

Handbook 2020

Coursecode

B1337

BACHELOR OF SCIENCE/BACHELOR OF LABORATORY MEDICINE

Murdoch University

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Cancellation of Courses, Majors, Minors and Units

The University reserves the right to cancel, without notice, any course, major, minor or unit if the number of students enrolled falls below limits set by the University or in other unforeseen circumstances.

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Group	Course	Offerings
Laboratory Medicine	Laboratory Medicine (BSc/BLabMed)	• Murdoch campus (internal)

LABORATORY MEDICINE

LABORATORY MEDICINE (BSC/BLABMED)

Course Codes: B1337

Restriction: Enrolment is subject to restriction due to constraints on unit enrolments.

Admission Requirements (Onshore):

As per normal undergraduate admission requirements.

Medical, Molecular and Forensic Sciences

Medical laboratory scientists routinely perform diagnostic tests using human or veterinary clinical specimens that may include blood, cellular aspirates, tissue biopsies, stool or urine. They are employed in both the public and private sectors at hospitals and pathology laboratories. They have a broad knowledge of disease processes and are skilled in the handling of patient material, clinical testing and the analysis of results in specific discipline areas such as biochemistry, haematology, immunology, microbiology, histopathology, diagnostic genomics and transfusion science.

Duration: 4 years full-time or part-time equivalent

Bachelor of Science/Bachelor of Laboratory Medicine (BSc/BLabMed) in Laboratory Medicine

Availability:

- Murdoch campus (internal)

This course requires students to undertake work-based training through a compulsory work-based placement as part of their studies.

Major Prerequisites

Students who achieved a final scaled score of 50 percent or more in Chemistry 3A/3B or Chemistry ATAR within the past three years should seek an exemption from their Academic Chair for CHE140 Fundamentals of Chemistry. Students who have completed previous chemistry not stated above should also consult their Academic Chair for clarification of their enrolment requirements.

Course Structure - 96 credit points

Part I - 24 to 27 credit points

Year 1 - 24 to 27 credit points

Transition Unit - 3 credit points

BSC100 Building Blocks for Science Students - 3 points
MURDOCH: S1-internal, S1-external, S2-internal, S2-external

Breadth Unit for Degree - 3 credit points

The following unit is no longer available - contact the Academic Chair for advice:

BSC150 What is Science? - 3 points
Murdoch: S1-internal, S1-external, S2-internal, S2-external

Core Units - 18 to 21 credit points

BMS101 Introduction to the Human Body - 3 points
MURDOCH: S1-internal

MAS183 Statistical Data Analysis - 3 points
MURDOCH: S1-internal, S1-external, S2-internal, S2-external

BMS107 Foundations of Vertebrate Form and Function - 3 points
MURDOCH: S2-internal

BIO152 Cell Biology - 3 points
MURDOCH: S1-internal (quota of 180 places), S2-internal

CHE140 Fundamentals of Chemistry - 3 points
MURDOCH: S1-internal, S1-external, S2-internal, S2-external

Note: Students who are exempted from CHE140 Fundamentals of Chemistry may choose a General elective to make up the required points.

CHE144 Foundations of Chemistry - 3 points
MURDOCH: S1-internal, S1-external, S2-internal, S2-external

Students taking units from the Forensic Biology and Toxicology major will also need to take

CHE103 Introduction to Forensic Science - 3 points
MURDOCH: S1-internal

Part II - 69 to 72 credit points

University-Wide Breadth Units - 6 credit points

Select from the prescribed list of University-Wide Breadth Units. A unit cannot be used to satisfy both this Breadth Unit requirement and the requirements of a major or minor. If taken at 100 level the unit(s) will be attributed to Part I. Note that no more than 30 credit points at Part I may be credited towards course completion requirements.

Research Skills Units - 6 credit points

Select from the units recommended below. A unit cannot be used to satisfy both this Research Skills Unit requirement and the requirements of a major or minor. If taken at 100 level the unit(s) will be attributed to Part I. Note that no more than 30 credit points at Part I may be credited towards course completion requirements.

BSC200 Research in the Physical and Life Sciences - 3 points
Not available this year

MAS223 Applied Statistics - 3 points
MURDOCH: S2-internal, S2-external

MAS224 Biostatistical Methods - 3 points
MURDOCH: S1-internal, S1-external

BIO388 Forensic Science and Miscarriages of Justice - 3 points
MURDOCH: W-internal

BIO394 Genetic Engineering - 3 points
MURDOCH: S1-internal

BIO367 Forensic Toxicology - 3 points
MURDOCH: S2-internal

BIO246 Microbiology - 3 points
MURDOCH: S1-internal

BMS316 Parasitology: People, Pets and Wildlife - 3 points
MURDOCH: S2-internal

BMS317 Human Pharmacology - 3 points
MURDOCH: S1-internal

Year 2 - 15 to 18 credit points

Core Units - 12 credit points

BMS218 Haematology - 3 points
MURDOCH: S2-internal (quota of 80 places)

BIO282 Molecular Biology - 3 points
MURDOCH: S1-internal

BMS211 Medical Immunology and Molecular Genetics - 3 points
MURDOCH: S2-internal

BMS212 Medical Microbiology - 3 points
MURDOCH: S1-internal

Required Additional Study Area - 6 to 9 credit points

Select units from one of the following majors:

Biomedical Science Major - 9 credit points

BMS206 Biomedical Physiology - 3 points
MURDOCH: S1-internal

BIO247 Biochemistry - 3 points
MURDOCH: S2-internal

BMS212 Medical Microbiology - 3 points
MURDOCH: S1-internal

OR

BMS316 Parasitology: People, Pets and Wildlife - 3 points
MURDOCH: S2-internal

Forensic Biology and Toxicology Major - 6 credit points

BIO247 Biochemistry - 3 points
MURDOCH: S2-internal

BMS213 Forensic Anatomy and Anthropology - 3 points
MURDOCH: S1-internal

Genetics and Molecular Biology Major - 6 credit points

BIO246 Microbiology - 3 points
MURDOCH: S1-internal

OR

BMS212 Medical Microbiology - 3 points
MURDOCH: S1-internal

BIO247 Biochemistry - 3 points
MURDOCH: S2-internal

General Electives - 0 to 3 credit points

Select from any 200- to 400-level units offered by the University, subject to individual unit prerequisites. Students are advised to consider using General Elective points to meet the requirements of a second major or minor. Any recommended double majors and minors will be included in the major's description.

Year 3 - 18 credit points**Core Units - 9 credit points**

BMS321 Histology - 3 points
MURDOCH:
S1-internal (quota of 50 places)

BMS314 Pathological Basis of Disease - 3 points
MURDOCH: S1-internal

Select one unit from below to be studied in Year 3 with the remaining two units to be studied in Year 4.

BMS322 Clinical Immunology - 3 points
MURDOCH:
S2-internal (quota of 25 places)

BMS325 Histopathology - 3 points
MURDOCH:
S2-internal (quota of 20 places)

BMS327 Diagnostic Genomics - 3 points
MURDOCH:
S1-internal (quota of 30 places)

Specified Electives - 6 credit points

Select from the following:

BMS323 Clinical Biochemistry I - 3 points
MURDOCH:
S2-internal (quota of 25 places)

BMS324 Clinical Microbiology I - 3 points
MURDOCH:
S2-internal (quota of 48 places)

BMS326 Clinical Haematology I - 3 points

MURDOCH:
S2-internal (quota of 25 places)

Required Additional Study Area - 6 to 9 credit points

Select units from one of the following majors, which must be the same as the area chosen for Year 2 units.

Biomedical Science Major - 6 credit points

BMS314 Pathological Basis of Disease - 3 points
MURDOCH: S1-internal

BMS315 Advances in Medical Science - 3 points
MURDOCH: S2-internal

Forensic Biology and Toxicology Major - 9 credit points

BIO315 Bodies of Evidence - 3 points
MURDOCH: S2-internal

BIO359 Forensic DNA Analysis - 3 points
MURDOCH: S1-internal

BIO367 Forensic Toxicology - 3 points
MURDOCH: S2-internal

Genetics and Molecular Biology Major - 9 credit points

BIO356 Genetics and Evolution - 3 points
MURDOCH: S1-internal

BIO394 Genetic Engineering - 3 points
MURDOCH: S1-internal

BIO378 Systems Biology - 3 points
MURDOCH: S2-internal

General Electives - 0 to 3 credit points

Select from any 200- to 400-level units offered by the University, subject to individual unit prerequisites. Students are advised to consider using General Elective points to meet the requirements of a second major or minor. Any recommended double majors and minors will be included in the major's description.

Year 4 - 24 credit points**Core Units - 18 credit points**

BMS431 Laboratory Medicine Practice I - 6 points
MURDOCH: UW1-placement

BMS432 Laboratory Medicine Practice II - 6 points
MURDOCH: UW1-placement

Select one unit from below to be studied in Year 3 with the remaining two units to be studied in Year 4.

BMS322 Clinical Immunology - 3 points
MURDOCH:
S2-internal (quota of 25 places)

BMS325 Histopathology - 3 points
MURDOCH:
S2-internal (quota of 20 places)

BMS327 Diagnostic Genomics - 3 points
MURDOCH:
S1-internal (quota of 30 places)

Specified Electives - 6 credit points

Select from the following:

BMS423 Clinical Biochemistry II - 3 points
MURDOCH: S2-internal

BMS424 Clinical Microbiology II - 3 points
MURDOCH: S2-internal

BMS426 Clinical Haematology II - 3 points
MURDOCH: S2-internal

PREREQUISITES

Advances in Medical Science (BMS315)

BMS360/BMS314 Mechanisms of Disease/Pathological Basis of Disease or permission of the Unit Coordinator; BMS203/BMS212 Medical Microbiology or BMS316 Parasitology: People, Pets and Wildlife and either BMS265/BIO252/BIO243 Immunology and Vaccines or BMS211 Medical Immunology and Molecular Genetics.

Applied Statistics (MAS223)

MAS183 Statistical Data Analysis.

Biochemistry (BIO247)

BIO152 Cell Biology/Foundations of Cell and Molecular Biology/Foundations of Cell Biology

Biomedical Physiology (BMS206)

BMS107 Foundations of Vertebrate Form and Function

Biostatistical Methods (MAS224)

MAS180 Introduction to Statistics or MAS183 Statistical Data Analysis.

Bodies of Evidence (BIO315)

PEC103/CHE103 Introduction to Forensic Science; BIO282 Molecular Biology

Building Blocks for Science Students (BSC100)

Enrolment in a Bachelor of Science, Bachelor of Animal Science, Bachelor of Environmental Management, Bachelor of Environmental Science, Bachelor of Extractive Metallurgy, Bachelor of Forensics, Bachelor of Information Technology Management, Bachelor of Marine Science, Bachelor of Sports Science, Bachelor of Technology in Engineering Technology, Bachelor of Sustainability, Bachelor Of Sport And Exercise Science, Bachelor of Sport and Exercise Science + Psychology (BSportExSc, BSc) or Bachelor Of Sport And Exercise Science/Graduate Diploma In Clinical Exercise Physiology, B1355 Bachelor of Laws / Bachelor of Science (Psychology)

Cell Biology (BIO152)

A thorough knowledge of ATAR Chemistry is assumed. For students who did not achieve a WACE course score of more than 50% in Chemistry (3A/3B) or Chemistry ATAR within the three years immediately preceding enrolment, completion of CHE140 Fundamentals of Chemistry is required.

Successful completion of BSC100 Building Blocks for Science Students is required. BEd(Sec) students not meeting these prerequisite requirements will need to seek approval from their Academic Chair to participate in this unit.

Clinical Biochemistry I (BMS323)

BIO247 Biochemistry

Clinical Biochemistry II (BMS423)

BMS323 Clinical Biochemistry I

Clinical Haematology I (BMS326)

BMS218 Haematology

Clinical Haematology II (BMS426)

BMS326 Clinical Haematology I

Clinical Immunology (BMS322)

BMS211 Immunology and Molecular Genetics

Clinical Microbiology I (BMS324)

BMS212 Medical Microbiology

Clinical Microbiology II (BMS424)

BMS324 Clinical Microbiology I

Diagnostic Genomics (BMS327)

BIO282 Molecular Biology

Forensic Anatomy and Anthropology (BMS213)

Nil. Highly recommended: BMS101 Introduction to the Human Body or ANS102 Introduction to the Animal Body.

Forensic DNA Analysis (BIO359)

BIO202 Molecular Biology I or BIO212 Genetic Engineering or BIO282 Molecular Biology

Forensic Science and Miscarriages of Justice (BIO388)

PEC103/CHE103 Introduction to Forensic Science OR CRM100 Introduction to Criminology OR permission of the Unit Co-ordinator.

Forensic Toxicology (BIO367)

Successful completion of, or concurrent enrolment in, either BIO247/BIO270 Biochemistry/Biochemistry I or BMS261/VET272 Human and Comparative Biochemistry/Comparative Mammalian Biochemistry or CHE207 Chemical Analysis..

Foundations of Chemistry (CHE144)

A thorough knowledge of Chemistry ATAR is assumed. Students who did not achieve a final scaled score of 50 percent or more in Chemistry ATAR within the three years immediately preceding this enrolment are required to pass CHE140 Fundamentals of Chemistry before enrolling in this unit.

Foundations of Vertebrate Form and Function (BMS107)

Nil. Highly recommended: BMS101 Introduction to the Human Body or ANS102 Introduction to the Animal Body.

Fundamentals of Chemistry (CHE140)

Knowledge of chemistry to the level of Year 10 (fourth year of WA secondary school) or equivalent and reasonable grounding in basic mathematics are assumed.

Genetic Engineering (BIO394)

BIO282 Molecular Biology

Genetics and Evolution (BIO356)

BIO152 Cell Biology/Foundations of Cell and Molecular Biology/Foundations of Cell Biology and either MAS183 Statistical Data Analysis and Databases or MAS182 Applied Mathematics or equivalent.

Haematology (BMS218)

BIO152 Cell Biology/Foundations of Cell and Molecular Biology/Foundations of Cell Biology.

Histology (BMS321)

BMS101 Introduction to the Human Body, BMS107 Vertebrate Form and Function, BIO152 Cell Biology.

Histopathology (BMS325)

BMS321 Histology

Human Pharmacology (BMS317)

Essential: BIO247 Biochemistry or BMS206 Biomedical Physiology OR VET272 Comparative Mammalian Biochemistry.
Recommended: BRD202 Drugs in Society

Introduction to Forensic Science (CHE103)

Nil.

Introduction to the Human Body (BMS101)

Nil.

Laboratory Medicine Practice I (BMS431)

Enrolment in BMS432 Laboratory Medicine Practice II and completion of BMS322 Clinical Immunology or BMS325 Histopathology or BMS327 Diagnostic Genomics; AND any two units from BMS323 Clinical Biochemistry I, BMS324 Clinical Microbiology I or BMS326 Clinical Haematology I.

Laboratory Medicine Practice II (BMS432)

Enrolment in BMS431 Laboratory Medicine Practice I and completion of BMS322 Clinical Immunology or BMS325 Histopathology or BMS327 Diagnostic Genomics; AND any two units from BMS323 Clinical Biochemistry I, BMS324 Clinical Microbiology I or BMS326 Clinical Haematology I.

Medical Immunology and Molecular Genetics (BMS211)

BIO152 Cell Biology/ Foundations of Cell and Molecular Biology.

Medical Microbiology (BMS212)

Nil.

Microbiology (BIO246)

BIO152 Cell Biology/Foundations of Cell and Molecular Biology/Foundations of Cell Biology

Molecular Biology (BIO282)

BIO152 Cell Biology/Foundations of Cell and Molecular Biology/Foundations of Cell Biology

Parasitology: People, Pets and Wildlife (BMS316)

BIO152 Cell Biology/Foundations of Cell and Molecular Biology/Foundations of Cell Biology

Pathological Basis of Disease (BMS314)

BMS264/BMS206 OR BMS321 OR concurrent enrolment in BMS321.

Research in the Physical and Life Sciences (BSC200)

BSC100 Building Blocks for Science Students; OR enrolment in B1329 Bachelor of Education/Bachelor of Science and BED100 Ideas in Education.

Statistical Data Analysis (MAS183)

Nil.

Systems Biology (BIO378)

BIO270 Biochemistry I or BIO247 Biochemistry or BMS261 Human and Comparative Biochemistry or VET272 Comparative Mammalian Biochemistry; BIO282 Molecular Biology or BIO316 Molecular Genetics.

Personal Study Plan

Unit Sets:

Year	Semester 1	Semester 2
1		
2		
3		
4		