

## 2019 - BIOLOGY MAJORS, MINORS AND SPECIALISATIONS

EVOLUTION ECOLOGY AND ORGANISMAL BIOLOGY MAJOR	CELL AND MOLECULAR BIOLOGY MAJOR	HUMAN BIOLOGY MAJOR	BIOCHEMISTRY MAJOR (shared with RSC – no change)
<p><b>48 units must include:</b></p> <p><b>18 units from the following:</b>            BIOL1003 Biology 1: Evol, Ecol &amp; Genetics            BIOL1004 Biology 2: Mol &amp; Cell Biology            BIOL1009 Diversity of Life</p> <p><b>6 units from the following:</b>            BIOL2001 Intro to Quantitative Biology            BIOL2202 Exp Design &amp; Analysis in Biology            ENVS1003 Intro to Env &amp; Social Research            PSYC2009 Quantitative Methods in Psych            BIAN3014 Res Design &amp; Analysis in Biol Anth</p> <p><b>12 units from the following:</b>            BIOL2114 Evolution            BIOL2115 Comparative Physiology            BIOL2131 Ecology            BIOL2151 Genetics            BIOL2203 Field Studies in Functional Ecology</p> <p><b>6 units from the following:</b>            BIOL3125 Plants &amp; Global Climate Change            BIOL3206 <b>Macroevolution &amp; Macroecology</b>  <b>BIOL3303 Adv Field Studies in Functional Ecology</b>  <b>BIOL3109 Ecology &amp; Evolutionary Dev Biology</b></p> <p><b>6 units from the following:</b>            BIOL3191 Biology, Society &amp; Ethics            BIOL3201 Big Questions in Biology</p>	<p><b>48 units must include:</b></p> <p><b>24 units from the following:</b>            BIOL1003 Biology 1: Evol, Ecol &amp; Genetics            BIOL1004 Biology 2: Mol &amp; Cell Biology            BIOL2161 Genes: Replication &amp; Expression            BIOL2162 Molecular Gene Technology</p> <p><b>6 units from the following:</b>            BIOL2001 Intro to Quantitative Biology            BIOL2202 Exp Design &amp; Analysis in Biology            ENVS1003 Intro to Env &amp; Social Research            PSYC2009 Quantitative Methods in Psych            BIAN3014 Res Design &amp; Anal in Biol Anth</p> <p><b>6 units from the following:</b>            BIOL2117 Cell Biology            BIOL2142 General Microbiology            BIOL2151 Genetics            BIOL2171 Biochemistry &amp; Nutrition            BIOL2174 Cell Physiology in Health &amp; Disease</p> <p><b>6 units from the following:</b>            BIOL3107 Adv in Medical &amp; Plant Biochem            BIOL3108 Hallmarks of Cancer            BIOL3109 Ecol &amp; Evol Dev Biology            BIOL3141 Infection and Immunity            BIOL3142 Parasitology            BIOL3144 Adv &amp; Applied Immunology            BIOL3161 Genomics &amp; its Application            BIOL3177 Adv in Molecular Plant Science            BIOL3203 Histology &amp; Adv Microscopy            BIOL3204 Genetics of Human Disease 1            BIOL3205 Genetics of Human Disease 2            BIOL3208 Biology Research Project            BIOL3209 Biology Research Project (12u)            NEUR3101 Cellular Neuroscience</p> <p><b>6 units from the following:</b>            BIOL3191 Biology, Society &amp; Ethics            BIOL3201 Big Questions in Biology</p>	<p><b>48 units must include:</b></p> <p><b>24 units from the following:</b>            BIOL1003 Biology 1: Evol, Ecol &amp; Genetics            BIOL1004 Biology 2: Mol &amp; Cell Biology            BIOL2161 Genes: Replication &amp; Expression  <b>MEDN2001 Medical Physiology &amp; Pharmacology</b></p> <p><b>6 units from the following:</b>            BIOL2001 Intro to Quantitative Biology            BIOL2202 Exp Design &amp; Anal in Biology            ENVS1003 Intro to Env &amp; Social Research            PSYC2009 Quant Methods in Psych            BIAN3014 Res Design &amp; Anal in Biol Anth</p> <p><b>6 units from the following:</b>            BIOL2117 Cell Biology            BIOL2142 General Microbiology            BIOL2151 Genetics            BIOL2171 Biochemistry &amp; Nutrition            BIOL2174 Cell Physiol in Health &amp; Disease            BIOL2191 Ecology of Health and Disease            BIOL2222 Exquisite Corpse</p> <p><b>6 units from the following:</b>            BIOL3108 Hallmarks of Cancer            BIOL3141 Infection and Immunity            BIOL3142 Parasitology            BIOL3144 Advanced &amp; Applied Immunology            BIOL3186 Human Anatomy            BIOL3204 Genetics of Human Disease 1            BIOL3205 Genetics of Human Disease 2            BIOL3208 Biology Research Project            BIOL3209 Biology Research Project (12u)            NEUR3101 Cellular Neuroscience            NEUR3112 Systems Neuroscience            BIAN3113 Human Evolution            BIAN3124 Evolution of Human Behaviour            BIAN3125 Ancient Health &amp; Disease</p> <p><b>6 units from the following:</b>            BIOL3191 Biology, Society &amp; Ethics            BIOL3201 Big Questions in Biology</p>	<p><b>48 units must include:</b></p> <p><b>24 units from the following:</b>            BIOL1004 Biology 2: Mol &amp; Cell Biology            BIOL2171 Biochemistry &amp; Nutrition            CHEM1201 Chemistry I            CHEM2211 Chemical Biology 1</p> <p><b>6 units from the following:</b>            BIOL2161 Genes: Replication &amp; Expression            BIOL2162 Molecular Gene Technology            CHEM2208 Chemical Biology 2</p> <p><b>18 units from the following:</b>            BIOL3107 Adv in Medical &amp; Plant Biochemistry            BIOL3110 Stable Isotopes in Biogeochem, Environment, Medicine &amp; Authentication            BIOL3208 Biology Research Project            BIOL3209 Biology Research Project (12u)            CHEM3204 Structural Methods in Chem Biol            CHEM3207 Current Topics in Chem Biol            CHEM3060 Research Project in Chemistry</p>

EVOLUTION & ECOLOGY SPECIALISATION	NEUROSCIENCE & PHYSIOLOGY SPECIALISATION	BIOMEDICAL SCIENCE SPECIALISATION	GENETICS SPECIALISATION
<p><b>24 units from the following:</b>            BIOL3109 Ecol &amp; Evol Dev Biology            BIOL3113 Invertebrate Biology            BIOL3114 Vertebrates Biology            BIOL3116 Marine Conservation Ecology            BIOL3131 Evol &amp; Behavioural Ecology            BIOL3132 Field Studies in Behaviour Ecol            BIOL3142 Parasitology            BIOL3193 Bacteria &amp; Health: An Ecol &amp; Evol Perspective            BIOL3206 <b>Macroevolution &amp; Macroecology</b>            BIOL3208 Biology Research Project            BIOL3209 Biology Research Project (12u)            BIOL3210 Appreciating Parasites            BIOL3303 Adv Field Studies in Functional Ecology</p> <p><b>Co-requisite majors: Evolution, Ecology and Organismal Biology</b></p>	<p><b>24 units must include:</b></p> <p><b>6 units from the following:</b>            BIOL2174 Cell Physiology in Health &amp; Disease</p> <p><b>12 units from the following:</b>            NEUR3101 Cellular Neuroscience            NEUR3112 Systems Neuroscience  <b>MEDN2001 Medical Physiology &amp; Pharmacology</b></p> <p><b>6 units from the following:</b>            BIOL3186 Human Anatomy            BIOL3203 Adv Microscopy in BioSc            BIOL3208 Biology Research Project            PSYC3029 Cognitive &amp; Clinical Neuropsychology</p> <p><b>Co-requisite majors: Biochemistry or Cell and Molecular Biology or Human Biology or Psychology</b></p>	<p><b>24 units must include:</b></p> <p><b>6 units from the following:</b>            BIOL2117 Cell Biology            BIOL2142 General Microbiology            BIOL2151 Genetics            BIOL2171 Biochemistry &amp; Nutrition            BIOL2174 Cell Physiology in Health and Disease            BIOL2191 Ecology of Health and Disease            BIOL2222 Exquisite Corpse: Insight into the Human Body  <b>MEDN2001 Medical Physiology &amp; Pharmacology</b></p> <p><b>18 units from the following:</b>            BIOL3108 Hallmarks of Cancer            BIOL3141 Infection &amp; Immunity            BIOL3142 Parasitology            BIOL3144 Advanced &amp; Applied Immunology            BIOL3186 Human Anatomy            BIOL3203 Advanced Microscopy and Histology            BIOL3204 Genetics of Human Disease 1            BIOL3205 Genetics of Human Disease 2            BIOL3208 Biology Research Project            BIOL3209 Biology Research Project (12u)            NEUR3101 Cellular Neuroscience            NEUR3112 Systems Neuroscience</p> <p><b>Co-requisite majors: Cell and Molecular Biology or Human Biology or Biochemistry</b></p>	<p><b>24 units must include:</b></p> <p><b>6 units from the following:</b>            BIOL2151 Genetics            BIOL2161 Genes: Replication &amp; Expression</p> <p><b>18 units from the following:</b>            BIOL3108 Hallmarks of Cancer            BIOL3109 Ecol &amp; Evol Dev Biology            BIOL3157 Bioinformatics &amp; <b>It's Applications</b>            BIOL3161 Genomics &amp; Its Applications            BIOL3193 Bacteria &amp; Health: An Ecol &amp; Evol Perspective            BIOL3204 Genetics of Human Disease 1            BIOL3205 Genetics of Human Disease 2            BIOL3206 <b>Macroevolution &amp; Macroecology</b>            BIOL3208 Biology Research Project            BIOL3209 Biology Research Project (12u)</p> <p><b>Co-requisite majors: : Cell and Molecular Biology or Human Biology or Evolution, Ecology and Organismal Biology or Biochemistry</b></p>

MICROBIOLOGY & IMMUNOLOGY SPECIALISATION	PLANT SCIENCE SPECIALISATION	BIOCHEMISTRY SPECIALISATION (Shared with RSC )	BIOLOGY MINOR
<p><b>24 units must include:</b></p> <p><b>12 units from the following:</b> BIOL2142 General Microbiology BIOL3141 Infection &amp; Immunity</p> <p><b>12 units from the following:</b> BIOL3106 Biosecurity BIOL3142 Parasitology BIOL3144 Adv &amp; Applied Immunology BIOL3193 Bacteria &amp; Health: An Ecological and Evolutionary Perspective BIOL3208/3209 Biology Research Project</p> <p><b>Co-requisite majors: Cell and Molecular Biology or Human Biology or Evolution, Ecology and Organismal Biology or Biochemistry</b></p>	<p><b>24 units must include:</b></p> <p><b>6 units from the following:</b> BIOL2114 Evolution BIOL2115 Comparative Physiology BIOL2117 Cell Biology BIOL2131 Ecology BIOL2151 Genetics BIOL2161 Genes: Replication &amp; Expression BIOL2162 Molecular Gene Technology</p> <p><b>18 units from the following:</b> BIOL3106 Biosecurity BIOL3107 Advances in Medical &amp; Plant Biochemistry BIOL3109 Ecological &amp; Evolutionary Developmental Biology BIOL3002 Plants: Genes to Environment BIOL3125 Plants &amp; Global Climate Change BIOL3177 Adv in Molecular Plant Science BIOL3203 Adv Microscopy in Biosc BIOL3303 Adv Field Studies in Functional Ecology BIOL3208/3209 Biology Research Project BIOL3210 Appreciating Parasites</p> <p><b>Co-requisite majors: Biochemistry or Cell and Molecular Biology or Evolution, Ecology and Organismal Biology</b></p>	<p><b>24 units must include:</b></p> <p><b>12 units from the following:</b> BIOL2171 Biochemistry &amp; Nutrition CHEM2208 Protein Engineering &amp; Analysis</p> <p><b>12 units from the following:</b> BIOL3107 Adv in Medical &amp; Plant Biochem BIOL3208 or BIOL3209 Biology Research Project <b>BIOL3110 Stable isotopes in Biogeochemistry, environment, medicine and authentication</b> CHEM3201, CHEM3204, CHEM3207 or CHEM3060 Research Project (relevant to Biochem)</p> <p><b>Co-requisite majors: Cell and Molecular Biology or Chemistry or Human Biology</b></p>	<p><b>24 units must include:</b></p> <p><b>12 units from the following:</b> BIOL1003 Biology 1: Evol, Ecol &amp; Genetics BIOL1004 Biology 2: Mol &amp; Cell Biology BIOL1008 Human Biology BIOL1009 Diversity of Life</p> <p><b>12 units from the following:</b> 2000 or 3000 BIOL or NEUR course</p> <div data-bbox="1581 632 2076 703" style="background-color: #ADD8E6; text-align: center; padding: 5px;"><b>FOUNDATIONS OF MOLECULAR BIOLOGY MINOR</b></div> <p><b>24 units must include:</b></p> <p><b>12 units from the following:</b> BIOL1004 Biology 2: Mol &amp; Cell Biology CHEM1101 Chemistry 1</p> <p><b>12 units from the following:</b> BIOL2001 Intro to Quantitative Biology BIOL2202 Exp Design &amp; Analysis in Biology</p>

<b>HUMAN EVOLUTIONARY BIOLOGY MAJOR</b> <i>(shared with Arts)</i>	<b>HUMAN EVOLUTIONARY BIOLOGY MINOR</b> <i>(shared with Arts)</i>	<b>QUANTITATIVE BIOLOGY MAJOR</b> <i>(shared with Maths)</i>	<b>ADVANCED QUANTITATIVE BIOLOGY &amp; BIOINFORMATICS SPECIALISATION</b> <i>(Shared with Maths)</i>
<p><b>48 units must include:</b></p> <p><b>18 units from the following:</b>            BIAN1001 The Human Voyage: Introduction to Biological Anthropology            BIAN3113 Human Evolution            BIOL1003 Biology 1: Evol, Ecol &amp; Genetics</p> <p><b>6 units from the following:</b>            BIOL3131 Evol &amp; Behavioural Ecology            BIOL3186 Human Anatomy            BIOL3206 <b>Macroevolution &amp; Macroecology</b></p> <p><b>12 units from the following:</b>            BIAN2015 Human Skeletal Analysis            BIAN2119 Nutrition, Disease &amp; the Env            BIAN3124 Evolution &amp; Human Behaviour            BIAN3127 Primate Ecology &amp; Behaviour</p> <p><b>12 units from the following:</b>            BIAN2126 Primate Evolutionary Biology            BIAN2133 Mating &amp; Parenting: Evolutionary Ecology of Human Reproductive Strategies            BIAN3021 Primate Conservation Biology            BIAN3125 Ancient Health &amp; Disease            BIOL2131 Ecology            BIOL2191 Ecology of Health and Disease            BIOL2222 Exquisite Corpse – Insight into the Human Body            BIOL3204 Genetics of Human Disease 1            BIOL3205 Genetics of Human Disease 2</p>	<p><b>24 units must include:</b></p> <p><b>12 units from the following:</b>            BIAN1001 The Human Voyage: Introduction to Biological Anthropology            BIOL1003 Biology 1: Evol, Ecol &amp; Genetics</p> <p><b>6 units from the following:</b>            BIOL3131 Evol &amp; Behavioural Ecology            BIOL3186 Human Anatomy</p> <p><b>A minimum of 6 units from the following list:</b>            BIAN2119 Nutrition, Disease &amp; the Env            BIAN2131 Evolution of Parenting            BIAN3124 Evolution &amp; Human Behaviour            BIAN3125 Ancient Health &amp; Disease            BIAN3127 Primate Ecology &amp; Behaviour            BIOL2191 Ecology of Health and Disease            BIOL3131 Evolutionary &amp; Behavioural Ecology            BIOL3204 Genetics of Human Disease 1            BIOL3206 <b>Macroevolution &amp; Macroecology</b></p>	<p><b>48 units of the following compulsory courses:</b></p> <p><b>42 units from the following compulsory courses:</b>            BIOL1003 Biology 1: Evolution, Ecology and Genetics            BIOL2151 Genetics            BIOL3157 Bioinformatics &amp; <b>It's Applications</b>            MATH2307 Bioinformatics and Computational Biology            MATH3353 Advanced Mathematical Bioinformatics            MATH3511 Scientific Computing            STAT2001 Introductory Mathematical Statistics</p> <p><b>6 units from the following:</b>            MATH1013 Mathematics and Applications 1            MATH1115 Advanced Mathematics and Application 1</p>	<p><b>24 units must include:</b></p> <p>BIOL2202 Experimental Design &amp; Analysis  <b>BIOL3157 Bioinformatics &amp; Its Applications</b>            BIOL3161 Genomics &amp; Its Applications            BIOL3206 <b>Macroevolution &amp; Macroecology</b>            COMP3420 Advanced Databases and Data Mining            COMP3600 Algorithms            COMP3630 Theory of Computation            MATH2306 Applied Mathematics II            MATH3029 Probability Modelling with Applications            MATH3501 Scientific and Industrial Modelling            MATH3512 Matrix Computations            MATH3514 Numerical Optimisation            STAT2005 Introduction to Stochastic Processes            STAT3004 Stochastic Modelling            STAT3008 Applied Statistics            STAT3017 Big Data Statistics</p> <p><b>Co-requisite majors: Quantitative Biology Major</b></p>

