

CHARLES STURT
UNIVERSITY



**Faculty of Health Studies
School of Biomedical Sciences**

Bachelor of Pharmacy Course

Information for Externship Supervisors

CHARLES STURT
UNIVERSITY



School of Biomedical Sciences
Locked Bag 588
Wagga Wagga NSW 2678

Telephone: (02) 6933 4095
Fax: (02) 6933 2587

Dear Preceptor

As Head of School for Biomedical Sciences at Charles Sturt University (CSU) I would like to thank you for continuing to support our Pharmacy program by accepting our students for an externship placement. You can be assured that students gain a great deal from these placements and are grateful for the amount of time and effort contributed by hospital and community pharmacists.

The CSU Bachelor of Pharmacy course was established in 1997 with the primary aim of addressing the shortage of pharmacists in rural areas. Prior to 2001 only three to four new pharmacists per year were equipped and willing to venture out of metropolitan NSW. Since CSU's first graduating class in 2001 approximately 30 new pharmacists each year are embarking on practice in rural NSW and nine CSU graduates have become pharmacy owners.

This year is an exciting one for the Pharmacy course as we expand our intake to include the Orange campus. The Orange campus was taken over by Charles Sturt University, from Sydney University, at the beginning of the year. This has seen a significant increase in our intake in the Pharmacy course with 70 students enrolled at the Wagga Wagga campus and a further 45 students taking up places at the Orange campus.

The Pharmacy Foundation has supported the Pharmacy program at CSU since its inception in 1997 by contributing to the establishment of suitable facilities at Wagga Wagga and providing scholarships for students and financial support for many other projects.

We are now entering a particularly exciting and challenging phase for CSU and the Pharmacy Foundation as we welcome the appointment of Australia's first Professor in Rural Pharmacy. This appointment will be a major step in ensuring that the Pharmacy program at CSU continues to improve the supply and retention of rural pharmacists, as well as expanding the development of networks and research programs relevant to rural pharmacy practice.

We would very much appreciate and welcome your involvement in supporting these and other initiatives to ensure that our pharmacy course keeps pace with the challenges of the profession and continues to build upon CSU's reputation for producing excellent Pharmacy graduates.

The attached brochure outlines suggested levels of financial support you may choose to make to the Foundation. Please don't hesitate to contact me on (02) 6933 4095 or the Foundation Office on (02) 6338 4834 at any time to discuss ways that you can become involved in this important organisation.

Yours sincerely

A handwritten signature in cursive script that reads "Lyndall Angel".

Assoc Professor Lyndall Angel
Head of School

I would like to support the Pharmacy Foundation by becoming:

- Supporter \$250 per annum for five years
 - Donor \$1,000 per annum for five years
 - Governor \$5,000 per annum for five years
- or
- I would like to donate the amount of \$.....

Name

Address.....

.....

Telephone No:

e-mail:

Payment options

Please invoice me in (month) each year for the above amount

OR

Please charge my credit card:

- Bankcard; Visa; MasterCard;
- American Express; Diners

Cardholder's Name:.....

Card Number:/...../...../.....

Expiry Date:/.....

Amount of authorisation: \$.....

Signature of cardholder:.....

Please return to:
The Foundation Secretary
Charles Sturt Foundation
Founders' Cottage
Panorama Avenue
Bathurst NSW 2795

Introduction

The following information about the CSU Pharmacy Course should help you to understand the level of knowledge of students doing an externship at your workplace. Each year the students study eight subjects. Some subjects have two parts and flow into the following semester. The subjects may have names which are unfamiliar to you, however the content may be similar to things studied in your own course.

First Year Students

- Introduction to Pharmacy
 - An overview of the roles and responsibilities of the pharmacist and a basic introduction to prescriptions.
- Physiological Science 1 and 2
 - The emphasis of this course is on the physiology of the cutaneous, skeletal, muscular, nervous and endocrine systems.
- Chemistry 1 and 2
 - A study of current theories of the nature of atoms, molecules and bonding to explain the behaviour of bulk matter.
- Introductory Medical Microbiology
 - The mechanisms by which medically important microorganisms cause disease and human defences and precautions against infection are introduced.
- Maths and Statistics in Health Science
 - A foundation in mathematics and statistics for subjects in the health sciences.
- Pharmaceutics 1
 - Measurement systems, dose forms, dosage calculations, and data presentation

Second Year Students

- Understanding and Using Computers
- Physical and Organic Chemistry
 - major areas are stereochemistry and its relation to drug design and metabolism, and chromatography
- Human Biochemistry
 - the structure of proteins, carbohydrates and lipids, and the major metabolic pathways operating in human cells
- Human Nutrition
- Molecular Genetics
 - the genetic basis of disease and therapy
- Pharmaceutics 2 and 3
 - physicochemical properties of drugs and their effect on development of dose forms
 - extemporaneous dispensing
- Pharmaceutical Microbiology
 - sterilisation, antibiotics, microbial resistance, pathogenesis of disease

Third Year Students

- Pharmacology 1
 - drug receptor theory drugs affecting fluid & electrolyte balance, asthma and cardiovascular agents.
- Pharmacology 2
 - drugs affecting the CNS, endocrine drugs, antimicrobial drugs and cancer therapy.
- Organic and Medicinal Agents 1 and 2
 - Provides the basis for an understanding of the principles and techniques for development of future drugs.
- Pharmacokinetics
 - Looks at typical pharmacokinetics and special cases such as disease states, pregnancy, lactation, paediatrics and geriatrics.
- Pharmacy Practice
 - the psychology of health and disease; communication skills; the dispensing and counselling of proprietary and extemporaneous prescriptions; legislation relevant to procurement, storage supply and sale of pharmaceuticals
- Professional Issues in Pharmacy
 - maintenance of accounts and business practices for community and hospital pharmacy
 - human resource management, risk management, inventory management, finance & marketing
- Disease Processes
 - disease development, detection and monitoring by laboratory testing

Fourth Year Students

- Therapeutics 1 and 2
 - therapeutic application of drugs with respect to disease states
- Professional Practice 1 and 2
 - counselling for prescription medications
 - case study based problem solving incorporating dispensing, therapeutics, evaluation
 - clinical pharmacy: patient controlled analgesia, TPN, medication review and integrated case studies
- Pharmacy Residency 1
 - extended clinical placement, debriefing and review sessions
- Rural Pharmacy
 - extended practical work with emphasis on rural issues
- Complementary Medicines for Pharmacy
 - This subject will address the use and efficacy of complementary medicines and address known and potential interactions between conventional and complementary medicines.

Aims and Objectives

General

- the overall objective of the Program is to allow students to gain an understanding of their future profession as a pharmacist
- a primary aim is to expose students to different types of pharmacy practice in community, hospital, and if possible industrial sites
- by arranging their own externship site, students are expected to show initiative, resourcefulness, and appropriate communication with health professionals.

Third Year - Pharmacy Practice 1 - PHM314

Overview of Subject

This subject develops and extends the practical skills introduced in Pharmaceutics 1, 2 and 3. In addition it introduces more advanced extemporaneous dispensing including the possibility of overdose, interaction with other medications or base incompatibility, as presented.

The counselling case studies presume a knowledge of Pharmacology, Human Nutrition, Biochemistry and Anatomy/Physiology. The student will be expected to draw on knowledge gained in these disciplines to integrate these areas into counselling practice.

This subject will cover the following topics:

- The psychology of health and disease
- Health belief models
- Compliance and adherence
- Self care and lay theories of illness
- Legislation relevant to the procurement, storage, supply and sale of pharmaceutical products
- Pharmacy only and pharmacist only medicines
- Appropriate differential diagnosis, intervention, treatment or referral
- Ethics and standards of practice
- Process and procedure of dispensing extemporaneous and proprietary medication
- Complementary treatment modalities
- Communication theory and practice

Subject objectives

Upon completion of this subject students should be able to:

- Apply appropriate ethical and legal standards in the practice of pharmacy
- Understand the importance of due care and diligence in practice
- Recognise the factors influencing patients responses to illness
- Appreciate how health beliefs may affect prognosis
- Understand the pharmacist's role in the facilitation of appropriate self-medication by patients

- Determine the applicable use of alternative therapies
- Demonstrate their successful integration of knowledge from earlier subjects
- Successfully differentially diagnose a pseudo patient and make an appropriate product recommendation (s), lifestyle modifications and/or an appropriate referral

Objectives of Externships in PHM314 – Pharmacy Practice 1

The externship in Autumn semester of third year is generally a community pharmacy externship. Students will complete their compulsory hospital externship in second semester.

At the end of the externship third year students should be able to meet the following objectives:

- describe in detail the processing of prescriptions
- describe in detail the operation of the Pharmaceutical Benefits Scheme
- outline record keeping requirements for drugs of addiction
- outline other pharmacy administrative requirements
- demonstrate the use of pharmacy computer systems for dispensing and labelling of medicines
- outline the professional requirements for the use of ancillary labels on prescriptions
- list and describe the use of the sources of drug information available to community pharmacists
- describe the storage and display of prescription and non-prescription medicines
- identify areas where ethics, legal and professional responsibility impact on pharmacy practice
- reflect on the use of communication skills in counter prescribing
- observe communication by the pharmacist with other health professionals
- describe interventions by the pharmacist in drug therapy
- outline other areas of pharmacy practice available at the site

Third Year – Disease Processes - BMS310

Overview of Subject

This subject examines the processes of disease development in humans, together with the way that such processes are detected and monitored using laboratory tests. Emphasis will be placed on the role of common point-of-care tests, which may be utilised by practising pharmacists.

This subject will cover the following topics:

- haematological disorders, with special reference to disorders of blood fluidity
- malignant disorders, with special reference to leukaemias
- respiratory disorders, with special reference to asthma
- reproductive disorders, with special reference to infertility
- neurological and psychiatric disorders, with special reference to Parkinsonism
- gastrointestinal and hepatic disorders - an overview
- endocrine disorders, with special reference to diabetes mellitus and thyroid disorders
- cardiovascular disorders, with special reference to atherosclerosis, myocardial infarction and
- monogenic disorders, with special reference to cystic fibrosis
- renal disorders, with special reference to fluid and electrolyte imbalances and renal transplantation
- common point-of-care testing.

Subject Objectives

Upon completion of this subject the student will be able to:

- integrate knowledge from various biomedical science disciplines to gain an understanding of disease processes of the human body;
- appreciate the role of genetic factors in the development of both monogenic disorders and multifactorial human diseases;
- outline the range of clinical disorders commonly encountered by practising pharmacists;
- appreciate the need for drug therapy arising from an understanding of disease processes;
- describe the biomedical rationale of routinely encountered laboratory and point-of-care tests;
- interpret results presented in routine pathology laboratory reports;
- perform point-of-care tests

Third Year Hospital Externship in Disease Processes

The externship in Spring semester of third year is the compulsory hospital pharmacy externship.

Hospital placements are a scarce resource, and schools depend on the cooperation of hospital pharmacists to accomplish the externship requirements. The profession has advised that the preferred strategy is for the School and the hospital pharmacist to interact – accordingly students are advised that they should NOT contact hospitals on their own or others behalf. At the very beginning of session, students who have a desire to attend a particular hospital should register a preference, or series of up to TWO preferences, with the EC. The EC will then contact that hospital in addition to those who have previously indicated a willingness to take a student. Preferences are filled in order of receipt by the EC.

At the end of the externship the students should be able to meet the following objectives:

- outline the roles of the hospital pharmacist
- describe the activities of a pharmacist on ward rounds
- observe the impact of disease on the human body
- outline the use of computers in the hospital for storage and retrieval of information (eg stock control records, pathology results, pharmacokinetic predictions)
- list and describe the sources of drug information available to hospital pharmacists
- describe the storage of medicines both in the pharmacy and on wards
- describe in detail the processing of prescriptions and drug orders for both inpatients and outpatients
- outline the requirements for SAS and S100 drugs if available at the site
- reflect on the interactions between different health professionals working in the hospital
- outline areas of specialist pharmacy practice available at the site

Fourth Year - Pharmacy Residency 1 - PHM491

Overview of Subject

This subject is a clinically based subject focused on pharmacy practice in a wide variety of settings including hospital and community pharmacies, veterinary practices and industrial settings.

The subject will cover the following topics:

- Antitussives, decongestants and mucolytics;
- Aseptic Dispensing - TPN and Cytotoxics;
- Cardiovascular disease - HT, CHF, MI and angina;
- Drug usage evaluation;
- Drugs for arthritis;
- Hyperlipidaemia;
- Infectious diseases and use of antibiotics;
- Pharmacotherapy in paediatric and geriatric populations;
- Physiology of haemostasis: drugs for thromboembolic disease.
- Renal - acute and chronic, dialysis

Subject Objectives

Upon completion of this subject the student should be able to

- Have an ability to analyse current literature and interpret findings to develop a sound, and reasoned clinical decision.
- To develop an overall understanding of pharmacology, therapeutics and pharmacokinetics so as to be able to apply the knowledge to a clinical setting.
- Understanding of the role in promoting the Quality Use of Medicines and the mechanisms by which QUM can be encouraged.
- Understand the role and responsibilities as a pharmacist.
- Be able to communicate effectively with both health professionals and lay-people in a wide range of settings.
- Recognise that the way in which pharmacy is practised may vary from location to location; the student should especially be able to recognise when practice does not meet best practice guidelines and the personal and workforce factors that may influence the ways in which Pharmacy is practiced.

Fourth Year Rural Pharmacy - PHM492

Overview of Subject

This subject explores the important issues in rural health, with special emphasis on the important role of the rural pharmacist. There will also be a clinical component to this subject. Students will be provided with general information about traineeships and PGTC year. Clinical topics will include:

- Dyspepsia
- Parkinson's disease
- Pain Management
- Anxiolytic, antidepressant and neuroleptic drugs
- Intravenous & other parenteral therapy
- Diabetes and other endocrinology
- Drug interactions
- Dermatology

The main objective for this subject is for students to understand the important issues faced by consumers and healthcare workers located in regional sites.

Subject Objectives

- Understand the factors that influence the health of those living in rural and remote areas and the role of healthcare workers in caring for these clients.
- have a firm grasp of the ethical and pharmacological decisions that have to be made when caring for pharmacy clients.
- understand the importance of and mechanisms for conducting medication reviews, with special emphasis on deciding upon clinical interventions and drug interactions of significance;
- Be able to communicate with confidence to professional peers, other health professionals and the lay-public about medication and medication related matters in an appropriate fashion.
- become more familiar and skilled in carrying out and reporting case studies.

Fourth Year Externships

The student has been assigned tasks for self-directed activity during their externship. The student has also developed a list of objectives they would like to achieve during their time with you. This may include objectives such as "learning to dispense more efficiently", "becoming more comfortable with counseling patients", "becoming more comfortable recommending OTC products". It is recommended that you review the student's objectives with them at the start of the externship and on a weekly basis and give feedback about their professional development. We aim for the students to work in a self-directed manner, and should minimize your need to provide "things" for the student to do. The students have been instructed to maintain a patient / client focus and to direct customers to the most appropriate person at your premises. The students have also been instructed that they must maintain patient and business confidentiality.

The student will be asked to write a daily diary of their experiences in your pharmacy. The diary should contain the following information

- Situation analysis of the pharmacy and the town in which the pharmacy was located

- Pharmacy services offered at the site
- Personal Objectives
- Reflecting on interesting interactions with clients
- Reflecting on interesting therapeutic encounters
- Reflecting on Pharmacist interventions
- Reflecting on interactions with other health professionals
- Reflecting on other experiences (for example a journey to an aboriginal health centre).

Contacts for the Pharmacy Course

Enquiries about the administration of the externship Program please contact:

Dr Ross Kennedy, Course Coordinator	Phone: (02) 6933 2098 e-mail: rokennedy@csu.edu.au
Katherine Baverstock, 4 th year Pharmacy Lecturer	Phone: (02) 6933 4286 e-mail: kbaverstock@csu.edu.au
Kathy Hocking, Externship Coordinator	Phone: (02) 6933 2598 e-mail: khocking@csu.edu.au

January 2005. The statements above concerning the Pharmacy Externship Program at Charles Sturt University are subject to alteration if necessary.

