

## Selective subjects for B-BMED

<b>Year and Campus:</b>	2015								
<b>Coordinator:</b>	MDHS Student Centre								
<b>Contact:</b>	Level 1, Brownless Biomedical Library The University of Melbourne  Enquiries: Telephone: +61 3 834 45890 Email: <a href="mailto:sc-mdhs@unimelb.edu.au">sc-mdhs@unimelb.edu.au</a> (mailto:sc-mdhs@unimelb.edu.au)								
<b>Overview:</b>	The subjects listed below are available as selective subjects in the Bachelor of Biomedicine (B-BMED).								
<b>Learning Outcomes:</b>	Refer to the Bachelor of Biomedicine (B-BMED) course entry.								
<b>Structure &amp; Available Subjects:</b>	<p>Subjects are arranged under headings for identified discipline study areas. A subject is listed only once in this section. Refer to related headings for alternative locations of a subject's listing.</p> <p><b><u>Agricultural Science</u></b>  <b><u>Anatomy</u></b>  <b><u>Biochemistry and Molecular Biology</u></b>  <b><u>Biology (Level 1)</u></b>  <b><u>Biotechnology</u></b>  <b><u>Cell Biology</u></b>  <b><u>Chemistry</u></b>  <b><u>Computer Science and Software Engineering</u></b>  <b><u>Domestic Animal Science</u></b> (includes subjects leading to the Animal Science and Management major)  <b><u>Earth Sciences</u></b>  <b><u>Ecology</u></b>  <b><u>Engineering</u></b>  <b><u>Environments (Level 1)</u></b>  <b><u>Environmental Science</u></b>  <b><u>Food Science</u></b>  <b><u>Genetics</u></b>  <b><u>Geography</u></b>  <b><u>Geomatics</u></b>  <b><u>Informatics</u></b>  <b><u>Internship</u></b>  <b><u>Mathematics and Statistics</u></b>  <b><u>Microbiology and Immunology</u></b>  <b><u>Neuroscience</u></b>  <b><u>Pathology</u></b>  <b><u>Pharmacology</u></b>  <b><u>Physics</u></b>  <b><u>Physiology</u></b>  <b><u>Plant Science</u></b>  <b><u>Psychology</u></b>  <b><u>Research Project subjects</u></b>  <b><u>Science (General)</u></b>  <b><u>Science Informatics</u></b>  <b><u>Veterinary Science</u></b>  <b><u>Zoology</u></b></p>								
<b>Subject Options:</b>	<b>Agricultural Science</b> <table border="1" data-bbox="387 1937 1484 2076"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>AGRI20026 Plant Growth Processes</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table>			Subject	Study Period Commencement:	Credit Points:	AGRI20026 Plant Growth Processes	Semester 1	12.50
Subject	Study Period Commencement:	Credit Points:							
AGRI20026 Plant Growth Processes	Semester 1	12.50							

EVSC20002 Soil and Water Resources	Semester 2	12.50
AGRI30003 Agricultural Systems Analysis	Semester 2	12.50
AGRI30016 Irrigation and Water Management	June	12.50
AGRI30029 Ecology & Management of Grazing Systems	Semester 2	12.50
AGRI30030 Livestock Production Systems	Semester 1	12.50
AGRI30031 Crop Production and Management	Semester 2	12.50
AGRI30032 Plant Health and Improvement	Semester 1	12.50
BTCH30002 Trends & Issues in Agrifood Biotechnolog	Semester 1	12.50

### Anatomy

A number of Anatomy subjects are quota-restricted.

Subject	Study Period Commencement:	Credit Points:
ANAT30007 Human Locomotor Systems	Semester 1	12.50
ANAT30008 Viscera and Visceral Systems	Semester 2	12.50
CEDB30003 Developmental Biology	Semester 2	12.50

### Biochemistry and Molecular Biology

A number of Biochemistry and Molecular Biology subjects are quota-restricted.

Subject	Study Period Commencement:	Credit Points:
BCMB20003 Biochemical Regulation of Cell Function	Semester 2	12.50
BCMB20005 Techniques in Molecular Science	Semester 1, Semester 2	12.50
BCMB30001 Protein Structure and Function	Semester 2	12.50
BCMB30002 Functional Genomics and Bioinformatics	Semester 1	12.50
BCMB30003 Molecular Aspects of Cell Biology	Semester 1	12.50
BCMB30004 Cell Signalling and Neurochemistry	Semester 2	12.50
BCMB30010 Advanced Techniques in Molecular Science	Semester 1, Semester 2	12.50
BCMB30011 Metabolism and Nutrition	Semester 1	12.50

### Biology (Level 1)

Subject	Study Period Commencement:	Credit Points:
BIOL10001 Biology of Australian Flora & Fauna	Semester 2	12.50

### Biotechnology

Subject	Study Period Commencement:	Credit Points:
BTCH20002 Biotechnology	Semester 2	12.50
BTCH30001 Methods in Agrifood Biotechnology	Semester 1	12.50
BTCH30003 Biotechnology in Practice	Semester 1	12.50

**Cell Biology**

Subject	Study Period Commencement:	Credit Points:
CEDB30002 Concepts in Cell & Developmental Biology	Semester 1	12.50
CEDB30004 Stem Cells in Development & Regeneration	Semester 2	12.50

**Chemistry**

Subject	Study Period Commencement:	Credit Points:
CHEM20011 Environmental Chemistry	Semester 1	12.50
CHEM20018 Chemistry: Reactions and Synthesis	Semester 1	12.50
CHEM20019 Practical Chemistry 2	Semester 2	12.50
CHEM20020 Chemistry: Structure and Properties	Semester 2	12.50
CHEM30012 Analytical & Environmental Chemistry	Semester 2	12.50
CHEM30014 Specialised Topics in Chemistry B	Semester 2	12.50
CHEM30015 Advanced Practical Chemistry	Semester 1	12.50
CHEM30016 Reactivity and Mechanism	Semester 1	12.50
CHEM30017 Specialised Topics in Chemistry A	Semester 1	12.50

**Computer Science and Software Engineering**

Subject	Study Period Commencement:	Credit Points:
COMP10001 Foundations of Computing	Semester 1, Semester 2	12.50
COMP10002 Foundations of Algorithms	Semester 1, Semester 2	12.50
COMP20003 Algorithms and Data Structures	Semester 2	12.50
COMP20004 Discrete Structures	Not offered 2015	12.50
COMP20005 Engineering Computation	Semester 1, Semester 2	12.50
COMP20007 Design of Algorithms	Semester 1	12.50
SWEN20003 Object Oriented Software Development	Semester 2	12.50
COMP30016 Computer Science Project	Not offered 2015	12.50
COMP30017 Operating Systems and Network Services	Not offered 2015	12.50
COMP30018 Knowledge Technologies	Semester 1, Semester 2	12.50
COMP30019 Graphics and Interaction	Semester 2	12.50
COMP30020 Declarative Programming	Semester 2	12.50
COMP30021 Theoretical Computer Science	Not offered 2015	12.50
SWEN30006 Software Modelling and Design	Semester 1, Semester 2	12.50
SWEN30007 Software Systems Project	Not offered 2015	12.50

SWEN90006 Software Testing and Reliability	Semester 2	12.50
--	------------	-------

### Domestic Animal Science

Subject	Study Period Commencement:	Credit Points:
DASC20010 Applied Animal Physiology	Semester 2	12.50
DASC20011 Companion Animal Biology	Semester 1	12.50
DASC20012 Comparative Nutrition and Digestion	Semester 1	12.50
DASC20013 Topics in Animal Health	Semester 2	12.50
DASC30005 Applied Animal Behaviour	Semester 1	12.50
DASC30006 Applied Animal Reproduction & Genetics	Semester 1	12.50
DASC30013 Animal Systems Analysis	Semester 2	12.50
DASC30014 Animal Performance	Not offered 2015	12.50
DASC30015 Animal Welfare and Ethics	Semester 2	12.50

### Earth Sciences

Subject	Study Period Commencement:	Credit Points:
ERTH10001 The Global Environment	Semester 1	12.50
ERTH10002 Understanding Planet Earth	Semester 2	12.50
ATOC20001 Weather and Climate Systems	Semester 1	12.50
ATOC20002 Atmospheric Environment Processes	Not offered 2015	12.50
ERTH20001 Dangerous Earth	Semester 2	12.50
GEOL20001 Geology of Southeast Australia	February	12.50
GEOL20002 Structural and Metamorphic Geology	Semester 1	12.50
GEOL20003 Earth Composition, Minerals and Magmas	Semester 1	12.50
GEOL20004 Field Mapping and Sedimentary Geology	June	12.50
ATOC30003 Atmosphere Ocean Interaction	Semester 2	12.50
ATOC30004 Dynamical Meteorology and Oceanography	Semester 1	12.50
ATOC30005 Global Climates of the Past	Semester 1	12.50
ERTH30001 Hydrogeology/Environmental Geochemistry	Semester 1	12.50
GEOL30002 Tectonics & Geodynamics	Semester 1	12.50
GEOL30003 Sedimentary Geology	Semester 2	12.50
GEOL30004 Geochemistry & Petrogenesis	Semester 1	12.50
GEOL30005 Applied Geophysics	Semester 2	12.50
GEOL30007 Geobiology and Palaeobiology	Semester 1	12.50
GEOL30009 Advanced Field Geology	July	12.50

**Ecology**

Subject	Study Period Commencement:	Credit Points:
ECOL20003 Ecology	Semester 2	12.50
ECOL30005 Applied Ecology	Semester 2	12.50
ECOL30006 Ecology in Changing Environments	Semester 1	12.50
EVSC30006 Ecology of Urban Landscapes	Semester 1	12.50

**Engineering Systems**

Subject	Study Period Commencement:	Credit Points:
ENGR10003 Engineering Systems Design 2	Summer Term, Semester 2	12.50
ENGR10004 Engineering Systems Design 1	Semester 1, Semester 2	12.50
CHEN20007 Chemical Process Analysis 1	Semester 2	12.50
CHEN20008 Chemical Process Analysis 2	Semester 2	12.50
CHEN20009 Transport Processes	Semester 2	12.50
ELEN20005 Foundations of Electrical Networks	January, Semester 2	12.50
ENEN20002 Earth Processes for Engineering	Semester 2	12.50
ENGR20003 Engineering Materials	Semester 2	12.50
ENGR20004 Engineering Mechanics	Summer Term, Semester 1, Semester 2	12.50
BMEN30005 Introduction to Biomechanics	Semester 1	12.50
BMEN30006 Circuits and Systems	Semester 1	12.50
BMEN30007 Biotransport Processes	Semester 2	12.50
BMEN30008 Biosystems Design	Semester 2	12.50
CHEN30001 Reactor Engineering	Semester 1	12.50
CVEN30008 Engineering Risk Analysis	Semester 1	12.50
CVEN30009 Structural Theory and Design	Semester 2	12.50
ELEN30009 Electrical Network Analysis and Design	Semester 1	12.50
ELEN30010 Digital System Design	Semester 1	12.50
ELEN30011 Electrical Device Modelling	Semester 2	12.50
ELEN30012 Signals and Systems	Semester 2	12.50
ELEN30013 Electronic System Implementation	Semester 2	12.50
MCEN30016 Mechanical Dynamics	Semester 1	12.50
MCEN30017 Mechanics & Materials	Semester 1	12.50
MCEN30018 Thermodynamics and Fluid Mechanics	Semester 1, Semester 2	12.50

ENGR30002 Fluid Mechanics	Semester 1, Semester 2	12.50
BMEN20001 Biomechanical Physics & Computation	Semester 1	12.50

**Environments (Level1)**

Subject	Study Period Commencement:	Credit Points:
ENVS10001 Natural Environments	Semester 1, Semester 2	12.50
ENVS10006 Mapping Environments	Semester 1	12.50

**Environmental Science**

Subject	Study Period Commencement:	Credit Points:
EVSC20004 Blue Planet-Intro to Marine Environments	Semester 1	12.50
EVSC30002 Problem Solving in Environmental Science	Semester 2	12.50
EVSC30003 Environmental Risk Assessment	Semester 1	12.50

**Food Science**

Subject	Study Period Commencement:	Credit Points:
FOOD20003 Food Chemistry, Biology and Nutrition	Semester 1	12.50
FOOD20006 Food Microbiology and Safety	Semester 2	12.50
FOOD30007 Food Processing & Preservation	Semester 1	12.50
FOOD30008 Advanced Food Analysis	Semester 1	12.50
FOOD30009 Food Research & Development	Semester 2	12.50
FOOD30010 Functional Foods	Semester 2	12.50

**Genetics**

Subject	Study Period Commencement:	Credit Points:
GENE20001 Principles of Genetics	Semester 1	12.50
GENE20002 Genes and Genomes	Semester 2	12.50
GENE20003 Experiments in Genetics	Semester 2	12.50
GENE30001 Evolutionary Genetics and Genomics	Semester 1	12.50
GENE30002 Genes: Organisation and Function	Semester 1	12.50
GENE30004 Genetic Analysis	Semester 2	12.50
GENE30005 Human and Medical Genetics	Semester 2	12.50

**Geography**

Subject	Study Period Commencement:	Credit Points:
GEOG10001 Famine: The Geography of Scarcity	Semester 1	12.50

ENST20002 Environmental Change Field Class	Semester 2	12.50
GEOG20001 Society and Environments	Semester 1	12.50
GEOG20002 Understanding Global Landforms	Semester 1	12.50
GEOG20003 Environmental Politics and Management	Semester 1	12.50
GEOG20009 Landscapes and Diversity	Semester 2	12.50
GEOG30001 Coastal Landforms & Processes	Semester 1	12.50
GEOG30003 Geographical Thought	Semester 1	12.50
GEOG30004 Fluvial Geomorphology	Semester 2	12.50
GEOG30019 Sustainable Development	Semester 1	12.50
GEOG30021 The Disaster Resilient City	Semester 2	12.50
GEOG30022 River Ecology & Ecosystem Management	Semester 1	12.50
GEOG30023 Global Climate Change in Context	February	12.50
GEOG30024 Africa: Environment, Development, People	Semester 2	12.50
GEOG30025 Biogeography and Ecology of Fire	Semester 1	12.50

### Geomatics

Subject	Study Period Commencement:	Credit Points:
GEOG20013 Applications of GIS	Semester 1	12.50
GEOG20015 Surveying and Mapping	Semester 2	12.50
GEOG30009 Imaging the Environment	Semester 1	12.50
GEOG30013 Land Administration Systems	Semester 2	12.50

### Informatics

Additional subjects are listed under 'Science informatics'.

Subject	Study Period Commencement:	Credit Points:
INFO20002 Foundations of Informatics	Semester 1	12.50
INFO20003 Database Systems	Semester 2	12.50
INFO30006 Information Management Techniques	Semester 2	12.50
INFO30004 Usability Engineering	Semester 1	12.50
INFO30005 Web Information Technologies	Semester 1	12.50
BINF20001 The Future of Health in a Data Storm	Semester 1	12.50

### Internship

Subject	Study Period Commencement:	Credit Points:
SCIE30002 Science and Technology Internship	Semester 1, Semester 2	12.50

### Mathematics and Statics

Subject	Study Period Commencement:	Credit Points:
MAST10005 Calculus 1	Semester 1, Semester 2	12.50
MAST10006 Calculus 2	Semester 1, Semester 2	12.50
MAST10007 Linear Algebra	Summer Term, Semester 1, Semester 2	12.50
MAST10008 Accelerated Mathematics 1	Semester 1	12.50
MAST10009 Accelerated Mathematics 2	Semester 2	12.50
MAST10010 Data Analysis 1	Semester 2	12.50
MAST20004 Probability	Semester 1	12.50
MAST20005 Statistics	Semester 2	12.50
MAST20006 Probability for Statistics	Semester 1	12.50
MAST20009 Vector Calculus	Semester 1, Semester 2	12.50
MAST20018 Discrete Maths and Operations Research	Semester 2	12.50
MAST20022 Group Theory and Linear Algebra	Semester 2	12.50
MAST20026 Real Analysis	Semester 1, Semester 2	12.50
MAST20029 Engineering Mathematics	Summer Term, Semester 1, Semester 2	12.50
MAST20030 Differential Equations	Semester 2	12.50
MAST30001 Stochastic Modelling	Semester 2	12.50
MAST30005 Algebra	Semester 1	12.50
MAST30011 Graph Theory	Semester 1	12.50
MAST30012 Discrete Mathematics	Semester 2	12.50
MAST30020 Probability for Inference	Semester 1	12.50
MAST30013 Techniques in Operations Research	Semester 1	12.50
MAST30021 Complex Analysis	Semester 1, Semester 2	12.50
MAST30022 Decision Making	Semester 2	12.50
MAST30024 Geometry	Semester 2	12.50
MAST30025 Linear Statistical Models	Semester 1	12.50
MAST30026 Metric and Hilbert Spaces	Semester 2	12.50
MAST30027 Modern Applied Statistics	Semester 2	12.50
MAST30028 Numerical and Symbolic Mathematics	Semester 2	12.50
MAST30029 Partial Differential Equations	Not offered 2015	12.50
MAST30030 Applied Mathematical Modelling	Semester 1	12.50
MAST30031 Methods of Mathematical Physics	Semester 2	12.50

### Microbiology and Immunology



A number of Microbiology and Immunology subjects are quota-restricted.

Subject	Study Period Commencement:	Credit Points:
MIIM30002 Principles of Immunology	Semester 1	12.50
MIIM30003 Medical and Applied Immunology	Semester 2	12.50
MIIM30011 Medical Microbiology: Bacteriology	Semester 1	12.50
MIIM30014 Medical Microbiology: Virology	Semester 2	12.50
MIIM30015 Techniques in Immunology	Semester 2	12.50
MIIM30016 Techniques in Microbiology	Semester 1	12.50
MIIM20002 Microbes, Infections and Responses	Semester 2	12.50
MIIM30015 Techniques in Immunology	Semester 2	12.50
MIIM30016 Techniques in Microbiology	Semester 1	12.50

### Neuroscience

Subject	Study Period Commencement:	Credit Points:
NEUR30003 Principles of Neuroscience	Semester 1	12.50
NEUR30004 Sensation Movement and Complex Functions	Semester 2	12.50
NEUR30005 Developmental Neurobiology	Semester 2	12.50
OPTO30007 Visual Neuroscience	Semester 2	12.50

### Pathology

A number of Pathology subjects are quota-restricted.

Subject	Study Period Commencement:	Credit Points:
PATH20003 Experimental Pathology	Semester 2	12.50
PATH30001 Mechanisms of Human Disease	Semester 1	12.50
PATH30002 Techniques for Investigation of Disease	Semester 1	12.50
PATH30003 Frontiers in Human Disease	Semester 2	12.50
PATH30004 Advanced Investigation of Human Disease	Semester 2	12.50

### Pharmacology

A number of Pharmacology subjects are quota-restricted.

Subject	Study Period Commencement:	Credit Points:
PHRM20001 Pharmacology: How Drugs Work	Semester 2	12.50
PHRM30002 Drugs Affecting the Nervous System	Semester 2	12.50
PHRM30003 Drug Treatment of Disease	Semester 2	12.50
PHRM30008 Drugs: From Discovery to Market	Semester 1	12.50
PHRM30009 Drugs in Biomedical Experiments	Semester 1, Semester 2	12.50

## Physics

Subject	Study Period Commencement:	Credit Points:
PHYC10001 Physics 1: Advanced	Semester 1	12.50
PHYC10003 Physics 1	Semester 1	12.50
PHYC10005 Physics 1: Fundamentals	Semester 1	12.50
PHYC10006 Physics 2: Life Sciences & Environment	Semester 2	12.50
PHYC10008 From the Solar System to the Cosmos	Semester 2	12.50
PHYC20009 Thermal and Classical Physics	Semester 1	12.50
PHYC20010 Quantum Mechanics and Special Relativity	Semester 1	12.50
PHYC20011 Electromagnetism and Optics	Semester 2	12.50

## Physiology

A number of Physiology subjects are quota-restricted.

Subject	Study Period Commencement:	Credit Points:
NEUR30002 Neurophysiology: Neurons and Circuits	Semester 1	12.50
PHYS30001 Cardiovascular Health: Genes & Hormones	Semester 2	12.50
PHYS30005 Muscle and Exercise Physiology	Semester 1	12.50
PHYS30008 Frontiers in Physiology	Semester 2	12.50
PHYS30009 Experimental Physiology	Semester 1	12.50

## Plant Science

Subject	Study Period Commencement:	Credit Points:
BOTA20001 Green Planet: Plants and the Environment	Semester 1	12.50
BOTA20002 Plant Biodiversity	Semester 2	12.50
BOTA20004 Flora of Victoria	February	12.50
BOTA30001 Marine Botany	November	12.50
BOTA30002 Plant Evolution	Semester 2	12.50
BOTA30003 Environmental Plant Physiology	Semester 1	12.50
BOTA30004 Vegetation Management and Conservation	Semester 2	12.50
BOTA30005 Plant Molecular Biology & Biotechnology	Semester 2	12.50
BOTA30006 Field Botany	January	12.50

## Psychology

Subject	Study Period Commencement:	Credit Points:
PSYC10003 Mind, Brain & Behaviour 1	Semester 1	12.50

PSYC10004 Mind, Brain and Behaviour 2	Semester 2	12.50
PSYC20006 Biological Psychology	Semester 1	12.50
PSYC20007 Cognitive Psychology	Semester 2	12.50
PSYC30013 Research Methods for Human Inquiry	Semester 1	12.50
PSYC30014 The Psychopathology of Everyday Life	Semester 2	12.50
PSYC30017 Perception, Memory and Cognition	Semester 1	12.50
PSYC30018 Neuroscience and the Mind	Semester 1	12.50
PSYC30019 Development of the Thinking Child	Semester 2	12.50
PSYC30020 The Integrated Brain	Semester 2	12.5
PSYC30021 Psychological Science: Theory & Practice	Semester 2	12.50

### Research Project Subjects

Subject	Study Period Commencement:	Credit Points:
ENST30002 Land And Environment Research Project	Semester 1, Semester 2	12.50
SCIE30001 Science Research Project	Summer Term, Semester 1, Semester 2	12.50
BIOM30003 Biomedical Science Research Project	Summer Term, Semester 1, Semester 2	12.50

### Science (General)

Subject	Study Period Commencement:	Credit Points:
MULT10011 Introduction to Life, Earth and Universe	Semester 1	12.50

### Science Informatics

Subject	Study Period Commencement:	Credit Points:
SINF30008 Science Informatics in Practice	Not offered 2015	12.50

### Veterinary Science

A number of Level 3 Veterinary Science subjects will be quota-restricted.

Subject	Study Period Commencement:	Credit Points:
VETS20014 Foundations of Animal Health 1	Semester 1	12.50
VETS20015 Foundations of Animal Health 2	Semester 2	12.50
VETS30011 Animal Disease Biotechnology 1	Semester 1	12.50
VETS30012 Animal Disease Biotechnology 2	Semester 2	12.50

### Zoology

Subject	Study Period Commencement:	Credit Points:
ZOOL20004 Australian Wildlife Biology	Semester 1	12.50

	ZOOL20005 Animal Structure and Function	Semester 1	12.50
	ZOOL20006 Comparative Animal Physiology	Semester 2	12.50
	BIOL30001 Reproductive Physiology	Semester 2	12.50
	BIOL30002 Experimental Reproductive Physiology	Semester 2	12.50
	ECOL30007 Marine Ecosystems: Ecology & Management	Semester 1	12.50
	ZOOL30004 Evolution and the Human Condition	Semester 1	12.50
	ZOOL30006 Animal Behaviour	Semester 1	12.50
	ZOOL30007 Experimental Animal Behaviour	Semester 1	12.50
	ZOOL30008 Experimental Marine Biology	February	12.50
	ZOOL30009 Field Biology of Australian Wildlife	Semester 2	12.50
<b>Related Course(s):</b>	Bachelor of Biomedicine		