

FACULTY OF PHARMACY
HANDBOOK 2015

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staff use only

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Welcome



Welcome to the Faculty of Pharmacy at the University of Sydney. Our faculty has long been recognised as one of the leading centres for pharmacy education in Australia and enjoys an outstanding national and international reputation for research and innovation.

Students and staff at the faculty continually strive for excellence in their learning, teaching and research and the faculty actively promotes opportunities for its students to add new skills and experiences to their personal achievements.

Our commitment is to provide our students with a well-rounded and professionally relevant pharmacy degree, placing them in high demand with employers and preparing them for a lifetime of learning. We achieve this through an up-to-date teaching curriculum structured around themes and learning outcomes that describe the knowledge, skills and attitudinal milestones to be achieved by students each year. I would encourage all new students to engage fully in university and faculty life from the beginning of semester.

Student life in the Faculty of Pharmacy

You will be taught by, and interact with, world-renowned academics. As well as being known as leaders in their field, they are highly regarded for their friendly, approachable style. Outside of the classroom you will have access to a wealth of social, sporting and cultural activities provided by student organisations.

Sydney University Pharmacy Association

The Sydney University Pharmacy Association also provides a range of academic, professional and social activities. Association representatives, elected by students, liaise with faculty staff to provide feedback on the student experience and input into the quality assurance process of the faculty.

What can you achieve with a pharmacy degree?

If you enjoy science, health or medicine and want to make a long-lasting difference in people's lives then pharmacy is the career

for you. Pharmacists are an integral part of the healthcare system and have the capacity to affect directly the lives and lifestyles of the people with whom they interact. Whether you decide to register as a pharmacist and work in community or hospital pharmacy, enter the pharmaceutical industry, work for government agencies or contribute to research and academia, you will have the ability and expertise to help improve the wellbeing of the nation.

Our innovative teaching style and clinical and experiential placements will provide you with a well-rounded, professionally relevant pharmacy degree that puts you in high demand with employers.

Becoming a pharmacist

To become a registered pharmacist, graduates of either the Bachelor of Pharmacy or Master of Pharmacy must complete 1824 hours (one year) of supervised practical training, followed by a registration examination. This is a requirement of the Pharmacy Board of Australia. During the supervised training year, graduates will also need to complete an approved Intern Training Program. The University of Sydney offers an approved ITP that can lead to a postgraduate qualification, the Graduate Certificate in Pharmacy Practice.

Research opportunities

Research at the faculty covers pharmaceutical and clinical sciences ranging from the design, synthesis, testing and mechanism of action of drugs, studies on advanced drug delivery and the fate of drugs in humans, to clinical and sociological aspects of pharmacy and health services research.

The faculty offers a Doctor of Philosophy in the area of pharmacy for students who wish to focus on a research career or gain the ultimate academic qualification. A Master of Philosophy in Pharmacy is also available.

On behalf of the faculty, I would like to wish all our students, new and continuing, every success in their chosen degrees and future careers. Enjoy your time here and above all use it well to make the most of the wonderful opportunities that studying at the Faculty of Pharmacy provides.

Professor Iqbal Ramzan

Dean of the Faculty of Pharmacy



Resolutions of the Senate

Resolutions of the Senate

1 Degrees, diplomas and certificates of the Faculty of Pharmacy

- (1) With the exception of the Doctor of Philosophy, the Senate, by authority of the University of Sydney Act 1989 (as amended), provides and confers the following degrees, diplomas and certificates, according to the rules specified by the Faculty of Pharmacy. The Doctor of Philosophy is provided and conferred according to the rules specified by the Senate and the Academic Board.
- (2) This list is amended with effect from 1 January, 2011. Degrees, diplomas and certificates no longer open for admission will be conferred by the Senate according to the rules specified by the Faculty at the time.

2 Degrees

Code	Course title	Abbreviation	Credit points
RPPHDPHA-01	Doctor of Philosophy	PhD	Research
RMPHLPHA-01	Master of Philosophy	MPhil(Pharm)	Research
MAPHARMA-01	Master of Pharmacy	MPharm	96
BUPHARMA-01	Bachelor of Pharmacy [^]	BPharm	192

[^]may be awarded with honours in an integrated program.

3 Graduate certificates

Code	Course title	Abbreviation	Credit points
PG003	Graduate Certificate in Pharmacy Practice	GradCertPharmPrac	24



Resolutions of the Faculty

Resolutions of the Faculty of Pharmacy for coursework awards

These resolutions apply to all undergraduate and postgraduate coursework award courses in the Faculty, unless specifically indicated otherwise. Students enrolled in postgraduate research awards should consult the resolutions for their course. These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2000 (the 'Coursework Rule'), the resolutions for the course of enrolment, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended) and the Academic Board policies on Academic Dishonesty and Plagiarism.

Part 1: Course enrolment

1 Enrolment restrictions

Except with the permission from the Dean, a student may not enrol in units of study with a total value of more than 24 credit points in either semester one or two, 12 credit points in the summer session and 6 credit points in the winter session.

2 Time Limits

- (1) A student must complete all the requirements for a master's degree within four calendar years of first enrolment.
- (2) A student must complete all the requirements for a graduate diploma within four calendar years of first enrolment or six calendar years if enrolled part time.
- (3) A student must complete all the requirements for a graduate certificate within two calendar years of first enrolment (except the Graduate Certificate in Pharmacy Practice which must be completed within five calendar years of first enrolment).
- (4) A student must complete all the requirements for a bachelor's degree or undergraduate advanced diploma within ten calendar years of first enrolment.

3 Suspension, discontinuation and lapse of candidature

- (1) A candidate who wishes to suspend their candidature must apply, in writing, to the Faculty. The application must be received by the Faculty prior to the census date of the relevant semester.
- (2) A candidate may apply for a period of suspension for up to two semesters. Should a candidate wish to suspend their candidature for more than the approved period another application must be made to the Faculty prior to the census date of the relevant semester. If the candidate has previously had two semesters of suspension, or if an application is submitted after the census date for that period, the application will be considered by the Faculty.
- (3) Where a candidate has previously enrolled for the relevant semester, a suspension of enrolment may be recorded as Withdrawn (W), Discontinued - Not to count as failure (DNF) or Discontinued with failure (DF).

Part 2: Unit of study enrolment

4 Cross institutional study

- (1) Provided permission has been obtained in advance, the Dean may permit a student to complete a unit of study at another institution and have that unit credited to the student's course requirements, provided that:
 - (a) The unit of study content is not taught in any corresponding unit of study at the University; or
 - (b) The student is unable, for good reason, to attend a corresponding unit of study at the University.
- (2) Cross institutional study is regarded as another form of credit and will be counted as such when considering eligibility.

5 International Exchange

Exchange for pharmacy students is not straightforward due to the strict requirements of the pharmacy courses. For students enrolled in the international major of the Bachelor of Pharmacy, international exchange is permitted in semester 2 of year 4.

Part 3: Studying and Assessment

6 Attendance

- (1) Students are required to be in attendance at the correct time and place of any formal or informal examinations. Non attendance on any grounds insufficient to claim special consideration will result in the forfeiture of marks associated with the assessment. Participation in a minimum number of assessment items may be included in the requirements specified for a unit of study.
- (2) Students are expected to attend a minimum of 85% of compulsory activities for a unit of study, unless granted exemption by the Dean, Associate Dean or coordinator. The Dean, Associate Dean or coordinator most concerned may determine that a student fails a unit of study because of inadequate attendance. Alternatively, at their discretion, they may set additional assessment items where attendance is lower than 90%.

7 Late submission policy

- (1) It is expected that unless an application for special consideration has been approved, students will submit all assessment for a unit of study on the due date specified. If the assessment is completed or submitted within an approved period of extension, no academic penalty will be applied to that piece of assessment.
- (2) If an extension is either not sought, not granted or is granted but work is submitted after the extended due date, the late submission of assessment will result in an academic penalty as follows:
 - (a) For work submitted after the deadline but up to three calendar days late, a penalty of 15 per cent of the maximum mark awardable for the assignment will apply.
 - (b) For work submitted after 3 days and less than one week after the deadline, a penalty of 30 per cent of the maximum mark awardable for the assignment will apply.
 - (c) For work submitted more than one week late but less than two weeks after the deadline, a penalty of 50 per cent of the maximum mark awardable for the assignment will apply.
 - (d) Work submitted more than two weeks after deadline will not be assessed (zero mark).



8 Special consideration for illness, injury or misadventure

Special consideration is a process that affords equal opportunity to students who have experienced circumstances that adversely impact their ability to adequately complete an assessment task in a unit of study. The Coursework Rule provides full details of the University policy. The procedures for applying for special consideration are described in each unit of study outline.

9 Concessional pass

In this Faculty the grade PCON is not awarded.

10 Re-assessment

- (1) In this Faculty re-assessment is offered to students whose performance is in the prescribed range and circumstances.
- (2) Re-assessment may be permitted if students in their final year fail a single compulsory assessment resulting in a grade of fail in only that unit of study, preventing them from completing the degree that year. A grade of 50 pass is the maximum grade a student can achieve if they pass the final year rule in the assessment.
- (3) Students who have successfully requested special consideration may be allowed to sit the exam or submit the required work at a negotiated date that should not be longer than the period of incapacitation, and in any case normally not longer than 3 months after the original examination or submission date. After this time the student will be considered to have discontinued with permission. Marks will be awarded at full value for re-assessment where special consideration is approved.

Part 4: Progression, Results and Graduation

11 Satisfactory Progress

The Faculty will monitor students for satisfactory progress towards the completion of their award course. In addition to the common triggers used to identify students not meeting academic progression requirements, (as defined by the Progression requirements of the Coursework Rule), students must pass any unit of study identified in the course resolutions as being critical to progression through the course.

12 Weighted Average Mark (WAM)

- (1) The University WAM is calculated using the following formula:

$\text{WAM} = \frac{\text{sum}(Wc \times Mc)}{\text{sum}(Wc)}$
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Where Wc is the unit of study credit points x the unit weighting and Mc is the mark achieved for the unit. The mark used for units with a grade AF is zero. Pass/ fail units and credited units from other institutions are not counted.

- (2) The weight of a unit of study is assigned by the owning faculty. In the Faculty of Pharmacy, 1000, 2000, 3000 and 4000 level units attempted for the degree, weighted 1, 2, 3, 4 for the respective levels. Units with a result of R (satisfied requirement) are not counted.

Bachelor of Pharmacy

The Bachelor of Pharmacy is the only undergraduate degree offered at the Faculty of Pharmacy. The degree is a full-time, four-year course with progression towards the degree by the accumulation of credit points. The degree may be awarded at the Pass or Honours level.

Curriculum

The course will cover major topics studied including chemical, physical, pharmaceutical and pharmacological properties of medicines and the application of these in the practice of pharmacy.

The first year is a foundation year in which you study biology and chemistry, and are introduced to pharmacy through foundation and social pharmacy studies.

The remaining three years are devoted to higher levels of biomedical and pharmaceutical sciences together with specialised clinical pharmacy studies. Practical experience in a variety of clinical settings including hospital and community pharmacy is emphasised, particularly in the third and fourth years.

Assumed knowledge

It should be noted that most of the first-year unit of study will be taught on the assumption that students have reached the standard of assumed knowledge specified in the units of study table.

Prerequisites and corequisites

To be eligible to enrol in second-year, third-year and fourth-year units of study, students must have completed the prerequisite unit(s) of study. Any corequisite unit(s) of study not previously completed must be taken concurrently (see units of study table).

Bachelor of Pharmacy

Bachelor of Pharmacy (Honours)

These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2000 (the 'Coursework Rule'), the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended) and the Academic Board policies on Academic Dishonesty and Plagiarism.

Course resolutions

1 Course codes

Code	Course title
BUPHARMA-01	Bachelor of Pharmacy

2 Attendance pattern

The attendance pattern for this course is full time only.

3 Admission to candidature

- (1) Admission to undergraduate courses at the University of Sydney is either on the basis of completion of secondary study via the NSW Higher School Certificate, leading to the award of an Australian Tertiary Admission Ranking (ATAR) or equivalent (and subject to special admissions provisions as set out in the Coursework Rule) or on the basis of Flexible Entry Admission as set out in Admissions section of the Coursework Rule.
- (2) Rural Students Entry Scheme
Students who completed an Australian Year 12 examination in either of the two preceding years, have no tertiary record, and have completed at least the last four years of secondary education at a rural school, may be eligible for admission under the Faculty of Pharmacy Rural Students Entry Scheme for study in the Bachelor of Pharmacy. Under this scheme, a limited number of places will be available to applicants whose ATAR is not more than five points below the Main Round ATAR cut-off.

4 Requirements for award

- (1) The units of study that may be taken for the course are set out in the Units of Study table for the Bachelor of Pharmacy.
- (2) To qualify for the award of the pass degree, a candidate must successfully complete 192 credit points, including:
 - (a) 144 core credit points in the first three years; and
 - (b) an additional 48 credit points consisting of:
 - (i) 48 credit points of core units of study; or
 - (ii) 24 credit points of core units of study plus 24 credit points of major units of study.

5 Additional requirements prior to commencing clinical placements

- (1) Information about the procedures for gaining clearance for clinical placements will be provided after enrolment.
- (2) *Student clearance for clinical placements*
The New South Wales Department of Health requires that all students obtain clearance in order to undertake clinical placements. This involves a criminal record check according to NSW Health policy.
- (3) *Prohibited employment declaration*
All students should complete a prohibited employment declaration as required by the NSW Commission for Children and Young People.



(4) **Immunisation**

All students must have evidence of vaccinations and immunisation against certain infectious diseases prior to undertaking clinical placements. The requirements are consistent with Australian public health policy and NSW Health guidelines.

6 **Progression rules**

- (1) Candidates may not take a second year unit of study until they have:
 - (a) gained credit for at least 24 credit points in first year units of study; and
 - (b) successfully completed the first year units of study, prescribed by the Faculty as qualifying or prerequisite units of study for the second year, as set out in the Units of Study table.
- (2) Candidates who fail one unit of study in the first year, who have an annual average mark of (AAM) >60 for first year, may apply for a prerequisite waiver which would allow enrolment in the full complement of second year units of study, together with the failed unit of study.
- (3) Candidates may not take a third year unit of study until they have successfully completed all the first year units of study, and all the second year units of study prescribed as qualifying or prerequisite units of study for the third year, as set out in the Units of Study table.
- (4) Candidates may not take a fourth year unit of study until they have successfully completed all the third year units of study prescribed by the Faculty as qualifying or prerequisite units of study for the fourth year, as set out in the Units of Study table.
- (5) Candidates who fail one unit of study in the third year, who have an annual average mark (AAM) of >60 for third year, and who have no previous record of failure in the degree, may apply for a prerequisite waiver which would allow enrolment in the full complement of subsequent year units of study, together with the failed unit of study. This condition applies only to a fail in a single unit of study, not to the OSCE (Objective Structures Clinical Examination), which is a barrier examination and a component of all units of study (except Pharmaceutical Skills and Dispensing A and B). Candidates who fail the OSCE will not be entitled to apply for a prerequisite waiver and will be required to satisfactorily repeat ALL third year units of study (with the exception of Pharmaceutical Skills and Dispensing A and B if these Units of Study have already been passed.)

7 **Majors**

- (1) Completion of a major is not a requirement of the course. Candidates have the option of completing one major. A major requires the completion of 24 credit points chosen from units of study listed in the table for that major. The majors that may be available are:
 - (a) Rural
 - (b) Industrial
 - (c) International

8 **Requirements for the Honours degree**

- (1) Honours is available to meritorious candidates who complete an alternative set of units of study in the final year of the program. Admission to the honours program is by permission of the program coordinator after the completion of third year.
- (2) Admission requires:
 - (a) candidates to normally be of no more than three years standing, and normally have no fail or absent fail results; and
 - (b) a WAM of at least 65 in year two and three units of study.
- (3) Honours students can progress to second semester Honours only if they obtain a credit average in their first semester marks. Students who fail this requirement will go back to the Pass stream, fourth year second semester.
- (4) To qualify for the award of the honours degree a candidate must:
 - (a) complete the requirements for the pass degree but include the alternative 30 credit point honours pathway described in the table of units for the degree; and
 - (b) normally be of no more than four years standing in the degree;
 - (c) normally have no fail or absent fail results.
- (5) The grade of honours will be determined by HWAM and is awarded with the following grades:

Level of honours	Honours mark	HWAM
First Class	mark >= 85	HWAM >= 75
Second Class, Division 1	mark >= 80	70 <= HWAM < 75
Second Class, Division 2	mark >= 75	65 <= HWAM < 70
Honours not awarded	mark < 75	HWAM < 65

Candidates not meeting these criteria will be awarded the pass degree.

- (6) HWAM means the Honours Weighted Average Mark calculated from results for all 2000, 3000 and 4000 level units attempted for the degree, weighted 2, 3 and 4 for the respective levels. The Honours units of study are given a weighting of 8 in this calculation.

$WAM = \frac{\text{sum}(M \times C \times L)}{\text{sum}(C \times L)}$
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Where M is the mark, C is the credit point value, and L is the level or weighting or level of the unit of study.

9 **University Medal**

A student must obtain a WAM of 85 or greater over the entire degree, and must achieve minimum final honours mark of 90 or greater in two honours units of study - Research Methods and Honours. The medal is awarded at the discretion of the Faculty to the highest achieving students who in the opinion of the Faculty have an outstanding academic record, in accordance with the Coursework Rule.

10 **Transitional provisions**

- (1) These resolutions apply to all students enrolled in all years of the Bachelor of Pharmacy from 1 January 2014.

Bachelor of Pharmacy

Units of study table

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
First Year			
BIOL1003 Human Biology	6	A HSC Biology, however, students who have not completed HSC biology (or equivalent) are strongly advised to take the Biology Bridging Course (in February). N EDUH1016, BIOL1903, BIOL1500, BIOL1993	Semester 1 Summer Main
CHEM1611 Chemistry A (Pharmacy)	6	A HSC Chemistry and Mathematics	Semester 1
PHAR1811 Foundations of Pharmacy	6	A HSC Chemistry	Semester 1
PHAR1812 Basic Pharmaceutical Sciences	6	A HSC Chemistry, 2U Mathematics C PHAR1811, CHEM1611	Semester 1
CHEM1612 Chemistry B (Pharmacy)	6	P CHEM1611 Chemistry A (Pharmacy)	Semester 2
MBLG1001 Molecular Biology and Genetics (Intro)	6	A 6 credit points of Junior Biology and 6 credit points of Junior Chemistry. P Assumed knowledge: 6 credit points of Junior Biology and 6 credit points of Junior Chemistry. N MBLG1901; MBLG1991	Semester 2
PHAR1821 Social Pharmacy	6	C PHAR1811	Semester 2
PHAR1822 Physical Pharmaceutics and Formulation A	6	A HSC Chemistry and Mathematics C PHAR1812	Semester 2
Second Year			
PHAR2811 Drug Discovery and Design A	6	P (CHEM1611 or CHEM1102), (CHEM1612 or CHEM1101), PHAR1811, PHAR1812, MBLG1001 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR2812 Microbiology and Infection	6	P BIOL1003, PHAR1811	Semester 1
PHAR2813 Therapeutic Principles	6	P BIOL1003, PHAR1812, PHAR1822, MBLG1001	Semester 1
PHSI2601 Physiology for Pharmacy	6	P (CHEM1611 or CHEM1102) and (CHEM1612 or CHEM1101) and (BIOL1001 or BIOL1911 or BIOL1991 or BIOL1003 or BIOL1903 or BIOL1993) and (MBLG1001 or MBLG1901).	Semester 1
PCOL2605 Pharmacology for Pharmacy	6	P (CHEM1611 or CHEM1102) and (CHEM1612 or CHEM1101) and (BIOL1003 or BIOL1903 or BIOL1993) and (MBLG1001 or MBLG1901). C PHSI2601	Semester 2
PHAR2821 Drug Discovery and Design B	6	C PHAR2811 and PCOL2605	Semester 2
PHAR2822 Pharmacy Practice	6	P PHAR1811 and PHAR1821 C PHSI2601 and PCOL2605	Semester 2
PHAR2823 Physical Pharmaceutics and Formulation B	6	P (CHEM1611 or CHEM1102), (CHEM1612 or CHEM1101), PHAR1812, PHAR1822 C PHAR2812	Semester 2
Third Year			
PHAR3816 Cardiovascular and Renal	5	P All first and second year units of study. C PHAR3812 or PHAR3817, PHAR3813 or PHAR3818, PHAR3814 or PHAR3819	Semester 1a
PHAR3817 Respiratory	5	P All first and second year units of study. C (PHAR3811 or PHAR3816), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819)	Semester 1a
PHAR3818 Endocrine, Diabetes and Reproductive	5	P All first and second year units of study. C (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3814 or PHAR3819)	Semester 1b
PHAR3819 Gastrointestinal	5	P All first and second year units of study. C (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818)	Semester 1b
PHAR3826 Musculoskeletal, Dermatological & Senses	5	P All first and second year units of study. C (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819), (PHAR3821 or PHAR3828), (PHAR3822 or PHAR3829), (PHAR3824 or PHAR3827)	Semester 2a
PHAR3827 Oncology and Immunology	5	P All first and second year units of study. C (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819), (PHAR3821 or PHAR3828), (PHAR3822 or PHAR3829), (PHAR3823 or PHAR3826)	Semester 2a
PHAR3828 Mental Health	5	P All first and second year units of study. C (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819), (PHAR3822 or PHAR3829), (PHAR3823 or PHAR3826), (PHAR3824 or PHAR3827)	Semester 2b



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
PHAR3829 Neurology	5	P All first and second year units of study. C (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819), (PHAR3821 or PHAR3828), (PHAR3823 or PHAR3826), (PHAR3824 or PHAR3827)	Semester 2b
PHAR3815 Pharmaceutical Skills and Dispensing A	4	P All first and second year units of study. C (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819)	Semester 1
PHAR3825 Pharmaceutical Skills and Dispensing B	4	P All first and second year units of study. C (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819), (PHAR3821 or PHAR3828), (PHAR3822 or PHAR3829), (PHAR3823 or PHAR3826), (PHAR3824 or PHAR3827)	Semester 2
Fourth Year			
PHAR4811 Pharmacotherapeutics	6	P All third year units of study. C PHAR4812, PHAR4814, PHAR4823 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR4812 Integrated Dispensing Practice	6	P All third year units of study. C PHAR4811, PHAR4814, PHAR4823	Semester 1
PHAR4823 Pharmacy Services and Public Health	6	P All third year units of study C PHAR4811, PHAR4812, PHAR4814	Semester 1
PHAR4814 Pharmacy Management I	6	P All third year units of study C PHAR4811, PHAR4812, PHAR4823 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR4813 Novel Therapeutics	6	P PHAR4811 and PHAR4812 and PHAR4823 and PHAR4814 C Corequisites: PHAR4821, PHAR4822	Semester 2
PHAR4821 Professional Practice	12	P PHAR4811, PHAR4812, PHAR4823, PHAR4814 C PHAR4822, PHAR4813	Semester 2
PHAR4822 Clinical Placement	6	P PHAR4811, PHAR4812, PHAR4823, PHAR4814 C PHAR4821, PHAR4813	Semester 2
Fourth Year Honours			
PHAR4811 Pharmacotherapeutics	6	P All third year units of study. C PHAR4812, PHAR4814, PHAR4823 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR4812 Integrated Dispensing Practice	6	P All third year units of study. C PHAR4811, PHAR4814, PHAR4823	Semester 1
PHAR4815 Research Methods	6	P All third year units of study. C PHAR4811, PHAR4812, PHAR4823	Semester 1
PHAR4823 Pharmacy Services and Public Health	6	P All third year units of study C PHAR4811, PHAR4812, PHAR4814	Semester 1
PHAR4830 Honours	24	P PHAR4811, PHAR4812, PHAR4823, PHAR4815	Semester 2
Fourth Year Rural Major			
PHAR4811 Pharmacotherapeutics	6	P All third year units of study. C PHAR4812, PHAR4814, PHAR4823 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR4812 Integrated Dispensing Practice	6	P All third year units of study. C PHAR4811, PHAR4814, PHAR4823	Semester 1
PHAR4814 Pharmacy Management I	6	P All third year units of study C PHAR4811, PHAR4812, PHAR4823 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR4823 Pharmacy Services and Public Health	6	P All third year units of study C PHAR4811, PHAR4812, PHAR4814	Semester 1
PHAR4824 Aboriginal and Rural Health	12	P PHAR4811, PHAR4812, PHAR4813, PHAR4814 C PHAR4825, PHAR4826	Semester 2
PHAR4825 Rural Clinical Placement	6	P PHAR4811, PHAR4812, PHAR4813, PHAR4814 C PHAR4824, PHAR4826	Semester 2
PHAR4826 Rural Pharmacy Services & Public Health	6	P PHAR4811, PHAR4812, PHAR4813, PHAR4814 C PHAR4824, PHAR4825	Semester 2
Fourth Year International Major			
PHAR4811 Pharmacotherapeutics	6	P All third year units of study. C PHAR4812, PHAR4814, PHAR4823 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR4812 Integrated Dispensing Practice	6	P All third year units of study. C PHAR4811, PHAR4814, PHAR4823	Semester 1
PHAR4814 Pharmacy Management I	6	P All third year units of study C PHAR4811, PHAR4812, PHAR4823 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR4823 Pharmacy Services and Public Health	6	P All third year units of study C PHAR4811, PHAR4812, PHAR4814	Semester 1
PHAR4832 Pharmacy International Exchange	24	P PHAR4811, PHAR4812, PHAR4823, PHAR4814	Semester 2

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
Fourth Year Industrial Major			
PHAR4811 Pharmacotherapeutics	6	P All third year units of study. C PHAR4812, PHAR4814, PHAR4823 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR4812 Integrated Dispensing Practice	6	P All third year units of study. C PHAR4811, PHAR4814, PHAR4823	Semester 1
PHAR4814 Pharmacy Management I	6	P All third year units of study C PHAR4811, PHAR4812, PHAR4823 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR4823 Pharmacy Services and Public Health	6	P All third year units of study C PHAR4811, PHAR4812, PHAR4814	Semester 1
PHAR4831 Pharmacy Industrial Placement	24	P PHAR4811, PHAR4812, PHAR4823, PHAR4814	Semester 2

Bachelor of Pharmacy

Unit of study descriptions

First Year

BIOL1003

Human Biology

Credit points: 6 **Teacher/Coordinator:** Dr Osu Lilje **Session:** Semester 1, Summer Main **Classes:** Two 1-hour lectures per week (three lectures in some weeks), one 3-hour practical class per fortnight, one 2-hour workshop per fortnight, 6-9 hours of online activities per fortnight. **Prohibitions:** EDUH1016, BIOL1903, BIOL1500, BIOL1993 **Assumed knowledge:** HSC Biology, however, students who have not completed HSC biology (or equivalent) are strongly advised to take the Biology Bridging Course (in February). **Assessment:** One 2-hour exam, assignment, group project presentation and quizzes (100%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides an introduction to human anatomy and physiology. It includes an overview of cell and tissue structures, the skeletal system, nutrition, digestion and excretion. Human Biology looks at how our bodies respond to environmental stimuli with respect to the endocrine, nervous and immune systems. After discussion of reproduction and development, it concludes with an overview of modern studies in human genetics. This unit has four main components: lectures, practicals, workshops and HB Online activities; this unit of study provides a suitable foundation for intermediate biology units of study.

Textbooks

Van Putte, C., Regan, J. and Russo, A. (2013) *Essentials of Anatomy and Physiology*, McGraw Hill. The edition comes with a custom publication of: Mader, S.S. (2006) *Human Biology*, 11th edition, McGraw Hill. (Chapters 19, 24, 26)

CHEM1611

Chemistry A (Pharmacy)

Credit points: 6 **Teacher/Coordinator:** A/Professor Adam Bridgeman **Session:** Semester 1 **Classes:** Three 1 hour lectures and one 1 hour tutorial per week; one 3 hour practical per week for 9 weeks. **Assumed knowledge:** HSC Chemistry and Mathematics **Assessment:** Theory examination (60%), laboratory work (15%), online assignments (10%) and continuous assessment quizzes (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Chemistry provides the basis for understanding molecular structures and processes, essential knowledge for many later year Pharmacy units of study. Lecture topics include some fundamental concepts, atomic theory, states and properties of matter, equations and stoichiometry, general acid-base theory, atomic structure, chemical bonding, introduction to organic chemistry, nomenclature, aliphatic chemistry, aromatic chemistry, heterocyclic compounds, isomerism, stereoisomerism, reaction mechanisms, biomolecules, amino acids and peptides, carbohydrates. Practical work is designed to enhance confidence and develop skills in the handling and manipulation of chemicals and in the observation and processing of experimental results.

Special preparative studies: Students wishing to enrol in CHEM1611 who do not have the assumed chemical knowledge are advised to consult the School of Chemistry for information about a bridging course.

Textbooks

A booklist is available from the First Year Chemistry website. <http://sydney.edu.au/science/chemistry/firstyear>

PHAR1811

Foundations of Pharmacy

Credit points: 6 **Teacher/Coordinator:** Dr Stephen Carter **Session:** Semester 1 **Classes:** 3 x lectures/wk, 1 x 2hr workshop/wk, 1 x 2hr workshop/fortnight **Assumed knowledge:** HSC Chemistry **Assessment:** Exam (50%), group projects (40%) and quiz (10%) **Practical field work:** One class will be held in

the dispensing laboratory and 4 hours of fieldwork in a community pharmacy are required **Mode of delivery:** Normal (lecture/lab/tutorial) day

Foundations of Pharmacy is a broad introduction to the discipline of pharmacy and the roles that pharmacists play in health care as well as the ideas, issues, skills and knowledge base required of a professional pharmacist. A number of topics are introduced but not covered in depth; they will be further developed in subsequent units of study and later years of the degree. Specific skills in research, critical thinking, writing and presenting are developed in the context of activities designed to orient students to their future profession. The intent is that students begin to think and behave as future members of the profession of pharmacy, and reflect upon the attitudes and beliefs that will shape their practice.

PHAR1812

Basic Pharmaceutical Sciences

Credit points: 6 **Teacher/Coordinator:** A/Prof Jane Hanrahan **Session:** Semester 1 **Classes:** 3 x lectures/wk, 1 x 2hr tutorial/wk **Corequisites:** PHAR1811, CHEM1611 **Assumed knowledge:** HSC Chemistry, 2U Mathematics **Assessment:** Written exam (60%), workshop reports (20%), quizzes (10%) and poster presentation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Basic Pharmaceutical Sciences provides an introduction to principles underlying pharmaceutical chemistry and pharmaceutics. This provides the foundations for a more detailed study of the chemical characteristics of drug molecules, dosage forms and pharmacokinetics in later years of the Bachelor of Pharmacy. The physicochemical properties of drugs are explored from a pharmaceutical perspective complemented by the study of chemistry. Modules provide an introduction to acid/base and solubility characteristics of drug molecules, drug discovery and development, dosage forms, and fundamental mathematics. Small group work in workshop sessions supports the learning of material introduced in lectures.

Textbooks

Basic Pharmaceutical Science Resource Book

CHEM1612

Chemistry B (Pharmacy)

Credit points: 6 **Teacher/Coordinator:** A/Professor Adam Bridgeman **Session:** Semester 2 **Classes:** Three 1 hour lectures and one 1 hour tutorial per week; one 3 hour practical per week for 9 weeks. **Prerequisites:** CHEM1611 Chemistry A (Pharmacy) **Assessment:** Theory examination (70%), laboratory work (15%) and continuous assessment quizzes (15%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

Chemistry provides the basis for understanding molecular structures and processes, essential knowledge for many later year Pharmacy units of study. Lecture topics include redox reactions, electrochemistry, introduction to colloids and surface chemistry, the biological periodic table, radiochemistry, chemical energetics, equilibrium theory, solution theory. Practical work is designed to enhance confidence and develop skills in the handling and manipulation of chemicals and in the observation and processing of experimental results.

Textbooks

A booklist is available from the First Year Chemistry website. <http://sydney.edu.au/science/chemistry/firstyear>

MBLG1001

Molecular Biology and Genetics (Intro)

Credit points: 6 **Teacher/Coordinator:** Dr Dale Hancock **Session:** Semester 2 **Classes:** Two 1-hour lectures per week; one 1-hour tutorial and one 4-hour practical per fortnight **Prerequisites:** Assumed knowledge: 6 credit points of Junior Biology and 6 credit points of Junior Chemistry. **Prohibitions:** MBLG1901; MBLG1991 **Assumed knowledge:** 6 credit points of Junior Biology and 6 credit points of Junior Chemistry. **Assessment:** One 2.5-hour exam (60%), Lab reports



(15%), assignments (10%), prac test (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The lectures in this unit of study introduce the "Central Dogma" of molecular biology and genetics -i.e., the molecular basis of life. The course begins with the information macromolecules in living cells: DNA, RNA and protein, and explores how their structures allow them to fulfill their various biological roles. This is followed by a review of how DNA is organised into genes leading to discussion of replication and gene expression (transcription and translation). The unit concludes with an introduction to the techniques of molecular biology and, in particular, how these techniques have led to an explosion of interest and research in Molecular Biology. The practical component complements the lectures by exposing students to experiments which explore the measurement of enzyme activity, the isolation of DNA and the 'cutting' of DNA using restriction enzymes. However, a key aim of the practicals is to give students higher level generic skills in computing, communication, criticism, data analysis/evaluation and experimental design.

Textbooks

Introduction to Molecular Biology MBLG1001 & MBLG1901, 3rd edition compiled by D. Hancock, G. Denyer and B. Lyon, Pearson ISBN 978 1 4860 0039 5

PHAR1821

Social Pharmacy

Credit points: 6 **Teacher/Coordinator:** Dr Lorraine Smith **Session:** Semester 2 **Classes:** 3 x 1hr lectures/wk, 1 x 2hr workshop/wk **Corequisites:** PHAR1811 **Assessment:** Exam (50%), reports (30%), presentations (20%) and participation (Pass/Fail) **Practical field work:** Teamwork projects **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study consists of three streams: (1) Social Pharmacy, which is designed to provide a broad perspective of health and illness, and encourage a view of the patient as a whole person. Topics include chronic illness, self-management, pain, and communications. The emphasis will be on the psychosocial processes that underpin patient health behaviours. (2) Teamwork, which introduces students to the concept of teamwork and its relevance to the health care setting. Students will play an active role in team based activities. (3) Academic Writing Skills, which provides instruction and support for developing skills for academic writing and critiquing.

Textbooks

Smith, L. (preparer) (2014) PHAR1821 Social Pharmacy

PHAR1822

Physical Pharmaceutics and Formulation A

Credit points: 6 **Teacher/Coordinator:** Dr Nial Wheate **Session:** Semester 2 **Classes:** 3 x lectures/wk, 8 x maths lectures, 5 x 1hr maths tutorials, classes will be arranged as needed **Corequisites:** PHAR1812 **Assumed knowledge:** HSC Chemistry and Mathematics **Assessment:** Exam (50%), Maths test (15%), prac/labs (35%) **Practical field work:** 5 x laboratory sessions **Mode of delivery:** Normal (lecture/lab/tutorial) day

This Unit of Study aims to facilitate an understanding of the basic concepts behind the forces and considerations when designing and using a pharmaceutical dosage form to deliver a drug. Carrying on from PHAR1812 where different dose forms and the importance of route of administration was introduced, this unit then looks at topics such as diffusion and dissolution of drugs, drug solubilisation, chemical kinetics, surface and interfacial tension, surface active materials, micelle formation and pharmaceutical complexes. With a grounding in these concepts the unit then goes on to explore different dose forms, including: liquid, ocular, intranasal, and injections. This unit of study also includes mathematical tools required for other units of study.

Textbooks

H.C. Ansel Pharmaceutical Dose Forms and Drug Delivery Systems 8th edition, Williams & Wilkins, 2005

A.T. Florence & D Attwood Physicochemical Principles of Pharmacy MacMillan 1988

Second Year

PHAR2811

Drug Discovery and Design A

Credit points: 6 **Teacher/Coordinator:** Dr W. Bret Church **Session:** Semester 1 **Classes:** 3 x lectures/wk and tutorials scheduled as required **Prerequisites:** (CHEM1611 or CHEM1102), (CHEM1612 or CHEM1101), PHAR1811, PHAR1812, MBLG1001 **Assessment:** 2.5 hr exam (65%), laboratories and workshops (25%), major quiz (10%) **Practical field work:** 3hr workshop/wk as required **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study aims to provide the background to the study of drugs and the important interactions of drugs and their targets. Learning about the molecular bases of such interactions requires discussions of the fundamental macromolecules of life: DNA, RNA and proteins and processes as replication, transcription and translation. The course therefore also covers the fundamental mechanisms of the regulation of targets, as well as fundamental molecular interactions important for both detection and diagnostic applications for drugs and metabolites. Fuel metabolism and storage is considered, including metabolic adaptation and disorders of metabolism. Students get experience with a variety of practical techniques to assist learning in the course.

Textbooks

Patrick, GL. An Introduction to Medicinal Chemistry (5th ed) Oxford University Press, 2013; Nelson, DL. and Cox, MM. Lehninger: Principles of Biochemistry (6th ed), W.H. Freeman, 2013

PHAR2812

Microbiology and Infection

Credit points: 6 **Teacher/Coordinator:** Dr Ramin Rohanzadeh **Session:** Semester 1 **Classes:** 2 x lectures/wk **Prerequisites:** BIOL1003, PHAR1811 **Assessment:** Exam & quiz (60%), mid-term quiz and practicals including workshop (40%) **Practical field work:** 8 x laboratory classes, 4 x workshops (video demonstration) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides information on the biology of micro-organisms with particular reference to the importance of micro-organisms in pharmacy and the pharmaceutical sciences. The unit also involves the application of basic microbiological principles to the production of clean and sterile pharmaceutical products in both community and hospital pharmacy, and in industrial manufacture. Topics include the comparison of the structure, function and importance of the major groups of micro-organisms; pathogenicity and epidemiology of infectious diseases (e.g., HIV); infection control measures and principles underlying treatment of infectious diseases; mechanisms of action, characteristics, and types of antibiotics and synthetic antimicrobial agents; antibiotic resistance; principles and methods of sterilisation, aspects of disinfection and preservation; concepts of good manufacturing practice and aseptic techniques. The practical component is illustrative of the lectures and focuses on techniques of handling microbial culture and identifying micro-organisms; factors affecting the microbial growth; transmission of diseases and host defence mechanisms; basic aseptic microbiological technique applicable to pharmaceutical sciences; and evaluation of different antimicrobial agents.

Textbooks

Recommended: Denyer SP, Hodges NA & Gorman SP. Hugo & Russell's Pharmaceutical Microbiology, 7th edition, Blackwell, 2004
Prescott, Harley & Kelin's Microbiology, 7th edition, McGraw-Hill, 2007

PHAR2813

Therapeutic Principles

Credit points: 6 **Teacher/Coordinator:** Dr Ingrid Gelissen **Session:** Semester 1 **Classes:** 3 - 5 lectures/wk and 2hr workshops scheduled as required. **Prerequisites:** BIOL1003, PHAR1812, PHAR1822, MBLG1001 **Assessment:** Maths quizzes (20%), Workshop attendance (10%), Therapeutic Principles quiz (15%), final examination (55%). All assessments are compulsory. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is intended to provide knowledge in a number of fundamental areas that guide and provide evidence to support the safe, effective and ethical use of medicines. These fundamental areas of knowledge start with an understanding of the relationship between

drugs interacting with target sites in the body and the effect produced (i.e. pharmacodynamic principles) and understanding the physiological and physicochemical factors that govern the movement of drugs around the body and the time course of exposure of body tissues and blood to drugs (i.e. pharmacokinetics). These principles involve developing concepts and models to explain drug activity in patients and to guide appropriate drug dosage selection. To support this, relevant mathematical principles involving calculus are introduced during this unit of study.

This unit will also explore reasons behind variability in response to medicines among different individuals. The effects of disease, other drugs, demographics and the genetic basis for variable response will be introduced. Basic pharmacogenetic principles for explaining and predicting pharmacodynamic and pharmacokinetic variability in response will be explored.

Students are also exposed to the notion that medicines may produce adverse effects (as well as beneficial ones). The mechanisms underlying adverse reactions to drugs and how these are classified are explored as are the principles for detecting and avoiding these effects.

Ultimately, many options often exist to manage illness. While the fundamental principles described above assist in understanding how individual drugs should be used, they do not alone provide knowledge to select among alternative options. This unit will introduce students to methods that are used to provide evidence of efficacy and safety of different therapeutic options and to define the place in therapy of these options. To do this, the principles that underpin evidence based medicine (including the clinical trial and pharmacoepidemiology) and the notion of levels of evidence are introduced. Exposure to these principles is intended to develop in students a basic understanding of how to critically evaluate therapeutic options. The evaluation of therapeutic options requires an understanding of statistical methods, which are also introduced during this unit of study.

PHSI2601

Physiology for Pharmacy

Credit points: 6 **Teacher/Coordinator:** Dr Bronwyn McAllan **Session:** Semester 1 **Classes:** Four 1-hour lectures per week and four 2-hour practical sessions per semester. **Prerequisites:** (CHEM1611 or CHEM1102) and (CHEM1612 or CHEM1101) and (BIOL1001 or BIOL1911 or BIOL1991 or BIOL1003 or BIOL1903 or BIOL1993) and (MBLG1001 or MBLG1901). **Assessment:** 1x2hr exam, mid-semester test, continuous assessment (100%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

Physiology for Pharmacy provides a broad basic knowledge of human structure and function. Topics covered include physiology of the nervous system and special senses, muscle physiology, and movement and consciousness. It also covers human endocrine system, reproduction, blood, heart and circulation, fluid regulation and electrolyte balance, the skin, sensory perception, gastro-intestinal function and respiration.

Textbooks

Dee Unglaub Silverthorn. Human Physiology: An Integrated Approach, Media Update: International Edition, 6th edition. 2012. ISBN: 9780321750075

PCOL2605

Pharmacology for Pharmacy

Credit points: 6 **Teacher/Coordinator:** Dr Elena Bagley **Session:** Semester 2 **Classes:** 3 lect/wk, 12 hours prac/workshop/tutorial **Prerequisites:** (CHEM1611 or CHEM1102) and (CHEM1612 or CHEM1101) and (BIOL1003 or BIOL1903 or BIOL1993) and (MBLG1001 or MBLG1901). **Corequisites:** PHSI2601 **Assessment:** 1x2hr exam (70%), continuous assessment (lab reports or assignments) (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides a basic understanding of drug actions related to physiological and pathological functions. It covers areas of drug-receptor interactions, pharmacodynamics and drug treatment of various physiological systems (e.g. autonomic nervous system, central nervous system, cardiovascular, respiratory and endocrine), management of pain and complementary drug therapy.

Textbooks

Rang & Dale's Pharmacology, 7th edn; Drs. Humphrey P. Rang, Maureen M. Dale, James M. Ritter, Rod Flower, and Graeme Henderson (Churchill Livingstone).

PHAR2821

Drug Discovery and Design B

Credit points: 6 **Teacher/Coordinator:** A/Prof Colin C Duke **Session:** Semester 2 **Classes:** 3 x lectures/wk **Corequisites:** PHAR2811 and PCOL2605 **Assessment:** 2hr exam (55%), workshops and quizzes (45%) **Practical field work:** 23 hrs of tutorials and workshops **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study covers drug design; physicochemical properties of drugs and how this determines the interactions of small molecules (drugs) with biological macromolecules (enzymes and receptors). All stages in the process of drug design and development will be investigated, including computational drug design and the required mathematics for computation and statistical treatment; role of stereochemistry in drug action, structure-activity relationships and molecular modelling; drug metabolism, bioactivation and inactivation; advanced analytical methods for the identification of drugs, their metabolites and degradation products; sources of drugs; discovery of new small molecules as leads for drug development. Workshops consist of the Stereochemistry/Ligand-Based Drug Design molecular modelling workshop, drug action workshop and drug metabolism problem-based learning workshop.

Textbooks

G L Patrick (2009) An Introduction to Medicinal Chemistry, 4th Edition, Oxford University Press

PHAR2822

Pharmacy Practice

Credit points: 6 **Teacher/Coordinator:** Dr Carl Schneider **Session:** Semester 2 **Classes:** 3 x lectures/wk, 1.5 hr tutorial/wk **Prerequisites:** PHAR1811 and PHAR1821 **Corequisites:** PHSI2601 and PCOL2605 **Assessment:** Written exam (60%), oral assessment (30%), and Reflective Ability Clinical Assessment (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study explores disease states and management options, including non-pharmacological recommendations. It focuses on methods of delivering patient care both on an individual level and also to the wider community through health promotion. This course is fundamental to clinical pharmacy in all areas of practice. Core areas covered include respiratory, cardiovascular, infection and primary care (ear, eye, pain etc) as well as the key elements associated with healthy living.

Textbooks

Community Pharmacy. Symptoms, diagnosis and treatment. Rutter P and Newby D. Churchill Livingstone Elsevier Publishing, 2013.

Communication Skills in Pharmacy Practice. W.N. Tindall et al. 4rd Edition. Lea & Febiger 2007

Clinical Pharmacy and Therapeutics. Walker, R. & Whittlesea, C. editors. 5th Edition Edinburgh: Churchill Livingstone, 2011.

PHAR2823

Physical Pharmaceutics and Formulation B

Credit points: 6 **Teacher/Coordinator:** Dr Wojciech Chrzanowski **Session:** Semester 2 **Classes:** 3 x lectures/wk **Prerequisites:** (CHEM1611 or CHEM1102), (CHEM1612 or CHEM1101), PHAR1812, PHAR1822 **Corequisites:** PHAR2812 **Assessment:** Final exam (60%), minor exam (10%) practical exam (30%) **Practical field work:** Laboratory work of 4hrs/week for 2 consecutive weeks **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study builds on the material presented in Physical Pharmaceutics and Formulation A. The topics covered in this unit include: solid dose forms and particle science, rheology; dispersion dose forms including suspensions, colloidal dispersions, and emulsions; topical dose forms and semisolids; inhalation pharmaceutical aerosols; protein and peptide drugs and formulations; rectal products and novel drug delivery technologies. Aspects pertaining to the stability of dose forms are also presented in this unit. Practical activities relate to the preparation, quality control and quality assurance of a marketed solid dosage form.

Textbooks

Aulton M.E. Pharmaceutics: The Science of Dosage Form Design, (7nd edn) Churchill Livingstone, A.T. Florence & D Attwood Physicochemical Principles of Pharmacy, MacMillan 1988, Pharmaceutical Press 4th Edition 2006

Third Year

PHAR3816

Cardiovascular and Renal

Credit points: 5 **Teacher/Coordinator:** Dr Claire O'Reilly **Session:** Semester 1a **Classes:** An average of 6 hrs of lectures, 2 hrs of tutorials and 2 hrs experiential placement/week. **Prerequisites:** All first and second year units of study. **Corequisites:** PHAR3812 or PHAR3817, PHAR3813 or PHAR3818, PHAR3814 or PHAR3819 **Assessment:** Tutorial participation and presentations (10%), OSCE (20%) and final exam (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will cover the therapeutics of cardiovascular and renal disorders including the pharmaceutical sciences that underpin such drug therapies. This unit will also include the epidemiology, pathophysiology and clinical features of cardiovascular and renal disorders. Through the use of case-based learning, students will participate in the interpretation, application and dissemination of pharmaceutical and pharmacotherapeutic concepts and knowledge. On completion of this unit of study students will be able to apply an understanding of the pharmaceutical sciences to optimising the drug and non-drug therapy of patients with cardiovascular and renal disorders. Interprofessional communication and the application of specialist knowledge to implementing pharmacist cognitive services such as clinical interventions and/or medication management review will also be explored. Students will become familiar with drug information software and a number of computerised drug information databases. Role-plays will be used to develop students' communication skills for interaction between pharmacists and their clients (patients, doctors, other health professionals). This unit of study is in parallel to experiential placements.

PHAR3817

Respiratory

Credit points: 5 **Teacher/Coordinator:** Prof Alaina Ammit **Session:** Semester 1a **Classes:** An average of 6 hrs of lectures, 2 hrs of tutorials and 2 hrs experiential placement/week. **Prerequisites:** All first and second year units of study. **Corequisites:** (PHAR3811 or PHAR3816), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819) **Assessment:** Tutorial participation and presentations (10%), OSCE (20%) and final exam (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will cover the therapeutics of respiratory disorders including the pharmaceutical sciences that underpin such drug therapies. This unit will also include the epidemiology, pathophysiology and clinical features of respiratory disorders. Through the use of case-based learning, students will participate in the interpretation, application and dissemination of pharmaceutical and pharmacotherapeutic concepts and knowledge. On completion of this unit of study students will be able to apply an understanding of the pharmaceutical sciences to optimising the drug and non-drug therapy of patients with respiratory disorders. Interprofessional communication and the application of specialist knowledge to implementing pharmacist cognitive services such as clinical interventions and/or medication management review will also be explored. Students will become familiar with drug information software and a number of computerised drug information databases. Role-plays will be used to develop students' communication skills for interaction between pharmacists and their clients (patients, doctors, other health professionals). This unit of study is in parallel to experiential placements.

PHAR3818

Endocrine, Diabetes and Reproductive

Credit points: 5 **Teacher/Coordinator:** Dr Rebecca Roubin **Session:** Semester 1b **Classes:** An average of 6 hrs of lectures, 2 hrs of tutorials and 2 hrs experiential placement/week. **Prerequisites:** All first and second year units of study. **Corequisites:** (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3814 or PHAR3819) **Assessment:** Tutorial participation and presentations (10%), OSCE (20%) and final exam (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will cover the therapeutics of endocrine, diabetes and reproductive disorders including the pharmaceutical sciences that underpin such drug therapies. This unit will also include the epidemiology, pathophysiology and clinical features of endocrine,

diabetes and reproductive disorders. Through the use of case-based learning, students will participate in the interpretation, application and dissemination of pharmaceutical and pharmacotherapeutic concepts and knowledge. On completion of this unit of study students will be able to apply an understanding of the pharmaceutical sciences to optimising the drug and non-drug therapy of patients with endocrine, diabetes and reproductive disorders. Interprofessional communication and the application of specialist knowledge to implementing pharmacist cognitive services such as clinical interventions and/or medication management review will also be explored. Students will become familiar with drug information software and a number of computerised drug information databases. Role-plays will be used to develop students' communication skills for interaction between pharmacists and their clients (patients, doctors, other health professionals). This unit of study is in parallel to experiential placements.

PHAR3819

Gastrointestinal

Credit points: 5 **Teacher/Coordinator:** Dr Dong Fu **Session:** Semester 1b **Classes:** An average of 6 hrs of lectures, 2 hrs of tutorials and 2 hrs experiential placement/week. **Prerequisites:** All first and second year units of study. **Corequisites:** (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818) **Assessment:** Tutorial participation and presentations (10%), OSCE (20%) and final exam (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will cover the therapeutics of gastrointestinal disorders including the pharmaceutical sciences that underpin such drug therapies. This unit will also include the epidemiology, pathophysiology and clinical features of gastrointestinal disorders. Through the use of case-based learning, students will participate in the interpretation, application and dissemination of pharmaceutical and pharmacotherapeutic concepts and knowledge. On completion of this unit of study students will be able to apply an understanding of the pharmaceutical sciences to optimising the drug and non-drug therapy of patients with gastrointestinal disorders. Interprofessional communication and the application of specialist knowledge to implementing pharmacist cognitive services such as clinical interventions and/or medication management review will also be explored. Students will become familiar with drug information software and a number of computerised drug information. Role-plays will be used to develop students' communication skills for interaction between pharmacists and their clients (patients, doctors, other health professionals). This unit of study is in parallel to experiential placements.

PHAR3826

Musculoskeletal, Dermatological & Senses

Credit points: 5 **Teacher/Coordinator:** Dr Rebekah Moles **Session:** Semester 2a **Classes:** An average of 6 hrs of lectures, 2 hrs of tutorials and 2 hrs experiential placement/week. **Prerequisites:** All first and second year units of study. **Corequisites:** (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819), (PHAR3821 or PHAR3828), (PHAR3822 or PHAR3829), (PHAR3824 or PHAR3827) **Assessment:** Tutorial participation and presentations (10%), OSCE (20%) and final exam (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will cover the therapeutics of musculoskeletal, dermatological and special senses including the pharmaceutical sciences that underpin such drug therapies. This unit will also include the epidemiology, pathophysiology and clinical features of musculoskeletal, dermatological and special senses disorders. Through the use of case-based learning, students will participate in the interpretation, application and dissemination of pharmaceutical and pharmacotherapeutic concepts and knowledge. On completion of this unit of study students will be able to apply an understanding of the pharmaceutical sciences to optimising the drug and non-drug therapy of patients with musculoskeletal, dermatological and special senses disorders. Interprofessional communication and the application of specialist knowledge to implementing pharmacist cognitive services such as clinical interventions and/or medication management review will also be explored. Students will become familiar with drug information software and a number of computerised drug information databases. Role-plays will be used to develop students' communication

skills for interaction between pharmacists and their clients (patients, doctors, other health professionals). This unit of study is in parallel to experiential placements.

PHAR3827

Oncology and Immunology

Credit points: 5 **Teacher/Coordinator:** Dr Nial Wheate **Session:** Semester 2a **Classes:** An average of 6 hrs of lectures, 2 hrs of tutorials and 2 hrs experiential placement/week. **Prerequisites:** All first and second year units of study. **Corequisites:** (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819), (PHAR3821 or PHAR3828), (PHAR3822 or PHAR3829), (PHAR3823 or PHAR3826) **Assessment:** Tutorial participation and presentations (10%), OSCE (20%) and final exam (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will cover the therapeutics of oncology and immunology including the pharmaceutical sciences that underpin such drug therapies. This unit will also include the epidemiology, pathophysiology and clinical features of oncology and immunology disorders. Through the use of case-based learning, students will participate in the interpretation, application and dissemination of pharmaceutical and pharmacotherapeutic concepts and knowledge. On completion of this unit of study students will be able to apply an understanding of the pharmaceutical sciences to optimising the drug and non-drug therapy of patients with oncology and immunology disorders. Interprofessional communication and the application of specialist knowledge to implementing pharmacist cognitive services such as clinical interventions and/or medication management review will also be explored. Students will become familiar with drug information software and a number of computerised drug information databases. Role-plays will be used to develop students' communication skills for interaction between pharmacists and their clients (patients, doctors, other health professionals). This unit of study is in parallel to experiential placements.

PHAR3828

Mental Health

Credit points: 5 **Teacher/Coordinator:** A/Prof Timothy Chen **Session:** Semester 2b **Classes:** An average of 6 hrs of lectures, 2 hrs of tutorials and 2 hrs experiential placement/week. **Prerequisites:** All first and second year units of study. **Corequisites:** (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819), (PHAR3822 or PHAR3829), (PHAR3823 or PHAR3826), (PHAR3824 or PHAR3827) **Assessment:** Tutorial participation and presentations (10%), OSCE (20%) and final exam (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will cover the therapeutics of mental health disorders including the pharmaceutical sciences that underpin such drug therapies. This unit will also include the epidemiology, pathophysiology and clinical features of mental health disorders. Through the use of case-based learning, students will participate in the interpretation, application and dissemination of pharmaceutical and pharmacotherapeutic concepts and knowledge. On completion of this unit of study students will be able to apply an understanding of the pharmaceutical sciences to optimising the drug and non-drug therapy of patients with mental health disorders. Interprofessional communication and the application of specialist knowledge to implementing pharmacist cognitive services such as clinical interventions and/or medication management review will also be explored. Students will become familiar with drug information software and a number of computerised drug information databases. Role-plays will be used to develop students' communication skills for interaction between pharmacists and their clients (patients, doctors, other health professionals). This unit of study is in parallel to experiential placements.

Textbooks

Recommended: The Maudsley Prescribing Guidelines 11th ed, Therapeutic Guidelines Psychotropic version 7 2013

PHAR3829

Neurology

Credit points: 5 **Teacher/Coordinator:** Prof Mary Collins **Session:** Semester 2b **Classes:** An average of 6 hrs of lectures, 2 hrs of tutorials and 2 hrs experiential placement/week. **Prerequisites:** All first and second year units of study. **Corequisites:** (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817),

(PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819), (PHAR3821 or PHAR3828), (PHAR3823 or PHAR3826), (PHAR3824 or PHAR3827) **Assessment:** Tutorial participation and presentations (10%), OSCE (20%) and final exam (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will cover the therapeutics of neurological disorders including the pharmaceutical sciences that underpin such drug therapies. This unit will also include the epidemiology, pathophysiology and clinical features of neurological disorders. Through the use of case-based learning, students will participate in the interpretation, application and dissemination of pharmaceutical and pharmacotherapeutic concepts and knowledge. On completion of this unit of study students will be able to apply an understanding of the pharmaceutical sciences to optimising the drug and non-drug therapy of patients with neurological disorders. Interprofessional communication and the application of specialist knowledge to implementing pharmacist cognitive services such as clinical interventions and/or medication management review will also be explored. Students will become familiar with drug information software and a number of computerised drug information databases. Role-plays will be used to develop students' communication skills for interaction between pharmacists and their clients (patients, doctors, other health professionals). This unit of study is in parallel to experiential placements.

PHAR3815

Pharmaceutical Skills and Dispensing A

Credit points: 4 **Teacher/Coordinator:** A/Prof Jane Hanrahan **Session:** Semester 1 **Classes:** Up to 10 hrs of workshops and 8 lectures/semester **Prerequisites:** All first and second year units of study. **Corequisites:** (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819) **Assessment:** Written report for Drug Profile practicals (50%), Dispensing Practical exam (30%), Preparation of Dispensing products (20%) **Practical field work:** 4 x 4hr practicals for Pharmaceutical skills and 5 x 3hr practicals for Dispensing **Mode of delivery:** Normal (lecture/lab/tutorial) day

The Pharmaceutical Skills component consists of Drug Profile Practical. Students will gain a deeper understanding of the physicochemical properties of drugs, methods of analysing drugs and how the physicochemical properties determine the pharmacology.

The Dispensing component gives an introduction to Dispensing practice and to the extemporaneous preparation of pharmaceutical formulations. Students will develop attitudes, knowledge and skills through practise in interpreting the prescription, accuracy in dispensing, methodical approaches to preparing and dispensing prescribed products including preparing, selecting or using appropriate materials, equipment, labels and containers, documentation of dispensing procedures, effect of ingredients and methods used on the quality of pharmaceutical products, quality control and quality assurance procedures including checking for errors in all aspects of the dispensing process.

Textbooks

Current copies Dispensing Workbook, Dispensing Manual and APF

PHAR3825

Pharmaceutical Skills and Dispensing B

Credit points: 4 **Teacher/Coordinator:** A/Prof Jane Hanrahan **Session:** Semester 2 **Classes:** Up to 15 hrs of workshops and 8 lectures/semester **Prerequisites:** All first and second year units of study. **Corequisites:** (PHAR3811 or PHAR3816), (PHAR3812 or PHAR3817), (PHAR3813 or PHAR3818), (PHAR3814 or PHAR3819), (PHAR3821 or PHAR3828), (PHAR3822 or PHAR3829), (PHAR3823 or PHAR3826), (PHAR3824 or PHAR3827) **Assessment:** Herbal Medicine workshop presentation (50%), Practical Dispensing exam (25%), Written Dispensing exam (25%) **Practical field work:** 5 x 3hr practicals for Dispensing **Mode of delivery:** Normal (lecture/lab/tutorial) day

The Pharmaceutical Skills component consists of Herbal Medicine workshops. Students will gain a deeper understanding of the physicochemical properties of herbal medicines, methods of analysing herbal medicines and how the physicochemical properties determine the pharmacology.

The Dispensing component provides students the opportunity to develop knowledge, skills and processes to prepare and dispense a variety of pharmaceutical products and critically assess them for

quality. This component will focus on processes in dispensing to minimise the making of errors and maximise the detection of errors. It will also begin to develop principles for understanding issues in patient safety.

Textbooks

Current issues of Dispensing Workbook, Dispensing Manual and APF

Fourth Year

PHAR4811

Pharmacotherapeutics

Credit points: 6 **Teacher/Coordinator:** Dr Bandana Saini **Session:** Semester 1 **Classes:** 32 x 1hr lectures, 8 x 3hr small group learning and up to 18hrs of self directed learning **Prerequisites:** All third year units of study. **Corequisites:** PHAR4812, PHAR4814, PHAR4823 **Assessment:** Final exam (40%), group portfolios (20%), workshop participation (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study will focus on developing students' understanding of the use of medicines and related appropriate health measures in special patient populations (e.g. paediatrics). The unit of study will draw upon concepts in clinical pharmacy, pharmacokinetics and clinical practice.

Through a series of workshops, students will undertake activities including case-study analysis, role-plays, problem solving and case presentations. These activities will help students explore information sources for drug use and integrate knowledge of clinical indices, laboratory data, medication use history and demographic information to optimise drug therapy in response to the needs of individual patients. Students will gain 'hands-on' practice in the provision of patient-specific medicine use education and explore key issues concerning the maintenance of vigilance for medicines use specific to certain population groups.

Textbooks

Hughes J, Tenni P and Peterson G. Aged Care Primer. Available through the Pharmaceutical Society of Australia. Children's Dosing Companion - Australian Medicines Handbook (2014). Up to date research articles and references provided weekly.

Paediatrics Manual. The Children's Hospital at Westmead Handbook. 2nd Edition.

Hughes et al. Use of Laboratory Test Data. A Process Guide and Reference for Healthcare Professionals. Available through the Pharmaceutical Society of Australia.

PHAR4812

Integrated Dispensing Practice

Credit points: 6 **Teacher/Coordinator:** A/Prof Parisa Aslani **Session:** Semester 1 **Classes:** 1 x 2hr lec/wk (total approx 8hrs) 1 x 2hr workshop/wk and 1 x 2hr laboratory class /wk (total approx 32hrs/sem), approx 16hrs on-line activities **Prerequisites:** All third year units of study. **Corequisites:** PHAR4811, PHAR4814, PHAR4823 **Assessment:** Students must prove competency in each component of this unit of study (practical exams, continuous weekly assessments, dosage calculations assignment, portfolio presentation). This unit of study is Pass/Fail. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Integrated Dispensing Practice links together the skills and knowledge that students have developed in dispensing and pharmacy practice. The emphasis is on clinical practice and develops the theme that dispensing is not a single event but a process which draws on skills and knowledge from a variety of areas of pharmacy practice, including communication with the patient and prescriber. This is achieved using a simulated practice environment in which students learn to integrate the skills they have developed in dose form preparation with their clinical skills, forensic and administrative requirements (including the use of computer-based dispensing programs), as well as the professional aspects of pharmacy in delivering a patient-centred care.

Textbooks

Australian Medicines Handbook (2012 or 2013) and Australian Pharmaceutical Formulary (Ed 21 or 22).

PHAR4823

Pharmacy Services and Public Health

Credit points: 6 **Teacher/Coordinator:** Prof Ines Krass **Session:** Semester 1 **Classes:** 34 x 1hr lectures, 10 x 3hr workshops and up to 25hrs of self directed learning **Prerequisites:** All third year units of study **Corequisites:** PHAR4811,

PHAR4812, PHAR4814 **Assessment:** Final exam (50%), group assignment/presentation (30%),workshop participation (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will focus on developing students' understanding of the Australian Health Care System, health policy and regulation affecting health in Australia and internationally and the role of pharmacy in public health/ health promotion. We will develop students' skills in identifying, accessing and interpreting relevant policy, regulation and literature. Topics which underpin understanding of public health including, epidemiology/pharmacoepidemiology and pharmacoconomics will also be addressed. Through workshops and assignments, students will be given the opportunity to integrate their learning and apply this knowledge to address population health care problems with a special emphasis on achieving the quality, safety and judicious use of medicines in health care.

Textbooks

Pharmaceutical Public Health

PHAR4814

Pharmacy Management I

Credit points: 6 **Session:** Semester 1 **Classes:** 24 hrs of lectures, 1 x 2hr tutorial/wk, group work **Prerequisites:** All third year units of study **Corequisites:** PHAR4811, PHAR4812, PHAR4823 **Assessment:** Group Assignment and Peer Review (40%), exams (50%), class discussion and participation (10%). Each assessment task must be passed to pass this unit of study. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study focuses on the business skills necessary to manage either a community or hospital pharmacy. It focuses on three specific essential topics; accounting and financial management, human resource management and marketing. Material in each topic is managerially relevant and applied to the pharmacy context.

Textbooks

Pharmacy Management Custom Textbook, Compiled by J Bussing, PEARSON, 2012

PHAR4813

Novel Therapeutics

Credit points: 6 **Teacher/Coordinator:** A/Prof Thomas Grewal **Session:** Semester 2 **Classes:** Up to 30hrs of lectures, 8 x 3hr workshops and up to 40hrs of self directed learning and group work **Prerequisites:** PHAR4811 and PHAR4812 and PHAR4823 and PHAR4814 **Corequisites:** Corequisites: PHAR4821, PHAR4822 **Assessment:** Workshops (20%), written assignment (30%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study aims to expose students to emerging therapeutic and diagnostic biotechnologies. The unit expands on second and third year pharmaceutical science units of study by exploring novel and developing biotechnologies, such as gene therapy, vaccines, DNA arrays, cell therapies, novel diagnostic methods, new drug targets and drugs/therapies as well as clinical development processes. Sources of information for new biotechnology developments will be explored and practical exercises in interpreting and translating this information to patients and other health professionals will be provided. This unit of study will foster necessary skills to prepare pharmacists for their evolving roles associated with the choice, application and monitoring of new biotherapies. The exercises are designed to support the development of generic collaborative skills necessary for project work, such as planning and project management, conflict resolution and written and oral communication skills.

Textbooks

Foye W.O et. al. Principles of Medicinal Chemistry (5th Ed), Williams and Wilkins (2002) Shargel L & Yu ABC Applied Biopharmaceutics and Pharmacokinetics (1999) Burton, Evans

PHAR4821

Professional Practice

Credit points: 12 **Teacher/Coordinator:** Dr Rebekah Moles **Session:** Semester 2 **Classes:** 36hrs of lectures, 27hrs of tutorials, 33hrs of workshops and up to 49hrs of self directed learning **Prerequisites:** PHAR4811, PHAR4812, PHAR4823, PHAR4814 **Corequisites:** PHAR4822, PHAR4813 **Assessment:** Tutorial participation and communication (20%), exam(s) (50%), ethics (10%), projects (20%) and satisfactory performance in the forensic exam. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study consolidates previous units from year one to semester 1 of year four of the curriculum, through the presentation and solving of clinical and ethical problems. It continues a focus on knowledge consolidation, therapeutics, application of knowledge, continuing professional education practices, pharmacy workplace and disease state management within a self-directed learning environment (problem based learning). The unit consists of lectures, hands-on workshop sessions, on-line learning and problem-based tutorial classes.

Textbooks

Pharmacotherapy. A Pathophysiologic Approach. Dipiro, 7th Edition (2008). Pharmacy and Poisons legislation is required but is made available in a specific format for the unit.

PHAR4822

Clinical Placement

Credit points: 6 **Teacher/Coordinator:** Prof Jo-anne Brien **Session:** Semester 2 **Classes:** Four weeks or equivalent (140 hours) of clinical placement **Prerequisites:** PHAR4811, PHAR4812, PHAR4823, PHAR4814 **Corequisites:** PHAR4821, PHAR4813 **Assessment:** Preceptor assessment (50%), portfolio (40%), reflective diary (10%). All assessment tasks must be completed. Satisfactory performance in all areas of this unit of study is required. **Practical field work:** Placement at hosting site: 4 x 35 hrs/wk **Mode of delivery:** Clinical experience

This unit of study is entirely comprised of clinical and experiential placements. These placements will be undertaken in settings of professional practice: in community pharmacies, hospital pharmacies and clinics and other professional organisation sites. The placements may include rural as well as metropolitan sites, and involve the public and private health sector. Students will document activities undertaken at the practice site using the portfolio, under the guidance and supervision of the preceptor or supervising pharmacist. The portfolio is a guide to professional activities and the Pharmacist Competencies Framework. A reflective diary will be included in the assessment. This unit of study provides the opportunity for students to appreciate the health care setting, professional practice issues, and to apply and consolidate their knowledge within the context of the professional placement setting.

Fourth Year Honours

PHAR4811

Pharmacotherapeutics

Credit points: 6 **Teacher/Coordinator:** Dr Bandana Saini **Session:** Semester 1 **Classes:** 32 x 1hr lectures, 8 x 3hr small group learning and up to 18hrs of self directed learning **Prerequisites:** All third year units of study. **Corequisites:** PHAR4812, PHAR4814, PHAR4823 **Assessment:** Final exam (40%), group portfolios (20%), workshop participation (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study will focus on developing students' understanding of the use of medicines and related appropriate health measures in special patient populations (e.g. paediatrics). The unit of study will draw upon concepts in clinical pharmacy, pharmacokinetics and clinical practice.

Through a series of workshops, students will undertake activities including case-study analysis, role-plays, problem solving and case presentations. These activities will help students explore information sources for drug use and integrate knowledge of clinical indices, laboratory data, medication use history and demographic information to optimise drug therapy in response to the needs of individual patients. Students will gain 'hands-on' practice in the provision of patient-specific medicine use education and explore key issues concerning the maintenance of vigilance for medicines use specific to certain population groups.

Textbooks

Hughes J, Tenni P and Peterson G. Aged Care Primer. Available through the Pharmaceutical Society of Australia. Children's Dosing Companion - Australian Medicines Handbook (2014). Up to date research articles and references provided weekly. Paediatrics Manual. The Children's Hospital at Westmead Handbook. 2nd Edition.

Hughes et al. Use of Laboratory Test Data. A Process Guide and Reference for Healthcare Professionals. Available through the Pharmaceutical Society of Australia.

PHAR4812

Integrated Dispensing Practice

Credit points: 6 **Teacher/Coordinator:** A/Prof Parisa Aslani **Session:** Semester 1 **Classes:** 1 x 2hr lec/wk (total approx 8hrs) 1 x 2hr workshop/wk and 1 x 2hr laboratory class/wk (total approx 32hrs/sem), approx 16hrs on-line activities **Prerequisites:** All third year units of study. **Corequisites:** PHAR4811, PHAR4814, PHAR4823 **Assessment:** Students must prove competency in each component of this unit of study (practical exams, continuous weekly assessments, dosage calculations assignment, portfolio presentation). This unit of study is Pass/Fail. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Integrated Dispensing Practice links together the skills and knowledge that students have developed in dispensing and pharmacy practice. The emphasis is on clinical practice and develops the theme that dispensing is not a single event but a process which draws on skills and knowledge from a variety of areas of pharmacy practice, including communication with the patient and prescriber. This is achieved using a simulated practice environment in which students learn to integrate the skills they have developed in dose form preparation with their clinical skills, forensic and administrative requirements (including the use of computer-based dispensing programs), as well as the professional aspects of pharmacy in delivering a patient-centred care.

Textbooks

Australian Medicines Handbook (2012 or 2013) and Australian Pharmaceutical Formulary (Ed 21 or 22).

PHAR4815

Research Methods

Credit points: 6 **Teacher/Coordinator:** Dr Fanfan Zhou **Session:** Semester 1 **Classes:** Data management (approx 18hrs); literature searching and appraisal, and scientific presentations (approx 8hrs); research methods (approx 39hrs); journal club and seminars (approx 12hrs) and research project. **Prerequisites:** All third year units of study. **Corequisites:** PHAR4811, PHAR4812, PHAR4823 **Assessment:** Data management assignment (15%), literature review search strategy and outline (5%), oral scientific presentation (5%), literature review manuscript (50%), research protocol defence (20%), and seminar diary (5%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

Research Methods is a component of the Honours elective, and is designed to extend students' knowledge and skills in research methods and problem solving, as well as oral and written scientific communication. The workshop and seminar series in the unit will equip students with the advanced research skills needed for their research projects. Research projects will be commenced in Semester 1 and completed in Semester 2 under the direct supervision of one or a group of academic staff members.

Textbooks

Those recommended by individual lecturers and research project supervisors.

PHAR4823

Pharmacy Services and Public Health

Credit points: 6 **Teacher/Coordinator:** Prof Ines Krass **Session:** Semester 1 **Classes:** 34 x 1hr lectures, 10 x 3hr workshops and up to 25hrs of self directed learning **Prerequisites:** All third year units of study. **Corequisites:** PHAR4811, PHAR4812, PHAR4814 **Assessment:** Final exam (50%), group assignment/presentation (30%), workshop participation (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will focus on developing students' understanding of the Australian Health Care System, health policy and regulation affecting health in Australia and internationally and the role of pharmacy in public health/ health promotion. We will develop students' skills in identifying, accessing and interpreting relevant policy, regulation and literature. Topics which underpin understanding of public health including, epidemiology/pharmacoepidemiology and pharmacoconomics will also be addressed. Through workshops and assignments, students will be given the opportunity to integrate their learning and apply this knowledge to address population health care problems with a special emphasis on achieving the quality, safety and judicious use of medicines in health care.

Textbooks

Pharmaceutical Public Health

PHAR4830

Honours

Credit points: 24 **Teacher/Coordinator:** Dr Fanfan Zhou **Session:** Semester 2 **Classes:** Journal club and seminars (approx 22 hours in total) and research project (approx 24-30 hours per week) and monthly meeting (approx 4hrs). Forensic: Lectures 8hrs **Prerequisites:** PHAR4811, PHAR4812, PHAR4823, PHAR4815 **Assessment:** Research paper manuscript (50%), oral presentation of research project (20%), supervisor mark for overall research performance (20%) and seminar diary (10%). Satisfactory performance in forensic examination. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is designed to extend the Pharmacy undergraduate's knowledge and skills in research practice and problem solving, and written and oral scientific communication acquired in PHAR4815. Honours provides an important basis for those who may wish to branch into specialised areas and will be particularly useful for those seeking employment in industry, government, hospital laboratories, research institutions and also for those considering continuation to postgraduate studies.

The workshop/tutorial/seminar component of the course will assist in the development of advanced research skills and will complement the research project. A final research presentation and report describing research results and conclusions is to be conducted at the end of the semester.

Textbooks

Those recommended by individual lecturers and research project supervisors. Pharmacy and Poisons legislation is required but is made available in a specific format for the unit.

Fourth Year Rural Major

PHAR4811

Pharmacotherapeutics

Credit points: 6 **Teacher/Coordinator:** Dr Bandana Saini **Session:** Semester 1 **Classes:** 32 x 1hr lectures, 8 x 3hr small group learning and up to 18hrs of self directed learning **Prerequisites:** All third year units of study. **Corequisites:** PHAR4812, PHAR4814, PHAR4823 **Assessment:** Final exam (40%), group portfolios (20%), workshop participation (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study will focus on developing students' understanding of the use of medicines and related appropriate health measures in special patient populations (e.g. paediatrics). The unit of study will draw upon concepts in clinical pharmacy, pharmacokinetics and clinical practice.

Through a series of workshops, students will undertake activities including case-study analysis, role-plays, problem solving and case presentations. These activities will help students explore information sources for drug use and integrate knowledge of clinical indices, laboratory data, medication use history and demographic information to optimise drug therapy in response to the needs of individual patients. Students will gain 'hands-on' practice in the provision of patient-specific medicine use education and explore key issues concerning the maintenance of vigilance for medicines use specific to certain population groups.

Textbooks

Hughes J, Tenni P and Peterson G. Aged Care Primer. Available through the Pharmaceutical Society of Australia. Children's Dosing Companion - Australian Medicines Handbook (2014). Up to date research articles and references provided weekly. Paediatrics Manual. The Children's Hospital at Westmead Handbook. 2nd Edition.

Hughes et al. Use of Laboratory Test Data. A Process Guide and Reference for Healthcare Professionals. Available through the Pharmaceutical Society of Australia.

PHAR4812

Integrated Dispensing Practice

Credit points: 6 **Teacher/Coordinator:** A/Prof Parisa Aslani **Session:** Semester 1 **Classes:** 1 x 2hr lec/wk (total approx 8hrs) 1 x 2hr workshop/wk and 1 x 2hr laboratory class /wk (total approx 32hrs/sem), approx 16hrs on-line activities **Prerequisites:** All third year units of study. **Corequisites:** PHAR4811, PHAR4814, PHAR4823 **Assessment:** Students must prove competency in each component of this unit of study (practical exams, continuous weekly assessments, dosage calculations assignment, portfolio presentation). This unit of study is Pass/Fail. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Integrated Dispensing Practice links together the skills and knowledge that students have developed in dispensing and pharmacy practice. The emphasis is on clinical practice and develops the theme that dispensing is not a single event but a process which draws on skills and knowledge from a variety of areas of pharmacy practice, including communication with the patient and prescriber. This is achieved using a simulated practice environment in which students learn to integrate the skills they have developed in dose form preparation with their clinical skills, forensic and administrative requirements (including the use of computer-based dispensing programs), as well as the professional aspects of pharmacy in delivering a patient-centred care.

Textbooks

Australian Medicines Handbook (2012 or 2013) and Australian Pharmaceutical Formulary (Ed 21 or 22).

PHAR4814

Pharmacy Management I

Credit points: 6 **Session:** Semester 1 **Classes:** 24 hrs of lectures, 1 x 2hr tutorial/wk, group work **Prerequisites:** All third year units of study **Corequisites:** PHAR4811, PHAR4812, PHAR4823 **Assessment:** Group Assignment and Peer Review (40%), exams (50%), class discussion and participation (10%). Each assessment task must be passed to pass this unit of study. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study focuses on the business skills necessary to manage either a community or hospital pharmacy. It focuses on three specific essential topics; accounting and financial management, human resource management and marketing. Material in each topic is managerially relevant and applied to the pharmacy context.

Textbooks

Pharmacy Management Custom Textbook, Compiled by J Bussing, PEARSON, 2012

PHAR4823

Pharmacy Services and Public Health

Credit points: 6 **Teacher/Coordinator:** Prof Ines Krass **Session:** Semester 1 **Classes:** 34 x 1hr lectures, 10 x 3hr workshops and up to 25hrs of self directed learning **Prerequisites:** All third year units of study **Corequisites:** PHAR4811, PHAR4812, PHAR4814 **Assessment:** Final exam (50%), group assignment/presentation (30%), workshop participation (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will focus on developing students' understanding of the Australian Health Care System, health policy and regulation affecting health in Australia and internationally and the role of pharmacy in public health/ health promotion. We will develop students' skills in identifying, accessing and interpreting relevant policy, regulation and literature. Topics which underpin understanding of public health including, epidemiology/pharmacoepidemiology and pharmacoconomics will also be addressed. Through workshops and assignments, students will be given the opportunity to integrate their learning and apply this knowledge to address population health care problems with a special emphasis on achieving the quality, safety and judicious use of medicines in health care.

Textbooks

Pharmaceutical Public Health

PHAR4824

Aboriginal and Rural Health

Credit points: 12 **Session:** Semester 2 **Classes:** 21 hrs of lectures, 10 x 2hr tutorials, 3hr workshop. **Prerequisites:** PHAR4811, PHAR4812, PHAR4813, PHAR4814 **Corequisites:** PHAR4825, PHAR4826 **Assessment:** Group assignment/presentation (30%), examination (50%), experiential logbook (20%), satisfactory performance in the forensic examination. **Practical field work:** 3 x 30 hr weeks **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces students to health issues in rural and remote communities which may result from the social, environmental and political underpinnings of these communities. Students will be made aware of diseases which are more prevalent in rural than metropolitan settings. Issues relating to cultural diversity and indigenous health in rural and remote areas will be explored and

different modes of communication and service delivery will be investigated.

Textbooks

A textbook of Australian Rural Health
Aboriginal Primary Health Care. Pharmacy and Poisons legislation is required but is made available in a specific format for the unit.

PHAR4825

Rural Clinical Placement

Credit points: 6 **Session:** Semester 2 **Classes:** Relevant portfolio and self directed learning activities **Prerequisites:** PHAR4811, PHAR4812, PHAR4813, PHAR4814 **Corequisites:** PHAR4824, PHAR4826 **Assessment:** Preceptor assessment (50%), portfolio (40%), reflective diary (10%) **Practical field work:** Extended Clinical Placement **Mode of delivery:** Clinical experience

Rural Clinical Placement is an experiential unit of study. Students complete extended placements in a variety of rural and remote settings. This unit of study allows students to integrate their knowledge and skill base within a variety of professional placements. Students gain an awareness of how patients, pharmacists and other health professionals interact to ensure Quality Use of Medicines as well as an understanding of the role of the pharmacist within the healthcare team.

Textbooks

Latest edition of Australian Medicines Handbook. Therapeutic Guidelines (Complete set). Victorian Drug Usage Advisory Committee. North Melbourne, VIC.

PHAR4826

Rural Pharmacy Services & Public Health

Credit points: 6 **Session:** Semester 2 **Classes:** 36 x 1hr lectures, 8 x 3hr workshops, and up to 18hrs of self-directed learning. **Prerequisites:** PHAR4811, PHAR4812, PHAR4813, PHAR4814 **Corequisites:** PHAR4824, PHAR4825 **Assessment:** Final exam (50%), group assignment/presentation (30%), workshop participation (20%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will focus on developing students' understanding of the Public Health System, the role of pharmacy within the public-health context, health policy and regulation affecting the functioning of pharmacy and the use of pharmaceuticals in Australia. The unit will focus on Pharmacy services and public health in rural and remote Australia. We will develop students' skills in how to identify, access and interpret relevant policy, regulatory and public-health literature and information sources. Topics which underpin understanding of public health including, pharmaco-epidemiology and pharmaco-economics will also be addressed. Through workshops and assignments, students will be given the opportunity to integrate their learning by exploring case studies. Students will apply their knowledge to address population health care problems with a special emphasis on achieving the quality, safety and judicious use of medicines in health care in rural and remote Australia.

Textbooks

Pharmaceutical Public Health
A Textbook of Australian Rural Health

Fourth Year International Major

PHAR4811

Pharmacotherapeutics

Credit points: 6 **Teacher/Coordinator:** Dr Bandana Saini **Session:** Semester 1 **Classes:** 32 x 1hr lectures, 8 x 3hr small group learning and up to 18hrs of self directed learning **Prerequisites:** All third year units of study. **Corequisites:** PHAR4812, PHAR4814, PHAR4823 **Assessment:** Final exam (40%), group portfolios (20%), workshop participation (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study will focus on developing students' understanding of the use of medicines and related appropriate health measures in special patient populations (e.g. paediatrics). The unit of study will draw upon concepts in clinical pharmacy, pharmacokinetics and clinical practice.

Through a series of workshops, students will undertake activities including case-study analysis, role-plays, problem solving and case presentations. These activities will help students explore information

sources for drug use and integrate knowledge of clinical indices, laboratory data, medication use history and demographic information to optimise drug therapy in response to the needs of individual patients. Students will gain 'hands-on' practice in the provision of patient-specific medicine use education and explore key issues concerning the maintenance of vigilance for medicines use specific to certain population groups.

Textbooks

Hughes J, Tenni P and Peterson G. Aged Care Primer. Available through the Pharmaceutical Society of Australia. Children's Dosing Companion - Australian Medicines Handbook (2014). Up to date research articles and references provided weekly.

Paediatrics Manual. The Children's Hospital at Westmead Handbook. 2nd Edition.

Hughes et al. Use of Laboratory Test Data. A Process Guide and Reference for Healthcare Professionals. Available through the Pharmaceutical Society of Australia.

PHAR4812

Integrated Dispensing Practice

Credit points: 6 **Teacher/Coordinator:** A/Prof Parisa Aslani **Session:** Semester 1 **Classes:** 1 x 2hr lec/wk (total approx 8hrs) 1 x 2hr workshop/wk and 1 x 2hr laboratory class /wk (total approx 32hrs/sem), approx 16hrs on-line activities **Prerequisites:** All third year units of study. **Corequisites:** PHAR4811, PHAR4814, PHAR4823 **Assessment:** Students must prove competency in each component of this unit of study (practical exams, continuous weekly assessments, dosage calculations assignment, portfolio presentation). This unit of study is Pass/Fail. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Integrated Dispensing Practice links together the skills and knowledge that students have developed in dispensing and pharmacy practice. The emphasis is on clinical practice and develops the theme that dispensing is not a single event but a process which draws on skills and knowledge from a variety of areas of pharmacy practice, including communication with the patient and prescriber. This is achieved using a simulated practice environment in which students learn to integrate the skills they have developed in dose form preparation with their clinical skills, forensic and administrative requirements (including the use of computer-based dispensing programs), as well as the professional aspects of pharmacy in delivering a patient-centred care.

Textbooks

Australian Medicines Handbook (2012 or 2013) and Australian Pharmaceutical Formulary (Ed 21 or 22).

PHAR4814

Pharmacy Management I

Credit points: 6 **Session:** Semester 1 **Classes:** 24 hrs of lectures, 1 x 2hr tutorial/wk, group work **Prerequisites:** All third year units of study **Corequisites:** PHAR4811, PHAR4812, PHAR4823 **Assessment:** Group Assignment and Peer Review (40%), exams (50%), class discussion and participation (10%). Each assessment task must be passed to pass this unit of study. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study focuses on the business skills necessary to manage either a community or hospital pharmacy. It focuses on three specific essential topics; accounting and financial management, human resource management and marketing. Material in each topic is managerially relevant and applied to the pharmacy context.

Textbooks

Pharmacy Management Custom Textbook, Compiled by J Bussing, PEARSON, 2012

PHAR4823

Pharmacy Services and Public Health

Credit points: 6 **Teacher/Coordinator:** Prof Ines Krass **Session:** Semester 1 **Classes:** 34 x 1hr lectures, 10 x 3hr workshops and up to 25hrs of self directed learning **Prerequisites:** All third year units of study **Corequisites:** PHAR4811, PHAR4812, PHAR4814 **Assessment:** Final exam (50%), group assignment/presentation (30%), workshop participation (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will focus on developing students' understanding of the Australian Health Care System, health policy and regulation affecting health in Australia and internationally and the role of pharmacy in public health/ health promotion. We will develop students' skills in identifying, accessing and interpreting relevant policy,

regulation and literature. Topics which underpin understanding of public health including, epidemiology/pharmacoepidemiology and pharmacoconomics will also be addressed. Through workshops and assignments, students will be given the opportunity to integrate their learning and apply this knowledge to address population health care problems with a special emphasis on achieving the quality, safety and judicious use of medicines in health care.

Textbooks

Pharmaceutical Public Health

PHAR4832

Pharmacy International Exchange

Credit points: 24 **Teacher/Coordinator:** Prof Paul W Groundwater **Session:** Semester 2 **Classes:** The numbers of practical classes, tutorials/workshops and lectures in each of the units of study taken will be the same as for the full-time students at the host institution. Forensic: Lectures 8hrs, Workshop 3hrs by distance learning. **Prerequisites:** PHAR4811, PHAR4812, PHAR4823, PHAR4814 **Assessment:** The students will be assessed in the coursework and examination components agreed by the Faculty and the international host institution in the same weighting as the full-time students at the host institution. This unit of study is Pass/Fail. Satisfactory performance in the forensic examination. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will provide students with the opportunity to experience other healthcare systems through performing coursework at international universities. The students will attend all classes in prescribed units of study offered by the host institution. These units of study will be agreed by the Faculty and the host institution and will be selected for level, content, and exposure of our students to the different healthcare system and roles of a pharmacist in the host country. The overall assessment and workload will be agreed between the two institutions and will be commensurate with 24 credit points.

Textbooks

Those recommended by the units of study at the host institution. Pharmacy and Poisons legislation is required but is made available in a specific format for the unit.

Fourth Year Industrial Major

PHAR4811

Pharmacotherapeutics

Credit points: 6 **Teacher/Coordinator:** Dr Bandana Saini **Session:** Semester 1 **Classes:** 32 x 1hr lectures, 8 x 3hr small group learning and up to 18hrs of self directed learning **Prerequisites:** All third year units of study. **Corequisites:** PHAR4812, PHAR4814, PHAR4823 **Assessment:** Final exam (40%), group portfolios (20%), workshop participation (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study will focus on developing students' understanding of the use of medicines and related appropriate health measures in special patient populations (e.g. paediatrics). The unit of study will draw upon concepts in clinical pharmacy, pharmacokinetics and clinical practice.

Through a series of workshops, students will undertake activities including case-study analysis, role-plays, problem solving and case presentations. These activities will help students explore information sources for drug use and integrate knowledge of clinical indices, laboratory data, medication use history and demographic information to optimise drug therapy in response to the needs of individual patients. Students will gain 'hands-on' practice in the provision of patient-specific medicine use education and explore key issues concerning the maintenance of vigilance for medicines use specific to certain population groups.

Textbooks

Hughes J, Tenni P and Peterson G. Aged Care Primer. Available through the Pharmaceutical Society of Australia. Children's Dosing Companion - Australian Medicines Handbook (2014). Up to date research articles and references provided weekly.

Paediatrics Manual. The Children's Hospital at Westmead Handbook. 2nd Edition.

Hughes et al. Use of Laboratory Test Data. A Process Guide and Reference for Healthcare Professionals. Available through the Pharmaceutical Society of Australia.

PHAR4812

Integrated Dispensing Practice

Credit points: 6 **Teacher/Coordinator:** A/Prof Parisa Aslani **Session:** Semester 1 **Classes:** 1 x 2hr lec/wk (total approx 8hrs) 1 x 2hr workshop/wk and 1 x 2hr laboratory class /wk (total approx 32hrs/sem), approx 16hrs on-line activities **Prerequisites:** All third year units of study. **Corequisites:** PHAR4811, PHAR4814, PHAR4823 **Assessment:** Students must prove competency in each component of this unit of study (practical exams, continuous weekly assessments, dosage calculations assignment, portfolio presentation). This unit of study is Pass/Fail. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Integrated Dispensing Practice links together the skills and knowledge that students have developed in dispensing and pharmacy practice. The emphasis is on clinical practice and develops the theme that dispensing is not a single event but a process which draws on skills and knowledge from a variety of areas of pharmacy practice, including communication with the patient and prescriber. This is achieved using a simulated practice environment in which students learn to integrate the skills they have developed in dose form preparation with their clinical skills, forensic and administrative requirements (including the use of computer-based dispensing programs), as well as the professional aspects of pharmacy in delivering a patient-centred care.

Textbooks

Australian Medicines Handbook (2012 or 2013) and Australian Pharmaceutical Formulary (Ed 21 or 22).

PHAR4814

Pharmacy Management I

Credit points: 6 **Session:** Semester 1 **Classes:** 24 hrs of lectures, 1 x 2hr tutorial/wk, group work **Prerequisites:** All third year units of study **Corequisites:** PHAR4811, PHAR4812, PHAR4823 **Assessment:** Group Assignment and Peer Review (40%), exams (50%), class discussion and participation (10%). Each assessment task must be passed to pass this unit of study. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study focuses on the business skills necessary to manage either a community or hospital pharmacy. It focuses on three specific essential topics; accounting and financial management, human resource management and marketing. Material in each topic is managerially relevant and applied to the pharmacy context.

Textbooks

Pharmacy Management Custom Textbook, Compiled by J Bussing, PEARSON, 2012

PHAR4823

Pharmacy Services and Public Health

Credit points: 6 **Teacher/Coordinator:** Prof Ines Krass **Session:** Semester 1 **Classes:** 34 x 1hr lectures, 10 x 3hr workshops and up to 25hrs of self directed learning **Prerequisites:** All third year units of study **Corequisites:** PHAR4811, PHAR4812, PHAR4814 **Assessment:** Final exam (50%), group assignment/presentation (30%), workshop participation (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will focus on developing students' understanding of the Australian Health Care System, health policy and regulation affecting health in Australia and internationally and the role of pharmacy in public health/ health promotion. We will develop students' skills in identifying, accessing and interpreting relevant policy, regulation and literature. Topics which underpin understanding of public health including, epidemiology/pharmacoepidemiology and pharmacoconomics will also be addressed. Through workshops and assignments, students will be given the opportunity to integrate their learning and apply this knowledge to address population health care problems with a special emphasis on achieving the quality, safety and judicious use of medicines in health care.

Textbooks

Pharmaceutical Public Health

PHAR4831

Pharmacy Industrial Placement

Credit points: 24 **Teacher/Coordinator:** Prof Paul W Groundwater **Session:** Semester 2 **Classes:** Students will be allocated a full-time workload in the host organization. Forensic: Lectures 8hrs, Workshop 3hrs. **Prerequisites:** PHAR4811, PHAR4812, PHAR4823, PHAR4814 **Assessment:** Students will be assessed through the submission of two reports, detailing their activities and the activities they have contributed to. The initial report will provide a background

about the industrial host, their area of pharmaceutical activity, and an introduction to the activities to be performed on the placement (40%). The second report will give a detailed description of the work performed, its relevance and how the work translates to health practitioners, patients, policy makers, the host organization or other stakeholders (60%). The industrial host will also be asked to provide a brief assessment of the student's performance on their placement and will be assessed as Pass/Fail. Satisfactory performance is required in the forensic examination. **Mode of delivery:** Professional practice

This unit of study will provide students with the opportunity to experience the practice of pharmacy in one of a range of industrial/organisational settings. Students will contribute to the activities of the host organisation, e.g. helping to develop and prepare consumer-relevant information sheets on managing medicines. The overall workload will be agreed and will be commensurate with 24 credit points.

Textbooks

Those recommended by the host institution. Pharmacy and Poisons legislation is required but is made available in a specific format for the unit.

Master of Pharmacy

The Master of Pharmacy is a two-year postgraduate degree by coursework with a full-time study load. If you already hold a university degree, this course provides you with the academic qualification needed to begin the registration process to become a pharmacist.

With a strong practical focus, the Master of Pharmacy is designed to deliver graduates advanced clinical skills, ready for prominent roles in all aspects of the profession and for leadership in the use of innovative evidence-based practice.

The course offers a mix of lectures, tutorials, labs, small group work, problem-based learning and clinical placements which develop valuable practical skills and experience.

Master of Pharmacy

These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2000 (the 'Coursework Rule'), the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended) and the Academic Board policies on Academic Dishonesty and Plagiarism.

Course resolutions

1 Course codes

Code	Course title
MAPHARMA-01	Master of Pharmacy

2 Attendance pattern

The attendance pattern for this course is full time only.

3 Master's type

The master's degree in these resolutions is a professional master's course, as defined by the Coursework Rule.

4 Admission to candidature

- (1) Available places will be offered to qualified applicants based on merit, according to the following admissions criteria.
- (2) To be eligible for admission to the degree, an applicant must:
 - (a) have a prior bachelor's degree
 - (b) meet the minimum requirement for Grade Point Average (GPA) OR the Graduate Australian Medical Admissions Test (GAMSAT) OR the Medical College Admission Test (MCAT)
 - (c) meet a minimum of 42 out of 54 credit points, or equivalent, in seven prerequisite subjects (chemistry, pharmacology, physiology, human biology, biochemistry, calculus, statistics) at university level
 - (d) have English language proficiency (if relevant).

5 Requirements for award

- (1) The units of study that may be taken for the course are set out in the Units of Study table for the Master of Pharmacy.
- (2) To qualify for the award of the Master of Pharmacy a candidate must complete a prescribed course of 96 credit points of units of study.

6 Additional requirements prior to commencing clinical placements

- (1) Information about the procedures for gaining clearance for clinical placements will be provided after enrolment.
- (2) *Student clearance for clinical placements*
The New South Wales Department of Health requires that all students obtain clearance in order to undertake clinical placements. This involves a criminal record check according to NSW Health policy.
- (3) *Prohibited employment declaration*
All students should complete a prohibited employment declaration as required by the NSW Commission for Children and Young People.
- (4) *Immunisation*
All students must have evidence of vaccinations and immunisation against certain infectious diseases prior to undertaking clinical placements. The requirements are consistent with Australian public health policy and NSW Health guidelines.

7 Progression rules

- (1) Candidates can enrol in the course with 12 credit points of prerequisite subjects outstanding as long as these units of study are completed by the end of the first year of the Master of Pharmacy.
- (2) Except with the permission of the Faculty, candidates may not take second year units of study until they have gained credit for all 48 credit points in first year units of study.

8 Transitional provisions

- (1) These resolutions apply to students who commenced their candidature after 1 January, 2011 and students who commenced their candidature prior to 1 January, 2011 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2011 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2016. The Faculty may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.



Master of Pharmacy

Units of study table

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
Year 1			
PCOL5001 Current Topics in Pharmacology	6		Semester 1
PHAR5513 Pharmaceutical Chemistry 1A	6		Semester 1
PHAR5515 Pharmaceutical Science	6		Semester 1
PHAR5516 Pharmaceutical Chemistry 1B	6	C PHAR5513 and PHAR5515	Semester 2
PHAR5517 Pharmaceutics 1B	6	C PHAR5515	Semester 2
PHAR5518 Pharmacy Practice A	6	C PHAR5505	Semester 2
PHAR5505 Clinical Residency 1	12	P PHAR5518	Intensive February
Year 2			
PHAR5507 Dispensing Practice	6	P PHAR5517	Semester 2
PHAR5508 Pharmacy Practice B	6	P PHAR5518 and PHAR5505	Semester 1
PHAR5514 Pharmaceutics 2A	6		Semester 1
PHAR5506 Pharmaceutical Chemistry 2	6	P PHAR5513, PHAR5516 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR5509 Integrated Pharmaceutics	6	P PHAR5517 C PHAR5514	Semester 2
PHAR5510 Pharmacy Practice C	6	C PHAR5508	Semester 2
PHAR5512 Clinical Residency 2	12	C PHAR5508 and PHAR5510	Semester 2



Master of Pharmacy

Unit of study descriptions

Year 1

PCOL5001

Current Topics in Pharmacology

Credit points: 6 **Teacher/Coordinator:** Dr Hilary Lloyd **Session:** Semester 1 **Classes:** 3 hrs per week consisting of lectures (1 per week), 2 laboratory classes and 9 case-based learning workshops. **Assessment:** final examination (55%), two lecture quizzes (10%) in-semester assessments (35%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit aims to develop students' understanding of the therapeutic applications of drugs based on their underlying pharmacodynamic and pharmacokinetic properties, concentrating on the pharmacology of agents that are widely used in Australia and exploring issues related to the use and safety of these agents.

PHAR5513

Pharmaceutical Chemistry 1A

Credit points: 6 **Teacher/Coordinator:** Dr Thomas Balle **Session:** Semester 1 **Classes:** 2 x lectures/wk, 5 x 2hr tutorials, 4 x 4hr workshops and self-directed learning **Assessment:** Exam (60%), laboratories (20%), and molecular modeling (20%) **Practical field work:** 3 x 4hr labs **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will explore the physicochemical properties of drugs and how this determines the interactions of small molecules (drugs) with biological macromolecules (enzymes and receptors). All stages in the process of drug design and development will be investigated, including computational drug design, structure activity studies, synthesis and activity assays. Students will also gain experience in a variety of experimental techniques related to drug design. In addition, students will develop skills including critical thinking, the use of information technology and report writing.

Textbooks

Patrick GL. An Introduction to Medicinal Chemistry (5th ed). Oxford University Press, 2013

PHAR5515

Pharmaceutical Science

Credit points: 6 **Teacher/Coordinator:** Dr Ramin Rohanzadeh **Session:** Semester 1 **Classes:** 2 x lec/week **Assessment:** 2 x 1.5hr exams (60%), microbiology labs and workshops (10%), drug molecular properties workshops (10%), metabolism workshops (10%), toxicology workshops (10%) **Practical field work:** 1 x 3hr workshop or lab/week **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will provide an introduction to the concepts required for the study of Pharmacy and integrate knowledge from the various sub-disciplines within the Pharmaceutical Sciences. Topics studied include sterilisation methods, chemical antimicrobial agents, cleanroom technology, physicochemical/molecular properties underlying drug action, drug metabolism, bioactivation and inactivation, identification of drugs and their metabolites, and toxicology. These concepts will be further explored in workshop formats.

Textbooks

Denyer SP, Hodges NA & Gorman SP. Hugo & Russell's Pharmaceutical Microbiology, 7th edition, Blackwell, 2004. D.A. Williams & T.L. Lemke eds. Foye's Principles of Medicinal Chemistry, 5th edition, Lippincott, Williams & Wilkins, 2002. Wallwork, S.C. & Grant, D.J.W. Physical Chemistry for students of Pharmacy and Biology, 3rd edition, New York: Longman, 1977. Casarett and Doull's toxicology: the basic science of poisons. 6th edition, 2001. D.G. Watson. Pharmaceutical Analysis, 2nd edition, Churchill-Livingstone, 2005.

PHAR5516

Pharmaceutical Chemistry 1B

Credit points: 6 **Teacher/Coordinator:** Prof David Hibbs **Session:** Semester 2 **Classes:** 3 x lectures/tutorials per week, 10 hours of self-directed learning **Corequisites:** PHAR5513 and PHAR5515 **Assessment:** 2 x 1.5 hr exams (65%); laboratories & workshops (35%) **Practical field work:** 4hr laboratory practical and 2 x 3hrs herbal workshops **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study utilises the knowledge gained in PHAR5513 Pharmaceutical Chemistry 1A to develop students' ability to apply basic scientific and medicinal chemistry concepts in the rationalization of observed biological activities for a series of drug molecules. The unit of study will be presented as a series of discrete topic areas based on therapeutic classes (hormonal, cardiovascular, herbal medicines, central nervous system, chemotherapy, antihistamines, photochemotherapy and sunscreens) and macromolecular targets (enzyme, G-protein coupled receptor, nuclear receptor). Lectures will be supported by self-directed learning and tutorials. Students will also undertake quantitative structure-activity relationship (QSAR) computer-based workshops and herbal medicine practicals as well as prepare a herbal medicine assay and oral presentation. These learning activities will further develop students' skills in critical thinking, the use of information technology and report writing.

Textbooks

Foye's Principles of Medicinal Chemistry (6th edn), edited by TL Lemke & DA Williams, Williams & Wilkins, 2008
Medicinal Chemistry (4th edn), Patrick (2009)

PHAR5517

Pharmaceutics 1B

Credit points: 6 **Teacher/Coordinator:** A/Prof Veysel Kayser **Session:** Semester 2 **Classes:** 3 x lectures/week **Corequisites:** PHAR5515 **Assessment:** Final exam (60%), minor exam (10%), laboratory practicals (30%) **Practical field work:** Laboratory work, 4hr/week for consecutive 2 weeks **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit of study students learn to evaluate the physicochemical principles, design, formulation, and manufacture of pharmaceutical dose forms. The formulation of liquid dose forms including parenteral, nasal, ophthalmic and aural products is discussed. Related topics such as diffusion and dissolution of drugs, drug solubilisation, surface and interfacial tension, surface active materials, micelle formation, pharmaceutical complexes and drug-packaging interactions are covered. Other topics covered in this unit include solid dose forms and particle science, rheology, dispersion dose forms including suspensions, colloidal dispersions, and emulsions; topical dose forms and semisolids; inhalation pharmaceutical aerosols; protein and peptide drugs and formulations; rectal products; novel drug delivery technologies. Aspects pertaining to the stability of dose forms are also presented in this unit.

Textbooks

Aulton M.E. Pharmaceutics: The Science of Dosage Form Design (7th edn) Churchill Livingstone
A.T. Florence & D Attwood Physicochemical Principles of Pharmacy, Pharmaceutical Press 4th Edition, 2006

PHAR5518

Pharmacy Practice A

Credit points: 6 **Teacher/Coordinator:** Dr Erica Sainsbury **Session:** Semester 2 **Classes:** 3 x lectures/wk and 2 x 2hr tutorials/wk **Corequisites:** PHAR5505 **Assessment:** Tutorial contribution (30%), exams (oral and written) (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is the first of three integrated units (Pharmacy Practice A, Pharmacy Practice B and Pharmacy Practice C) that will be completed during the MPharm program. It will commence with an



introduction to the profession of pharmacy, the Australian health care and drug distribution systems, and the National Medicines Policy, including the National Strategy for Quality Use of Medicines. Themes such as evidence based practice, pharmacoepidemiology, drug information, medication safety, ethics and communication skills will be introduced early in the unit of study and will then be revisited and reinforced in the remainder of Pharmacy Practice A, as well as throughout Pharmacy Practice B and C. There will be lectures and tutorials which cover over the counter medications in preparation for your placement units. During the second half of semester, a number of therapeutics topics will be covered in a problem-based learning format. Practice-based tutorials will be supplemented with relevant therapeutics lectures and other learning resources. Students will explore the role of the pharmacist in advising on primary and self care, performing clinical interventions, conducting medication reviews, monitoring therapeutic outcomes and participating in therapeutic decision making within these therapeutic areas. There will also be an introduction to workplace communication and Pharmacy management at the end of semester.

Textbooks

Therapeutic Guidelines, Therapeutic Guidelines Ltd, North Melbourne, Vic. (latest editions)
 Australian Medicines Handbook, Rossi S (ed), 2011
 Clinical Pharmacy and Therapeutics (4th edn), Walker R, Whittlesea C (eds), 2007

PHAR5505

Clinical Residency 1

Credit points: 12 **Teacher/Coordinator:** Prof Jo-anne Brien **Session:** Intensive February **Classes:** Practical experience **Prerequisites:** PHAR5518 **Assessment:** Preceptor Evaluation (50%), Portfolio including reflective diary (50%). All assessment tasks must be completed. Satisfactory performance in all areas of this unit of study is required. **Practical field work:** 4 weeks (or equivalent) experiential placement - ~35hrs per week. To be conducted between the end of Semester Two in Year One and completed before the the beginning of Semester One in Year Two. **Mode of delivery:** Clinical experience

The overall objective of the Unit of Study is to complement Units of Study already undertaken in on-campus course work, and to develop experience in practice and knowledge of professional settings. This Unit of Study is focussed on professional practice settings, and is normally conducted in community pharmacies, although may include some hospital pharmacy placements (as available) - where the student will observe, and participate in - professional practice. A portfolio of activities designed for the practice setting is a guide to assist self-directed learning. The activities also are triggers for students to appreciate and develop their knowledge of the Professional Competencies Framework for pharmacists. Students are prompted to be reflective in their learning through the experiential learning program and will write a reflective commentary during the placement for assessment - to be included in the portfolio.

Year 2

PHAR5507

Dispensing Practice

Credit points: 6 **Teacher/Coordinator:** Dr Erica Sainsbury **Session:** Semester 2 **Classes:** 6hrs of lectures, 19 x 2hr tutorials **Prerequisites:** PHAR5517 **Assessment:** Practical exams (30%), written exam (30%), continuous practical assessment (30%), dispensing portfolio (10%). Satisfactory performance in all areas of this unit of study is required. **Practical field work:** 7 x 3hr practicals and 5 x 2hr practicals **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study gives an introduction to dispensing practice, accuracy in dispensing, legal aspects of dispensing prescriptions, procedures for dispensing prescriptions, documentation of dispensing procedures, containers and labelling of dispensed medicines, dispensing of particular formulations, effect of changing formulation variables on the physical properties and efficacy of pharmaceutical products, dispensing and therapeutics and dosage. A series of workshops and practical classes assists students to develop the skills necessary to dispense and critically assess a variety of pharmaceutical products and a range of proprietary items, as well as facilitating the development of error-detection skills. During the second half of the semester, the process of dispensing is extended to include therapeutic aspects and

recommendations. The lectures cover legal aspects of the prescribing and supply of scheduled medicines.

Textbooks

Australian Medicines Handbook 2014 or 2015
 Australian Pharmaceutical Formulary 22nd edition

PHAR5508

Pharmacy Practice B

Credit points: 6 **Teacher/Coordinator:** Dr Betty Chaar **Session:** Semester 1 **Classes:** 3 x lectures/wk and 2 x 2hr tutorials/wk **Prerequisites:** PHAR5518 and PHAR5505 **Assessment:** Tutorial participation and contribution (10%), written medication review report (10%), mid-semester exam (20%), final exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is a continuation of Pharmacy Practice A. A number of therapeutics topics will be covered in a problem-based learning format. Practice-based case-study tutorials will be supplemented with relevant therapeutics lectures and other learning resources. Students will explore the role of the pharmacist in advising on primary and self care, performing clinical interventions, conducting medication reviews, oral and written communication skills with consumers and other healthcare professionals; monitoring therapeutic outcomes and participating in therapeutic decision making within these therapeutic areas. This unit of study will facilitate students to gain in-depth knowledge about the pharmacotherapy of disease states and delivery of cognitive pharmacy services in practice through both educational lectures and self-directed learning techniques.

Themes such as evidence based practice, pharmacoepidemiology, drug information including the use of Consumer Medicine Information statements [CMI], medication safety, cognitive pharmacy services, ethics and communication skills will be incorporated throughout the unit of study. Pharmacy management, human resources and career building are also covered in this unit of study.

Textbooks

Therapeutic Guidelines, Therapeutic Guidelines Ltd, North Melbourne, Vic. (latest edition) Australian Medicines Handbook, Rossi S (latest edition) Clinical Pharmacy and Therapeutics (latest edition), Walker R, Whittlesea C (latest edition) Australian Pharmaceutical Formulary and Handbook ISBN Number: 9780646570198

PHAR5514

Pharmaceutics 2A

Credit points: 6 **Teacher/Coordinator:** Dr Ingrid Gelissen **Session:** Semester 1 **Classes:** 3-5 x lectures/wk and 2hr workshops scheduled as required **Assessment:** Quizzes (summative and formative) (30%), workshops formative, (10%), final examination (summative) (60%). All assessments are compulsory. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is intended to provide knowledge in a number of fundamental areas that guide and provide evidence to support the safe, effective and ethical use of medicines. These fundamental areas of knowledge start with an understanding of the relationship between drugs interacting with target sites in the body and the effect produced (i.e. pharmacodynamic principles) and understanding the physiological and physicochemical factors that govern the movement of drugs around the body and the time course of exposure of body tissues and blood to drugs (i.e. pharmacokinetics). These principles involve developing concepts and models to explain drug activity in patients and to guide appropriate drug dosage selection.

This unit will also explore reasons behind variability in response to medicines among different individuals. The effects of disease, other drugs, demographics and the genetic basis for variable response will be introduced. Basic pharmacogenetic principles for explaining and predicting pharmacodynamic and pharmacokinetic variability in response will be explored.

Students are also exposed to the notion that medicines may produce adverse effects (as well as beneficial ones). The mechanisms underlying adverse reactions to drugs and how these are classified are explored as are the principles for detecting and avoiding these effects.

Ultimately, many options often exist to manage illness. While the fundamental principles described above assist in understanding how individual drugs should be used, they do not alone provide knowledge

to select among alternative options. This unit will introduce students to methods that are used to provide evidence of efficacy and safety of different therapeutic options and to define the place in therapy of these options. To do this, the principles that underpin evidence based medicine (including the clinical trial and pharmacoepidemiology) and the notion of levels of evidence are introduced. Exposure to these principles is intended to develop in students a basic understanding of how to critically evaluate therapeutic options.

PHAR5506 Pharmaceutical Chemistry 2

Credit points: 6 **Teacher/Coordinator:** Dr Rebecca Roubin **Session:** Semester 1 **Classes:** 2 x 1hr lectures/wk and 7 x 3hr workshops as well as self-directed learning **Prerequisites:** PHAR5513, PHAR5516 **Assessment:** Exam (50%), Biopharmaceuticals workshop (15%), Antibiotics resistance workshop (15%), Emerging therapeutics workshop (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

The aim of this unit of study is to explore recent advances in drug technology and to illustrate how basic research underpins clinical practice and pharmaceutical care. Students will be exposed to the newly developed and "up-and-coming" biotechnologies such as gene therapy, immunotherapies and prodrugs in the context of neurological disorders, inflammatory diseases, cancer and AIDS. Students will also obtain molecular insights into the actions of natural products. On successful completion of this unit of study, students will: be aware of the latest advances in drug technology; understand how basic research underpins clinical practice and pharmaceutical care; have developed advanced literature searching skills and be able to comprehend the work in original research articles and extract the relevant information from those articles; have improved their writing and oral communication skills; and comprehend the role chemistry plays in determining the molecular basis of drug action. This unit of study will hone the student's critical thinking, literature searching and scientific presentation skills - thus equipping the students with the essential skills for life-long learning.

Textbooks

Foye's Principles of Medicinal Chemistry; Thomas L Lemke, David A Williams, Victoria F Roche & S. William Zito, LWW, 6th Ed, 2008. Immunology for Pharmacy; Flaherty, Elsevier, 2012.

PHAR5509 Integrated Pharmaceutics

Credit points: 6 **Teacher/Coordinator:** Dr Fanfan Zhou **Session:** Semester 2 **Classes:** 3 x 1hr lectures/wk and 1 x 3hr workshop/wk **Prerequisites:** PHAR5517 **Corequisites:** PHAR5514 **Assessment:** Exam (40%) and workshop presentations/assignments/reports (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study aims to expose students to several themes associated with new drug development. As an integrated pharmaceutics course, this unit covers the topics of preclinical screening, ADME and animal testing, pre-formulation, formulation, bioinformatics in drug development and finally product marketing and post marketing responsibilities. Themes will be introduced in the form of lectures presented by the faculty as well as invited scientific professionals.

PHAR5510 Pharmacy Practice C

Credit points: 6 **Teacher/Coordinator:** Dr Stephen Carter **Session:** Semester 2 **Classes:** 3 x lectures/wk and 2 x 2hr tutorials/wk **Corequisites:** PHAR5508 **Assessment:** Tutorial contribution (30%) and exams (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is a continuation of Pharmacy Practice A and B. A number of therapeutics topics will be covered in a problem-based learning format. Practice-based tutorials will be supplemented with relevant therapeutics lectures and other learning resources. Students will explore the role of the pharmacist in advising on primary and self care, performing clinical interventions, conducting medication reviews, monitoring therapeutic outcomes, participating in therapeutic decision making and involvement in health promotion and public health within these therapeutic areas. Themes such as evidence based practice,

pharmacoepidemiology, drug information, medication safety, ethics and communication skills will be incorporated throughout the unit of study.

Textbooks

Therapeutic Guidelines. Therapeutic Guidelines Ltd, North Melbourne, Vic., latest editions Australian Medicines Handbook, Rossi S (ed), 2012
Clinical Pharmacy and Therapeutics (4th edn), Walker R, Whittlesea C (eds), 2007

PHAR5512 Clinical Residency 2

Credit points: 12 **Teacher/Coordinator:** Prof Andrew McLachlan **Session:** Semester 2 **Classes:** Clinical experience **Corequisites:** PHAR5508 and PHAR5510 **Assessment:** For each block: Preceptor Evaluation (50%), Portfolio, Case/Project and Reflective Diary (50%). All assessment tasks must be completed. Satisfactory performance in all areas of this unit of study is required **Practical field work:** 3 weeks clinical placement - ~35hrs per week normally in July. **Mode of delivery:** Clinical experience

This is an experiential unit of study. Off-campus placements will provide students with opportunities to enhance their knowledge and skill-base within clinical and professional settings. The sites may include primary and tertiary health care settings (community and hospital), general and specialist practice in rural and metropolitan areas, professional organisations and Quality Use of Medicines settings, as well as, government and the pharmaceutical industry. Students will create a portfolio that records their activities during the placement block. The activities are triggers for students to appreciate and develop their knowledge of the Professional Competencies Framework for pharmacists. The portfolio materials for students at a clinical site will also include a case report prepared by the student. The Case Report can be submitted for formative feedback, and the Case Report will be submitted as part of the Portfolio for summative assessment. Students at non clinical placement sites may submit the results of a placement project as part of their Portfolio. Students are prompted to be reflective in their learning through the experiential learning program and will write a reflective diary during the placement for assessment to be included in the Portfolio.

Graduate Certificate in Pharmacy Practice

The Graduate Certificate in Pharmacy Practice is a two-year program which incorporates an Intern Training Program into the first year to allow pharmacy graduates to meet the legislative requirements to register as a pharmacist in Australia then complete a formal, postgraduate qualification by undertaking an (optional) additional year of study.

The certificate is also available to registered pharmacists who wish to obtain a formal, postgraduate qualification. Registered pharmacists will complete the Graduate Certificate in Pharmacy Practice in two years of part-time study; they will undertake one core unit of study in place of the units relating to the Intern Training Program and three elective units of study.

Graduate Certificate in Pharmacy Practice

These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2000 (the 'Coursework Rule'), the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended) and the Academic Board policies on Academic Dishonesty and Plagiarism.

Course Resolutions

1 Course codes

Code	Course title
GCPHAPRA-01	Graduate Certificate in Pharmacy Practice

2 Attendance pattern

The attendance pattern for this course is part time.

3 Admission to candidature

- (1) Available places will be offered to qualified applicants based on merit, according to the following admissions criteria.
- (2) Admission to candidature requires a bachelor's degree or higher award in Pharmacy from the University of Sydney, or qualifications deemed by the Faculty to be equivalent.
- (3) To commence the Intern Training Program component of the course, applicants must hold provisional (intern) pharmacist registration with the Pharmacy Board of Australia (or successfully apply within 90 days of commencing the course)
- (4) Fully registered pharmacists are also eligible to enrol in the course (excluding the Intern Training Program component).

4 Requirements for award

- (1) The units of study that may be taken for the course are set out in the Units of Study table for the Graduate Certificate in Pharmacy Practice.
- (2) To qualify for the award of the Graduate Certificate in Pharmacy Practice a candidate must complete 24 credit points, including core units and electives as specified below:
 - (a) Applicants who hold current pharmacist practitioner registration upon admission must complete PHAR7110 plus three elective units, which must not include PHAR7111 or PHAR7121 (Intern Training Program).
 - (b) Applicants who are eligible to undertake the Intern Training Program upon admission must complete PHAR7111 and PHAR7121 plus two elective units, which must not include PHAR7110.
- (3) Upon completion of PHAR7111 and PHAR7121 (the Intern Training Program) candidates are issued an ITP Certificate of Completion to enable their application for pharmacist practitioner registration with the Pharmacy Board of Australia.



Graduate Certificate in Pharmacy Practice

Units of study table

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
PHAR7111 Applied Pharmacy Practice I	6		Semester 1
PHAR7112 Healthy Ageing Pharmacy Practice	6		Semester 1
PHAR7110 Fundamentals of Contemporary Practice	6	N PHAR7121, PHAR7111 <i>Note: Department permission required for enrolment</i>	Semester 1
PHAR7123 Diabetes Mellitus	6		Semester 1
PHAR7121 Applied Pharmacy Practice II	6		Semester 2
PHAR7122 Mental Health	6		Semester 2
PHAR7113 Cardiovascular and Renal	6		Semester 2



Graduate Certificate in Pharmacy Practice

Units of study descriptions

PHAR7111

Applied Pharmacy Practice I

Credit points: 6 **Teacher/Coordinator:** Dr Erica Sainsbury **Session:** Semester 1 **Classes:** Two 2-day seminar series for face-to-face teaching and learning, four moderated online discussion blocks, and continuous flexible delivery. **Assessment:** Satisfactory contribution to online discussion groups. Satisfactory mark in multiple choice exam. Attendance and satisfactory participation during small group tutorials and other seminar activities (100%). **Mode of delivery:** Distance education/intensive on campus

Note: Department permission required for enrolment. Applied Pharmacy Practice I develops the technical, clinical, personal and professional skills acquired as a pharmacy graduate that form the basis of future practice. This unit of study uses multiple methods of delivery to explore the range of issues that are relevant to the day-to-day practice of pharmacy. The issues include: systematic approach to problem solving; therapeutics; evidence based practice; patient monitoring; symptomology; patient outcomes; methods of improving adherence; multiple medication management; pharmaceutical care; standards and competencies for pharmacy practice; community pharmacy practice; hospital pharmacy practice; ethics; legal aspects; multidisciplinary approach to healthcare; primary care; over-the-counter medicines; communication and counselling; public health; pharmaceutical calculations; risk management; dealing with difficult clients, staff situations and other healthcare practitioners. This unit of study will develop graduates' independence and life-long learning skills of communication, capacity for enquiry and research, critical thought and analysis, problem solving, teamwork, numeracy and effective use of information technology.

This unit of study comprises monthly case problems related to specific practice issues which will explore all the relevant professional issues for pharmacy practitioners. Moderated discussion forums in small groups will explore the relevant issues around the case problem each month. Face to face seminars will cover relevant issues including evidence based practice, competencies, framework for practice, public health policy, privacy issues, communication and counselling and specific aspects of clinical pharmacy. Emphasis will be given to problem-solving, communication and responding to symptoms. Scenarios where legal, social and workplace issues come into play will be included. The syllabus is orientated to issues that arise in the day-to-day practice of pharmacy. Bachelor/Master of Pharmacy graduates undertaking their pre-registration experience in community pharmacy will be exposed to issues relevant to hospital pharmacy, and vice versa. This unit of study will develop graduates' independence and life-long learning skills of communication, capacity for enquiry and research, critical thought and analysis, problem solving, teamwork, numeracy and effective use of information technology.

PHAR7112

Healthy Ageing Pharmacy Practice

Credit points: 6 **Teacher/Coordinator:** Prof Andrew McLachlan **Session:** Semester 1 **Classes:** Classes will delivered through on-line reading and discussions, case studies and practice based experiences. **Assessment:** On-line discussions, assignments and medication reviews (100%). **Mode of delivery:** Online

Note: Department permission required for enrolment

This unit of study focuses on understanding the role of pharmacists in medication management for older people. The course reading includes material from the following areas: demographics and epidemiology, physiological changes associated with ageing, common health problems in older people, health promotion and disease

prevention (with emphasis on pharmacological interventions designed to reduce mortality and chronic disease), management of chronic disease, medication management in hospitals and the community, medication reviews, home visits and communication skills (including inter-professional communication).

PHAR7110

Fundamentals of Contemporary Practice

Credit points: 6 **Session:** Semester 1 **Classes:** Classes will delivered through on-line discussions, case studies and role plays. **Prohibitions:** PHAR7121, PHAR7111 **Assessment:** On-line quizzes, satisfactory participation in on-line discussions, assignments (100%). **Mode of delivery:** Online

Note: Department permission required for enrolment.

Note: Department permission required for enrolment

This unit of study covers the principles of evidence-based medicine; quantitative and qualitative interpretation of research evidence; the application of pharmacokinetics and pharmacogenomics in medication and dose selection and regimens; essential communication skills required to provide contemporary pharmacy services. This unit of study is a core unit for participants who are ineligible to enrol in PHAR7111 and PHAR7121.

PHAR7123

Diabetes Mellitus

Credit points: 6 **Teacher/Coordinator:** Prof Ines Krass **Session:** Semester 1 **Classes:** Content will be provided through self-directed on line learning modules with associated cases and classes through on-line discussions. **Assessment:** Participation in on-line discussions, learning portfolio and assignments (100%). **Mode of delivery:** Online

This unit of study covers the physiology and pathophysiology of the regulation of glucose metabolism; aetiology, treatment and monitoring of patients with type 1 and type 2 diabetes including interpretation of relevant clinical and laboratory tests; evidence-based pharmacological and non-pharmacological management; management and prevention of co-morbidities, public health approaches to the prevention of diabetes, the role of the specialist diabetes pharmacist supporting self-management, education and medication management of patients.

PHAR7121

Applied Pharmacy Practice II

Credit points: 6 **Teacher/Coordinator:** Dr Erica Sainsbury **Session:** Semester 2 **Classes:** Two 2-day seminars series for face-to-face teaching and learning, three moderated online discussion blocks, and continuous flexible delivery. **Assessment:** Satisfactory contribution to online discussion groups. Completion of forensic examination. Attendance and satisfactory participation during small group tutorials and other seminars activities. Satisfactory completion of portfolio and three competency assessments (100%). **Mode of delivery:** Distance education/intensive on campus

Note: Department permission required for enrolment

Applied Pharmacy Practice II further develops the technical, clinical, personal and professional skills acquired as a pharmacy graduate that form the basis of future practice. This unit of study uses multiple methods of delivery to explore the range of issues that are relevant to the day-to-day practice of pharmacy. The issues include: systematic approach to problem solving; therapeutics; evidence based practice; patient monitoring; symptomology; patient outcomes; methods of improving adherence; multiple medication management; pharmaceutical care; standards and competencies for pharmacy practice; community pharmacy practice; hospital pharmacy practice; ethics; legal aspects; multidisciplinary approach to healthcare; primary care; over-the-counter medicines; communication and counselling; public health; pharmaceutical calculations; risk management; dealing with difficult clients, staff situations and other healthcare practitioners.



This unit of study will develop graduates' independence and life-long learning skills of communication, capacity for enquiry and research, critical thought and analysis, problem solving, teamwork, numeracy and effective use of information technology.

PHAR7122

Mental Health

Credit points: 6 **Teacher/Coordinator:** A/Prof Timothy Chen **Session:** Semester 2 **Classes:** Discussion forums, assignments and readings. **Assessment:** Online quizzes, satisfactory participation and contribution to discussion forums and completion of assignments case studies and participation in online discussions (100%). **Mode of delivery:** Online

Note: Department permission required for enrolment

This unit of study will cover the aetiology, pathophysiology, diagnosis, treatment and monitoring of the following common mental health problems: anxiety & obsessional disorders, depression, substance abuse, schizophrenia, bipolar disorders amongst other conditions. This unit of study will focus particularly on medication management issues in consumers with these conditions and the pharmacist's role in managing these consumers. It will also focus on the role of the pharmacist within the broader mental health care system in Australia.

PHAR7113

Cardiovascular and Renal

Credit points: 6 **Teacher/Coordinator:** Jonathan Penm **Session:** Semester 2 **Classes:** Classes will delivered through on-line discussions, case studies and role plays. **Assessment:** On-line quizzes, satisfactory participation in on-line discussions, assignments (100%). **Mode of delivery:** Online

This unit of study covers the physiology and pathophysiology of the cardiovascular and renal systems; aetiology, treatment, management and monitoring of patients with renal (including acute and chronic renal failure) and cardiovascular disease (including hypertension, heart failure, coronary heart disease, lipid disorders); interpretation of relevant clinical and laboratory tests; pharmacological and non-pharmacological management; the role of the specialist cardiovascular/renal pharmacist in management and education of patients and other health care practitioners; public health approaches to the prevention of cardiovascular and renal disease; management and prevention of co-morbidities.

Master of Philosophy

The degree may be taken on either a full-time or part-time basis. The minimum period of candidature will be one year with a maximum of two years for students enrolled on a full-time basis. For students enrolled on a part-time basis, the minimum period of candidature is two years, and four years maximum.

Candidates complete a 6 credit point unit of study on research methods plus courses or units of study which may be prescribed by the head of the discipline. You will carry out supervised research on a topic approved by the faculty on the recommendation of the postgraduate coordinator and write a thesis embodying the results of this research that passes examination. The degree is awarded on the successful examination of a thesis based on original research.

Master of Philosophy

These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Higher Degree by Research) Rule 2011 (the 'HDR Rule'), the Academic Board resolutions relating to the Degree of Doctor of Philosophy and the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended).

Course resolutions

Part 1: Preliminary

1 Course codes

Code	Course and stream title
RMPHPLHA-01	Master of Philosophy

Part 2: Admission requirements

2 Eligibility for admission to candidature

- (1) To be eligible to be admitted to candidature by the Dean or Associate Dean, an applicant must hold or have completed the requirements for a bachelor's degree from the University of Sydney or other approved institution, in a subject area related to the proposed course of advanced study and research, with:
 - (a) first or second class honours; or
 - (b) a result of at least a Credit grade in the highest relevant unit of study.
- (2) The Dean or Associate Dean may admit to candidature an applicant who does not meet the requirements of sub-clause (1), provided that the applicant holds a qualification or qualifications that, in the opinion of the Board of Postgraduate Studies are equivalent to those prescribed in sub-clause (1).

3 Application for admission to candidature

- (1) An applicant for admission to candidature must submit to the Faculty:
 - (a) satisfactory evidence of the applicant's eligibility for admission;
 - (b) a proposed course of research and advanced study, approved by the Postgraduate Coordinator in which the work is to be undertaken; and
 - (c) a statement certifying the applicant's understanding that, subject to the HDR Rule, if the candidature is successful, his or her thesis will be lodged with the University Librarian and made available for immediate public use.
- (2) In addition, an applicant for admission to part-time candidature must submit a statement that he or she will have sufficient time available to complete the requirements of the degree in accordance with these resolutions.

4 Credit transfer

The HDR Rule specifies the conditions for the granting of credit for previous studies, including the effect on completion times.

Part 3: Candidature

5 Appointment of supervisor

The Chair of the Board of Postgraduate Studies, on the recommendation of the Postgraduate Coordinator, will appoint a supervisor and associate supervisor for each candidate in accordance with the HDR Rule and Academic Board policies for postgraduate research higher degree supervision.

6 Control of candidature

The HDR Rule specifies the conditions for the control of candidature by the University.

7 Location of candidature and attendance

The HDR Rule specifies the conditions for the location of candidature and attendance by candidates at the University.

Part 4: Requirements

8 Degree requirements

- (1) To satisfy the requirements of the degree candidates must:
 - (a) successfully complete any specified probationary requirements and conditions of candidature;
 - (b) successfully complete prescribed units of study;
 - (c) conduct research on the approved topic; and
 - (d) write a thesis embodying the results of the research that passes the examination.



9 The thesis

- (1) A candidate shall produce a thesis that meets the requirements specified in the HDR Rule.
- (2) The thesis will be no more than 60,000 words, except with the permission of the postgraduate coordinator.

Part 5: Enrolment and progression

10 Probation

- (1) A candidate is normally accepted for candidature on a probationary basis for a period not exceeding one year according to the provisions of the HDR Rule.
- (2) In the probationary period each candidate must:
 - (a) complete a 6 credit point research methods unit of study as required by the postgraduate coordinator;
 - (b) develop and present a refined research proposal to the satisfaction of the supervisor and postgraduate coordinator;
 - (c) demonstrate adequate English language competency for the completion of the degree; and
 - (d) meet any conditions set by the Board of Postgraduate Studies and the Faculty.

11 Time limits, earliest and latest submission dates

The HDR Rule specifies the allowable completion times and submission dates available for full- and part-time candidates in this course.

12 Mode of attendance

The attendance pattern for this course is full-time or part-time according to candidate choice but is subject to approval by the Board of Postgraduate Studies.

13 Discontinuation of candidature

A candidate may discontinue enrolment in a unit of study or the degree subject to the conditions specified by the HDR Rule.

14 Suspension of candidature

A candidate may suspend enrolment from the degree subject to the conditions specified by the HDR Rule.

15 Leave of absence

A candidate may take leave of absence from the degree subject to the conditions specified by the HDR Rule.

16 Progress

A candidate is required to maintain satisfactory progress towards the timely completion of the degree. Progress will be reviewed annually according to the provisions of the HDR Rule.

Part 6: Examination

17 Form of the thesis

A candidate must ensure that the thesis prepared for examination is typewritten and bound according to the Academic Board resolutions of the Degree of Doctor of Philosophy.

18 Examination of the thesis

- (1) Examination of the thesis will be conducted in general accordance with standards prescribed by Academic Board for the Doctor of Philosophy, except that:
 - (a) three copies of the thesis shall be submitted by the candidate;
 - (b) two examiners will be appointed by the Faculty, at least one of whom shall be external to the University and not a clinical academic title-holder of the Faculty; and
 - (c) the Board of Postgraduate Studies will act in place of the PhD Award Sub-Committee.

19 Award of the degree

The degree is awarded at the Pass level only.

Part 7: Other

20 Transitional provisions

- (1) These course resolutions apply to students who commenced their candidature after 1 January.
- (2) Candidates who commenced prior to 1 January, 2012 shall complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed within the time limits specified in those resolutions. The Dean or Associate Dean may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

Master of Philosophy

Units of study table

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
PHAR6000 Research Methods	6	<i>Note: Department permission required for enrolment</i>	Semester 1



Master of Philosophy

Unit of study descriptions

PHAR6000

Research Methods

Credit points: 6 **Teacher/Coordinator:** Dr Wojciech Chrzanowski **Session:** Semester 1 **Classes:** Workshops/tutorials **Assessment:** Oral presentation and journal article (5%), statistics oral presentation (10%), statistics project logbook (5%), faculty seminar attendance (5%), research project proposal (25%), written report (40%) and supervisor's feedback (10%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

Through coursework, assignments, reports and presentations, the unit of study develops the generic skills required to undertake research at a postgraduate level. The main activities are the literature review, laboratory safety, data management, research project design, scientific writing and oral presentation. In addition, each discipline has the option to expand on these core methodologies as seen appropriate by the Head of Discipline in which the candidate is undertaking their research component.



Doctor of Philosophy

Course code: PB000

The degree of Doctor of Philosophy is a University degree governed by Resolutions set down by the Academic Board. Candidates should be familiar with the Academic Board documents Degree of Doctor of Philosophy and University of Sydney (Higher Degree by Research) Rule 2011.

See the Policy Register at sydney.edu.au/policies for the most up-to-date versions of these resolutions.



Research themes

Research at the Faculty of Pharmacy is structured around themes that closely reflect the Australian government's health priorities:

- cancer
- cardiovascular disease and diabetes
- healthy ageing
- mental health, and
- respiratory disease.

The research covers a broad spectrum of pharmaceutical and clinical sciences, including:

- the design, synthesis, testing and mechanism of action of drugs
- studies on advanced drug delivery
- investigation of the fate of drugs in humans including pharmacogenomics and other aspects of drug disposition, and
- research on the clinical and sociological aspects of pharmacy and health services research.

Cancer

Cancer is a major health issue in Australia today. At current rates, the Cancer Council of Australia expects that by the age of 85 one in two men and one in three women will be diagnosed with cancer. Research projects include personalised anti-cancer therapy, drug resistance, the use of herbal medicines and design of new therapies.

Cardiovascular disease and diabetes

Australians are getting older, heavier and less active, putting themselves at greater risk of cardiovascular disease and diabetes. It is the number one cause of death in Australia, according to the Heart Foundation, and diabetes is the country's fastest growing chronic disease and the sixth leading cause of death. Faculty research covers a range of cardiovascular diseases and problems from atherosclerosis and thromboembolism to cardiac infarction and stroke.

Health services and patient safety

Health services and patient safety research in the Faculty of Pharmacy focuses on research that informs health policy and influences practice. This theme takes a system-wide view to ensure that research and innovation is able to improve health outcomes for consumers and improve the safety and effectiveness of the health system.

Mental health

Mental illness is a national health priority in Australia with one in five adults in Australia having an episode of mental illness in any one-year period. Drugs play a major part in the treatment of mental illness, giving pharmacists the potential to play a significant role in delivering treatment and services to mental health patients. The aim of research at the Faculty of Pharmacy under this theme is to develop treatment for neurological diseases and increase the diversity of agents to investigate potential receptors and targets in treatment.

Respiratory disease

With more than 2 million people having asthma, Australia has one of the largest populations of asthma patients in the world. Research into respiratory diseases in the faculty has yielded crucial findings for improving asthma treatment alongside other respiratory conditions such as cystic fibrosis and chronic obstructive pulmonary disease.



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