules to be chosen will be two or three from BL4210*, BL4230 - BL4234, BL4238, BL4243 - BL4248, BL4259, BL4280; but may also include ONE of BL4291 - BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p> <p>*BL4210 should normally be taken by any whose project supervisor is in the Biomedical Sciences Research Complex (BRSC).</p>
<p>(B.Sc. Honours):</p> <p>Marine Biology</p>	<p>Single Honours Marine Biology Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: 120 credits from 2000-level Biology modules which must include BL2102 and BL2105.</p> <p>Level 3: 130 credits comprising BL3000, BL3306, BL3308, BL3318 and BL3320; and three from BL3307, BL3309, BL3313, BL3315, BL3316, BL3319.</p> <p>Level 4: BL4200 and FIVE other modules, OR BL4201 and FOUR other modules. Other modules to be chosen will be at least THREE from BL4249 - BL4261, but may also include ONE from BL4247, BL4248, BL4265 - BL4269, BL4273 -BL4274, BL4290, and ONE from BL4291-BL4293, ID4001. One 4000-level BL module not specified here, or BL3400, may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p>

Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Molecular Biology</p>	<p>Single Honours Molecular Biology Degree:</p> <p>Level 1: 40 credits including passes in (BL1001 and BL1201. BL1002 is also recommended for all students considering Honours Programmes in the School of Biology.) or (BL1101 or BL1102).</p> <p>Level 2: At least 60 credits including BL2101 and BL2104.</p> <p>Level 3: 125 credits comprising BL3301, BL3302, BL3303, BL3310, BL3311 and BL3320; and either BL3312 or BL3315.</p> <p>Level 4: BL4200, BL4210 and FOUR other modules, OR BL4201, BL4210 and THREE other modules. Other modules to be chosen will be three or four from BL4211 - BL4216, BL4221, BL4223 and BL4230; but may also include ONE of BL4219, BL4220, BL4255, BL4273, BL4291 - BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p>
<p>(B.Sc. Honours): Neuroscience (these requirements have been amended for 2009-10 - students entering the programme before this time should consult the entry above or previous Catalogues)</p>	<p>Single Honours Neuroscience Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102), and 40 credits comprising passes in PS1001 and PS1002. BL1002 is a recommended option to allow transfer to other Biology degrees.</p> <p>Level 2: 60 credits including BL2101 and at least one of BL2104 or BL2106, and 60 credits comprising passes in PS2001 and PS2002.</p> <p>Level 3: 45 credits from Biology modules comprising BL3303, BL3313 and BL3320 and 40 credits from Psychology modules comprising PS3035, PS3032 and, normally, PS3037 and PS3038. Modules not to exceed 125 credits for the whole year to be chosen from relevant Biology and Psychology modules.</p> <p>Level 4: BL4200 or BL4201 or PS4050. Up to 90 credits from relevant Biology and Psychology modules, that may include only one of BL4291 - BL4293 and ID4001. Students taking BL4200 will not be permitted to take PS4060.</p>
<p>(B.Sc. Honours): Physiology (Not available to entrants after 2007-08)</p>	<p>Single Honours Physiology Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: At least 60 credits including BL2101 and BL2106</p> <p>Level 3: 125 credits from BL3301, BL3302, BL3303, BL3306, BL3310, BL3311, BL3312, BL3313, BL3315, BL3318, BL3319, BL3320. BL3320 is compulsory for all students.</p> <p>Level 4: BL4200 and FIVE other modules, OR BL4201 and FOUR other modules. Other modules will be chosen from BL4210*, BL4230 - BL4234, BL4238, BL4243 - BL4248, BL4250, BL4273; but may also include ONE of BL4291 - BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p> <p>*BL4210 should normally be taken by any student whose project supervisor is in the Centre for Biomolecular Science.</p>

Degree Programmes	Programme Requirements at:
(B.Sc. Honours): Zoology	<p>Single Honours Zoology Degree:</p> <p>Level 1: At least 40 credits comprising passes in (BL1201 and either BL1001 or BL1002) or (BL1101 and BL1102).</p> <p>Level 2: At least 60 credits including BL2102 and BL2106.</p> <p>Level 3: 120-130 credits comprising passes in at least THREE of BL3306, BL3307, BL3313, BL3315, BL3316 or BL3319, BL3320. BL3320 is compulsory for all students.</p> <p>BL3000 is also required if BL3308 or BL3309 are taken.</p> <p>Level 4: BL4200 and FIVE other modules, OR BL4201 and FOUR other modules. Other modules to be chosen will be four or five from BL3400, BL4231 - BL4234, BL4247, BL4249, BL4250, BL4256 - BL4259, BL4261, BL4266 - BL4269, BL4273 - BL4276, BL4280 - BL4282, BL4284, BL4285, and BL4290; but may also include ONE of BL4291 - BL4293, ID4001. One 4000-level BL module not specified here may be taken as an alternative, with the permission of the Degree Controller and Director of Teaching.</p>

Students still completing degree programmes as defined in previous Course Catalogues should discuss their module selections with their Honours Adviser(s).

Modules

InterDisciplinary (ID) Modules

This School contributes to the following InterDisciplinary modules **SD1002 Sustainability: Ensuring our Common Future**, **SD2001 Sustainable Development: Ecological and Environmental Aspects** and **SD2002 Sustainable Development: Social and Economic Aspects (Section 22)**, **ID2003 Science Methods**, **ID2004 Science Ethics (Section 23)**

Biology (BL) Modules

BL1101 Biology I

Credits: 20 Semester: 1

Anti-Requisites: BL1001, BL1002, BL1201

Description: This module is an introduction to molecular and cellular biology. It covers cell diversity and the origins of life, cellular structures and fundamental processes. The central dogma of molecular biology is investigated through the examination of the structure and function of DNA, RNA and proteins, and how this knowledge led to modern developments in biotechnology. The final section of the module gives an introduction into molecular and population genetics with an emphasis on the process of evolution.

Throughout the module the lecture material is complemented by extensive practical classes where biological laboratory techniques are taught and practiced through, for example, microscopy, DNA isolation, dissection and thin layer chromatography.

Class Hour: 10.00 am

Teaching: Four lectures, one tutorial and one 3 hour laboratory.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

Re-Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

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BL1102 Biology II

Credits: 20 Semester: 2

Anti-Requisites: BL1001, BL1002, BL1201

Description: This module provides an introduction to the diversity of life on Earth and will address key elements of organismal and ecological aspects of life. The module is divided into several sections beginning with the classification of life and an introduction to the kingdoms Monera, Fungi and Protista. Photosynthesis, respiration and the evolution and diversity of plants will be studied. Students will then look at the diversity of animals in the sea and the movement of some groups onto land. The module will also provide an introduction to animal behaviour and developmental biology, before finishing off by introducing ecology and the various factors promoting and threatening biodiversity.

Throughout the module the lecture material is complemented by extensive practical classes introducing a variety of fieldwork and laboratory techniques.

Class Hour: 10.00 am

Teaching: Four lectures, one tutorial and one 3 hour laboratory.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

Re-Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

BL2101 Cell Structure and Function

Credits: 30 Semester: 1

Prerequisites: Students should normally have passed or been granted exemption from BL1001 (or BL1101 and BL1102).

Description: This is an introductory module covering general aspects of animal cell structure and associated physiology. The module starts with a general overview of the regulation of the cell cycle, the roles of protein complexes essential to cell shape and adhesion and the homeostatic role of ion pumps, transporters and channels in the maintenance of solute compositions in both the intra- and extra-cellular fluid compartments. The module continues with detailed structure-function relationships within cells from three major tissues – i) nerve cells and the mechanisms of generation and propagation of the action potential, ii) skeletal, cardiac and smooth muscle cells and mechanisms controlling contraction and finally iii) blood cells and O₂ transport, immune response, coagulation and cell signaling pathways.

Class Hour: 9.00 am

Teaching: Five lectures and one practical

PLUS one lecture per week and fortnightly tutorial in Skills for Biologists required for any student taking 2000-level Biology (optional times for these Skills classes will be available).

Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

Re-Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

BL2102 Zoology

Credits: 30 Semester: 1

Prerequisites: Students should normally have passed or been granted exemption from BL1001, BL1002 and BL1201 or (BL1101 and BL1102).

Description: Zoology is the study of animals, ranging from the simplest types of multicellular organisms such as sponges and jellyfish, through to humankind itself. The module surveys the animal kingdom, describing the key groups and the defining characteristics of their body plans and lifestyles, while putting this in an evolutionary context to reveal the patterns and trends in the kingdom as a whole. Special topics that are of fundamental importance to animals, such as animal communication, and the mechanisms of locomotion on land and in the sea and air, are considered in more detail. An extensive series of practical exercises reinforces and complements the lecture component of this module.

Class Hour: 11.00 am

Teaching: Five lectures and one practical

PLUS one lecture per week and fortnightly tutorial in Skills for Biologists required for any student taking 2000-level Biology (optional times for these Skills classes will be available).

Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

Re-Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

BL2104 Biochemistry & Molecular Biology

Credits: 30 Semester: 2

Prerequisites: Students should normally have passed or been granted exemption from BL1001 and BL1201 or (BL1101 and BL1102).

Description: This module builds on BL1201 Molecular Biology. The module will further develop the understanding and application of techniques, skills and concepts which are integral to the revolution which has occurred in the biological sciences in recent years. The module is essential underpinning for all branches of modern biology and biochemistry. The lectures include coursework on biological molecular architecture, cellular architecture, enzymes & metabolism, genomics and conclude with an introduction to the molecular basis of infection and immunity. The laboratory element will develop practical skills and the use of bioinformatics resources.

Class Hour: 9.00 am

Teaching: Five lectures and one practical

PLUS one lecture per week and fortnightly tutorial in Skills for Biologists required for any student taking 2000-level Biology (optional times for these Skills classes will be available).

Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

Re-Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

BL2105 Ecology & Evolution

Credits: 30 Semester: 2

Prerequisites: Students should normally have passed or been granted exemption from BL1001, BL1002 or (BL1101 and BL1102).

Description: Ecology and Evolution are central to our understanding of life on Earth and the relationships between all organisms and their biotic and abiotic environment. The principles of Ecology and Evolution have determined the variety and distribution of all organisms and will determine their future responses to global change. This module will introduce students to principles and patterns of Ecology, ranging from the global (for example, patterns of energy flow through ecosystems and the biogeography of organisms and communities) to the individual (competition between and within species) and the history and processes of Evolutionary Biology (Darwin, natural selection, population genetics, the evolution of sex and speciation).

Class Hour: 11.00 am

Teaching: Five lectures and one practical weekly.

Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

Re-Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

BL2106 Comparative Physiology

Credits: 30 Semester: 2

Prerequisites: Students should normally have passed or been granted exemption from BL1201 or (BL1101 and BL1102).

Description: This module covers the principles of physiological adaptation in a range of animals, including examples from all major taxa and from all habitats. Initial comparisons relating to scaling and design of animals will be followed by more specific units on: (A) Comparative principles of ionic and osmotic exchanges; water balance in aquatic and land animals, adaptations at skin, kidney, and respiratory surfaces. (B) Respiratory systems in water and on land, and associated circulatory mechanisms. (C) Principles of temperature balance; ectotherms and endotherms. (D) Feeding and digestive systems; food collection, ingestion, and absorption at different trophic levels; and waste disposal. (E) Sensory systems in different environments (especially visual, olfactory, auditory, and special senses). (F) Control systems using hormones and pheromones and (G) the immune system in a range of animals.

Class Hour: 12.00 noon

Teaching: Five lectures and one practical weekly and a fortnightly seminar.

PLUS one lecture per week and fortnightly tutorial in Skills for Biologists required for any student taking 2000-level Biology (optional times for these Skills classes will be available).

Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

Re-Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

The details of the Honours modules – that is 3000-level and 4000-level modules – which relate to the programmes listed in this section, are available in the Honours Course Catalogue.

