



CITY UNIVERSITY
LONDON

School of Community and Health Sciences

RN/Diploma/BSc (Hons) Nursing
2006 Curriculum

Applied Biological Sciences Theme

Module Handbook

Applied Biological Sciences in Children's Nursing NM2716

February 2008 cohort

Year 2 (February 2009 – February 2010)

Details of Module Leader

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Applied Biological Sciences in Children's Nursing – NM2716

Level:	Level 2
Year/Semester of Programme:	Year 2, February 2008 cohort
Dates running:	February 2009 – February 2010

INTRODUCTION

Welcome to Year 2 of the Child Branch. The Applied Biological Sciences content of the curriculum forms an essential part of theory which informs your practice as a student and potential children and young people's nurse. The teaching and learning experiences in Year 2 is envisaged to promote problem-solving, critical thinking and, increase the awareness of how this theory helps you to promote child and family health, contribute to positive health care outcomes, as well as safeguarding your own prospective professional practice. It similarly hopes to motivate you to engage in further reading and self-directed learning. The goal throughout the course is for you to emerge with an accurate and clear understanding of the key physiological events, pathological processes and therapeutic strategies related to Child Health and Paediatrics.

Teaching sessions are interactive and aim to facilitate active and meaningful learning which helps to establish the essential theoretical framework that underpins practice. The focus of each session is in promoting progressive development of applied biological theory, which you will be able to put into appropriate clinical context, therefore a prerequisite knowledge-base is required. Such a goal can be achieved through the process of reflection on previous experience, review of the teaching and learning in the foundation programme, and the suggested student-directed learning. Following such a strategy will enable you to come to the lectures with an appropriate frame of reference that facilitates meaningful learning, problem-solving and critical thinking in both the theoretical and clinical context.

Throughout out the year, teaching and learning is facilitated in such a way that the interrelatedness of biological sciences theory to the other areas of the curriculum emerges during the learning experience.

Enjoy your learning in the Child Branch.

Sarah Greenwood
Lecturer: Applied Biological Sciences

OVERVIEW OF THE THEME & LINKS WITH OTHER THEMES

Theme Overview

The nature of nursing and midwifery practice requires strong foundations in the applied Biological Sciences underpinned by research. Knowledge in the disciplines of biochemistry, embryology, microbiology, physics, physiology, pathology and pharmacology will enable you to gain an appropriate understanding of human processes in health and illness. These disciplines will be fundamental to your ability to make informed, rational assessments of the patients' health needs and draw constructive conclusions, which in turn will contribute to knowledgeable multidisciplinary delivery and competent management of an individual's care.

The aim of the module is to provide you with learning experiences in applied biological sciences theory, which will form a foundation for your initial nursing/midwifery practice.

Links with other Themes

This Theme has significant links with The Fundamental Aspects of Care Theme particularly in relation to the understanding of the provision of caring skills.

AIMS OF THE MODULE

The aim of the module is to enable the student to build upon the applied biological science knowledge gained during the foundation year, and to provide the student with learning experiences in biological sciences theory, which relate directly to the child and family. The student will be enabled to structure, apply and transfer this knowledge to specific paediatric healthcare settings.

LEARNING OUTCOMES

Knowledge and Understanding

- Demonstrate reliable biological sciences theory that informs practice and enables them to structure, prioritise, implement and evaluate care for the child/young person and family safely and effectively. (NMC 1.9, 2.4, 2.9, 2.18, 2.22)

Values and Attitudes

- Discuss the relevance of biological sciences theory, and related evidence, which enables the student to show awareness of their roles, responsibilities and limitations in their abilities to provide safe, humanistic and effective delivery of care for children, young people and their families, e.g. Infection control, medicines management, ward-based life support, peri-operative care. (NMC 1.4, 1.8, 1.9, 1.12, 1.14, 2.8, 4.4)

Skills (cognitive/intellectual)

- Demonstrate how biological sciences theory promotes critical thinking in practice related to children's nursing. (NMC 1.3, 4.1)
- Apply effective problem solving skills in the clinical setting. (NMC 2.2, 3.12, 4.1)

- Indicate how biological sciences theory promotes effective interprofessional collaboration and teamwork. (NMC 1.3, 2.13, 4.1)

Skills (subject specific/professional)

- Recognise and interpret actual/potential problems in the care delivery process in a variety of healthcare settings. (NMC 2.3, 2.4, 2.5, 2.8, 2.9, 2.11, 2.13, 2.16, 2.17, 3.1)
- Structure nursing care that minimises or prevents complications/adverse effects. (NMC 2.3, 2.4, 2.5, 2.8, 2.9, 2.11, 2.13, 2.16, 2.17, 3.1)

Skills (transferable)

- Articulate the relevance of biological sciences theory in care delivery/management of children/young people and the family that requires numeracy skills, knowledge of information technology, and the safe use and maintenance of mechanical devices (NMC 2.1, 2.4, 2.9, 2.14, 3.3, 3.4, 3.7, 3.14)

OVERVIEW OF MODULE CONTENT AND SESSIONS

The content of the module is based around the proposed standards offered in the National Service Framework for Children and Young People (2004)¹.

STANDARD 1

Applied Biological Sciences in child health & evidence based practice

Childhood growth and development

Biological features of the term neonate

Auditory and visual development in childhood

Body fluids and electrolytes balance in children and adolescents

Childhood nutrition

Childhood immunity and immunisation

Biological perspectives in paediatric resuscitation ABC (1)

Evidence based practice: The biological perspective (1)

STANDARD 2

Fever and febrile convulsions in children

Childhood nociception (pain perception) and pharmacotherapeutics

Childhood gastroenteritis

Pharmacological principles applied to children (the essentials)

Childhood infections and pharmacotherapeutics

Evidence based practice: The biological perspective (2)

STANDARD 4

Adolescent growth and development

Childhood obesity and long-term physiological/adverse effects

STANDARD 5

Childhood malnutrition

Biological theories & adverse effects of substance abuse

STANDARD 6

Acute asthma in children and pharmacotherapeutics

Bronchiolitis in infants

Childhood fractures

Head injury in children

Biological basis of neurological observations

Urinary tract infections in children and pharmacotherapeutics

Body fluids and electrolyte imbalance in children

¹ Department of Health (2004) National Service Framework for Children, Young People and Maternity Services. London: Department of Health.

USING YOUR SELF-DIRECTED STUDY TIME

As indicated in the introduction, you will be expected to carry out the suggested self-directed learning provided in the work book. These will relate to specific or individual teaching sessions and, following this suggestion will be evident by your contribution to the interactive processes in each teaching session and your quest for further reading.

LEARNING AND TEACHING METHODS

The methods listed below will be used to teach this module. For full descriptions of these learning and teaching methods, please refer to your programme handbook:

Lectures

For the presentation of new material and to stimulate thinking and enquiry, most classes will be conducted as lectures.

Small group work/laboratory practicals

To enable the consolidation of material taught in the lectures, facilitate the acquisition of manual and team skills and provide opportunities for students to use conceptual knowledge and cognitive processes to solve problems, small group work and laboratory practicals will be undertaken.

Student directed learning (workbooks)/E-Learning

To facilitate independent learning and thinking and contribute to life long learning. Student directed learning and e-learning will be incorporated.

Tutorials

To facilitate additional subject support and direction, tutorials will be with either your designated personal tutor or with a biology lecturer.

Clinical Practice

To enable the application of theory to practice and the development of knowledge skills, you will be expected to apply relevant biological principles to the practice setting.

MODULE ASSESSMENT

For details on pass requirements and other information please refer to the separate assessment pack.

READING LIST & USEFUL WEBSITES

Ball, J.W. and Bindler, R.C. (2004) ***Paediatric Nursing***. 3rd Ed. New Jersey USA: Prentice Hall.

BNF-C (2008) ***The Essential Resource for Clinical Use of Medicines in Children***
London: BMJ Publishing Group.

Bruck, L., Donofrio, J. and Labus, D. (eds.) (2005) ***Nursing Pharmacology Made Incredibly Easy***. Philadelphia: Lippincott Williams and Wilkins.

Candy, D. Davies, G. and Ross, E. (2001) ***Clinical Paediatrics and Child Health***.
Edinburgh: WB Saunders.

Chamley. C.A. Carson, P. Randall, D. and Sandwell, M. (2005) ***Developmental Anatomy and Physiology of Children. A Practical Approach***. Edinburgh: Elsevier.

Comer, R.J. (2008) ***Fundamentals of Abnormal Psychology*** 5th Ed. New York: Worth Publishers.

Fuhrman, B.P. and Zimmerman, J.J. (2006) ***Paediatric Critical Care***. 3rd Ed. St Louis: Mosby.

Glasper, E. and Richardson, J. (2006) ***A Textbook of Children's Nursing***. Edinburgh: Elsevier.

Holden C. and MacDonald A. (2000) ***Nutrition and Child Health***. London: Ballière Tindall, Harcourt Publishers Ltd.

Kanneh, A. (2002) Paediatric Pharmacological Principles: An Update Part 1: Drug Development and Pharmacodynamics. ***Paediatric Nursing***, 14 (8): October 36-42.

Kanneh, A. (2002) Paediatric Pharmacological Principles: Paediatric Pharmacological Principles: An Update Part 2: Pharmacokinetics, Absorption and Distribution. ***Paediatric Nursing***, 14 (9): October 39-43.

Kanneh, A. (2002) Paediatric Pharmacological Principles: Paediatric Pharmacological Principles: An Update Part 3: Pharmacokinetics: Metabolism and Excretion. ***Paediatric Nursing*** 14 (9): 39-43.

Lissauer, T. and Claydon, G. (2007) ***Illustrated Textbook of Paediatrics*** 2nd Ed. Edinburgh: Mosby International Ltd.

Martini, F.H. and Bartholomew, E.F. (2007) ***Essentials of Anatomy & Physiology*** 4th Ed. San Francisco: Pearson Benjamin Cummings.

Marieb, E.N. (2007) ***Human Anatomy and Physiology***. 7th Ed. London: Benjamin/Cummings.

McCance, K. and Huether, S. (2005) ***Pathophysiology: The Biologic Basis for Diseases in Adults and Children***. 5th ed. St Louis: Mosby Publishing.

Morton, P.G. Fontaine, D. Hudak, C.M. and Gallo, B.M. (eds.) (2005) ***Critical Care Nursing: A Holistic Approach*** 8th Edition Philadelphia: Lippincott Williams and Wilkins.

Neil, S. and Knowles, H. (2004) ***The Biology of Child Health***. Hampshire: Palgrave Macmillan.

Nussey, S.S. and Whitehead, S.A. (2001) ***Endocrinology, An Integrated Approach***. Oxford: Bioscientific Publishers Ltd.

Port, C.M. (2005) ***Pathophysiology: Concepts of Altered Health States***. 7th Ed. Philadelphia: Lippincott Williams and Wilkins.

Seeley, R.R., Stephens, T.D. and Tate, P. (2005) ***Essentials of Anatomy and Physiology***. Boston: McGraw Hill.

Skirton, H. and Patch, C. (2002) ***Genetics for Healthcare Professionals a Lifestyle Approach***. Oxford: Bios Publishing.

Schechter, N.L., Berde, C.B. and Yaster, M. (2003) ***Pain in Infants, Children and Adolescents***. 2nd Ed. Philadelphia USA: Lippincott Williams and Wilkins.

Tотора, G.J. Funke, B.R. and Case, C.L. (2007) ***Microbiology: An Introduction***. San Francisco USA: Pearson Education.

Thompson, J.M. (1998) ***Nutritional Requirements of Infants and Young People***. Oxford: Blackwell Science.

Key Websites:

www.doh.gov.uk

Department of Health NSF (Medicines Management)

<http://www.rcpch.ac.uk>

Royal College of Paediatrics and Child Health

www.childgrowthfoundation.org

This website contains information which will be of benefit to parents with a child who has a diagnosed or suspected growth problem, to people who have a growth problem and their families, and to people and medical professionals.

www.ppprofile.org.uk

<http://www.doh.gov.uk/NSF/children.htm>

<http://www.resus.org.uk/pages/guide.htm>

Resuscitation UK Council Guidelines

<http://www.WHO.org>

The World Health Organization website

<http://mywebpages.comcast.net/wnor/respiratorymovements.htm>

The study of the thorax, with explanations and demonstration of respiratory processes

http://www.nao.org.uk/publications/nao_reports/9900230.Pdf

National Audit Office Report on Hospital Acquired Infections

http://europa.eu.int/comm/health/ph_determinants/environment/PP/pp_en.htm

Europe Public Health Web Site

help@rospa.com

The Royal Society for the Prevention of Accidents