Faculty of Health and Social Sciences

Postgraduate Scheme
in
Health Care

(88007)

Subject Description Forms

2008/09

July 2008
Published in July 2008, this booklet of Subject Description Forms contains information known as of July 2008. Contents of this booklet are subject to review and changes.
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HSS5901 Infection Control
HTI5152 Health Technology
HTI5607 Biomedical Science
HTI5715 Medical Imaging and Radiation Technology
RS590 Occupational Therapy
RS591 Physiotherapy
RS592 Rehabilitation of People with People with Developmental Disabilities
SN590 Nursing
SN592 Health Care

List of phased out subjects

The following subjects were offered in the Scheme previously but now have been phased out:

ABCT508 Physiology for Physical Scientists
HTI590 Dissertation - Medical Imaging and Radiation Technology
OR501 Introduction to Medical Imaging
OR502 Ultrasonography I (Instrumentation & Physical Principles)
OR503 Ultrasonography II (Abdominal)
OR504 Computed Tomography
OR505 Communication and Support in Oncology Care
OR506 Advanced Radiation Protection
OR507 Advanced Radiotherapy Planning & Dosimetry
OR508 Standards & Practice for Healthcare Professionals
OR512 Stereotactic Radiotherapy
RS513 Sports Physiotherapy I
RS516 Management of Sensorimotor Problems of People with Developmental Disabilities
RS522 Sports Physiotherapy II
RS525 Contemporary Physiotherapeutic Approaches in the Management of Adult Neurological Disorders
RS536 Rehabilitation for People with Developmental Disabilities -The Social & Political Context
RS551 Community Integration: Conceptual Issues, Programme Implementation and Outcome Measures
RS581 Advanced Practice and Clinical Integration in Sports Physiotherapy
SN510 Health Informatics
SN512 Measurement and Assessment in Education
SN513 Teaching and Learning Strategies
SN514 Working with Children with Special Needs
SN515 Chinese Health Psychology
SN538 Reflective Practice
SN550 Integrated Biomedical Science I
SN551 Integrated Biomedical Science II
SN555 Ethical Issues in Health Care
SUBJECT DESCRIPTION FORM

Subject title: Epidemiological Model Building for Healthcare and Risk Management

Subject Code: HSS5001

Credit value: 3

Submission Date: April 2005
(Revised Jan 2006)

Responsible staff and Department:
Ir Prof. Daniel W.T. Chan (BSE)
Mr Leung Kar Juen (AMA)

Pre-requisite: nil

Recommended background knowledge:
Students are recommended to have background knowledge of Epidemiology.

Exclusions: nil

Learning Approach:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Lecture</td>
<td>24 hours</td>
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<tr>
<td>Seminar</td>
<td>12 hours</td>
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<tr>
<td>Tutorial</td>
<td>6 hours</td>
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Assessment:

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Course work</td>
<td>100%</td>
</tr>
<tr>
<td>Case studies</td>
<td>60%</td>
</tr>
<tr>
<td>Written test</td>
<td>40%</td>
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</table>

Objectives:

1. To familiarize the basic epidemiological models.
2. To study the building services systems which sustain the healthy indoor environment and health risk arose from their operation.
3. To have hand on experience in measurements of indoor environmental quality parameters.
4. To apply epidemiological models in risk management of health care.

Keynote syllabuses:

1. Epidemiological Models:
   Classical statistic modeling, measure of disease-exposure association - relative risk and odds ratio, attributable risk; causal inference, confounding, adjustment of data, analysis of epidemiological data.

2. Understanding of Building Services Systems:
   Functions of a building, generalization of building services systems, building physiology, differentiation of comfort, health and safety, legislative requirements.
3. Indoor Environmental Qualities:
   Basic components of indoor environmental qualities, building sickness scores and building environmental quality indices, indoor environmental quality model, measurement principles of indoor environmental quality parameters.

4. Practice in Epidemiological Models:
   Practice in risk management by experiments in indoor space, practice in risk assessment by epidemiological models based on indoor environmental quality surveys and measurements.

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**Reading list:**


SUBJECT DESCRIPTION FORM

Subject title: Infection Control Practice  
Subject Code: HSS5002

Credit value: 3  
Submission Date: April 2005  
(Revised : May 2006)

Responsible staff and Department:  
Prof. Joanne Chung (SN)  
Prof. Li Yi (ITC)  
Dr Anthony Wong (SN)  
Visiting staff

Pre-requisite: nil

Recommended background knowledge: nil

Exclusions: nil

Learning Approach:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Lecture</td>
<td>23</td>
</tr>
<tr>
<td>Tutorial/Student Consultation</td>
<td>19</td>
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<tr>
<td>Total</td>
<td>42</td>
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</tbody>
</table>

Assessment:

Continuous course work  
- Seminar presentation  
- Written test  

50%  
50%

Objectives:

Upon completion of the subject, students will be able to:

1. Relate the professional’s responsibility in the use of scientifically accepted principles and practices of infection control and to monitor infection control practices of persons for whom he/she is responsible.

2. Discuss how pathogenic organism may be spread in health care settings and community.

3. Demonstrate strategies for prevention of transmission of pathogenic organisms.

4. Explain how the infection control concepts are applied in practice.

5. Evaluate the application of engineering controls and work practice control in infection control.

6. Apply and critique the reprocessing methods for assuring of safety and integrity of patient care environment.

7. Appraise strategies used in handling a bioterrorist attack.
Keyword syllabus:

1. Professional’s responsibility in infection control
   a. Standards of care in infection control
   b. Evidence-based practice

2. Pathogenic organism spread in health care settings and community
   a. Transmission of infection
   b. Vector-pathogen interactions

3. Strategies for prevention of pathogenic organisms transmission
   a. Transmission based precautions

4. Application of infection control concepts
   a. Surveillance and Breaking the chain of transmission
   b. Case studies on MRSA, VRE, C diff, HIV, TB and SARS

5. Application of engineering controls and work practice control
   a. Risk of exposure
   b. Work practice control

6. Reprocessing methods for assuring safety and integrity of patient care environment
   a. Contamination and decontamination
   b. Pre-cleaning, chemical disinfection, and sterilization of instruments and devices

7. Strategies used in handling a bioterrorist attack
   a. Prod Rome and diagnostic samples
   b. Infection control policy and post exposure prophylaxis

Indicative reading list and references:

On-line resources:
Centre for Disease Control and Prevention (http://www.cdc.gov/)
Infection control on-line (http://www.infectionctrl-online.com/modules/tinycontent/index.php?id=10)
JAMA consensus statements on key bioterrorist attack (http://jama.ama.assn.org)
The Association for Professionals in Infection Control and Epidemiology
(http://www.apic.org//AM/Template.cfm?Section=Home)
World Health Organization (http://www.who.int/csr/don/en/)

Journal:
Infection Control and Hospital Epidemiology
American Journal of Infection Control

Recommended Text:

Referenced text:
SUBJECT DESCRIPTION FORMS

DEPARTMENT OF
APPLIED SOCIAL SCIENCES
SUBJECT DESCRIPTION FORM

Subject Title: Concepts of Health and Health Care

Subject Code: APSS581

Credit Value: 3

Updated: June 2007

Responsible Staff & Department:
Dr Amy Ho (APSS)
Dr Wong Ching Wa (APSS)

Pre-requisites: Nil

Exclusions: Nil

Learning Approach:
This subject is designed to enable the student to appreciate the links between concepts and definitions of health and illness and health care provision. Particular emphasis will be placed on the ethical dimensions of health care and the opportunities and constraints afforded by health and welfare policies.

Contact hours:
- Lecture 24 hours
- Seminars / Tutorials 18 hours
Sub-total: 42 hours

Assessment (types & weighting):
Course Work (100%)
- Seminar & participation 40%
- Written assignment 60%

Objectives:
1. To enhance the student's awareness of socio-cultural concepts of health and health-care and their implications on health-care practice;
2. To explore in greater depth the frameworks and theories of ethics and health policy analysis;
3. To heighten the student's awareness of the ethical dimensions of health-care services in a modern social context;
4. To foster a critical approach in the evaluation of health policy formulation and implementation.

Syllabus:
1. Concepts and Models of Health and Health Care
   competing definitions of health and illness; the biomedical model: essence and its limitations; determinants of health; medical dominance
2. **Health Care policy**  
   policy frameworks and models; rationale and debates of government intervention in health care; forms of government intervention; power and structure of the health policy decision making structure; competing perspectives and application in Hong Kong; privatisation strategy and managerialism: origins and debates; setting up of the Hospital Authority: history, rationale and reform strategies; problem of health care financing: causes and solutions in Hong Kong.

3. **Health Care Ethics**  
   ethical theories and framework: health care ethics and modern social context, concepts of health and health care and their ethical implications; beneficence and nonmaleficence: obligatory beneficence, paternalism, patient rights and beneficence, privatization and nonmaleficence, letting die, mercy killing, euthanasia; patient rights and autonomy: informed consent, involuntary treatment, privacy, confidentiality; justice and resource allocation: micro and macro allocation of health care resources

**Reading List:**


SUBJECT DESCRIPTION FORM

Subject Title: Community Rehabilitation

Subject Code: APSS582

Credit Value: 3

Date of Submission: Dec 93
(revised June 98)

Responsible Staff & Department:
Dr Lee Tsor-kui (APSS)
Dr Eria Li (RS)

Pre-requisites: Nil

Recommended Background Knowledge: Nil

Exclusions: Nil

Learning Approach:

Contact Hours:

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<td>Lectures</td>
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<td><strong>Sub-total:</strong></td>
<td><strong>42 hrs</strong></td>
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(Teaching hours – APSS: 33 hours, RS: 9 hours)

Independent Study Hours:

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Assessment (type & weighting):

Course Work (100%)

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<td>Term Paper</td>
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Objectives:

On completion of the Subject the students should be able to:

1. explore and explain the concepts of community rehabilitation;
2. identify concepts related to community rehabilitation;
3. explore and explain the application of a variety of skills and approaches in implementing community rehabilitation;
4. explore and explain the application of a variety of skills and approaches in strengthening the community as a base for effective rehabilitation; and
5. identify and critique the role of professionals in community rehabilitation.
Syllabus:

   - definitions and different interpretations
   - community rehabilitation as a evolving concept

2. Concepts related to community rehabilitation:
   - paradigm shift in the field of rehabilitation
   - social construction of disability
   - deinstitutionalization
   - community care
   - community development
   - social support network
   - empowerment

3. Practice skills and approaches of community rehabilitation:
   - networking
   - support
   - self-help
   - community-based rehabilitation services
   - interdisciplinary teamwork and interagency collaboration

4. Application of skills and approaches in strengthening the community as a base for effective rehabilitation:
   - community building
   - community education
   - use of publicity and public relations
   - environmental adaptation
   - advocacy
   - use of volunteers
   - family/career support

5. Professionalism and community rehabilitation
   - critique on professionalism in rehabilitation
   - adaptive roles of professionals in community rehabilitation
   - integration of aprofessional approaches in community rehabilitation

Reading List:


SUBJECT DESCRIPTION FORMS

DEPARTMENT OF
HEALTH TECHNOLOGY AND INFORMATICS
SUBJECT DESCRIPTION FORM

Subject Title: Bioinstrumentation

Subject Code: HTI5111

Credit Value: 3

Date of Submission: March 92
(revised May 98)

Responsible Staff & Department:

Pre-requisites: Nil

Recommended Background Knowledge:

Some experience in using clinical instruments in the health care field.

Exclusions: Nil

Learning Approach:

Contact Hours:
  Lecture 27 hours
  Laboratory 15 hours
  Sub-total: 42 hours

Independent Study Hours:
  Self-study 60 hours
  Assignments 20 hours
  Laboratory reports 20 hours
  Sub-total: 100 hours

Assessment (types & weighting):

Course Work (100%)
  Assignment(s)/Test(s) 70%
  Seminar 15%
  Laboratory report 15%

Objectives:

Graduates from the health care field encounter a large variety of instruments that measure or operate on physical quantities in their professional practice. However, their desire to fully utilize these instruments is often hampered by a lack of knowledge in instrumentation. This course aims to provide a solid understanding of the building blocks of modern instrumentation. This knowledge enables the student to

1. intelligently use PC based instrumentation systems.
2. realistically determine the functional and technical specifications of instruments required for a given measurement.
Syllabus:

1. Instrumentation measuring process
   - Physiological events
   - Sensors and electronic instruments
   - Illustrative examples
2. Application of personal computers
   - Description of building blocks
   - Interfacing with other equipment
   - Software
3. Sensors
   - Transducers for mechanical parameters
   - Temperature transducers
   - Photoelectric transducers
   - Electrodes
   - Special consideration in biomedical applications
   - Biomechanical transducer systems and applications
4. Signal conditioners and processors
   - Amplifiers
   - Integrator, differentiator
   - Filters
   - Signal to noise ratio enhancement devices
5. Displays and records
   - Meters
   - Oscilloscopes
   - Chart recorders/plotters
   - Magnetic recorders
   - Data loggers
6. Electrical safety
   - Electrical hazards
   - Physiological effects
   - Accident prevention
7. Bio-telemetry
   - Components of a bio-telemetry system
   - Modulation techniques
   - Illustrative examples.

Laboratory:

1. Introduction to A/D and D/A conversion.
2. Simulation of a physiological signal using a PC.
3. Automated collection and graphing of a physiological variable using a PC.
4. Stimuli generation and response measurements using a PC.
5. Signal enhancement.

Reading List:


SUBJECT DESCRIPTION FORM

Subject Title: Bioelectric Potentials          Subject Code: HTI5112

Credit Value: 3          Date of Submission: March 2001

Responsible Staff & Department: Dr Raymond Tong (HTI)

Pre-requisites: Nil

Exclusions: Nil

Learning Approach:

Contact hours:
- Lecture & Tutorial 127 hours
- Laboratory 12 hours
- Seminars 3 hours
Subtotal: 42 hours

Independent study hours:
- Self-study 50 hours
- Assignments 35 hours
- Laboratory reports 12 hours
- Seminar papers 10 hours
Subtotal: 107 hours

Assessment (types & weighting):

Continuous Assessment 65%
Assignments and Laboratory Reports
Seminar paper & presentation
Final Examination 35%

Objectives:

1. To understand bioelectric phenomena of human muscles and nerves.
2. To solve clinically relevant bioelectrical problems.

Syllabus:

1. Review of the basic physiology of muscles and nerves
   - Structure, synapse, and ion pumps
   - Resting membrane potentials
   - Action potentials
   - Passive potentials in limbs

2. Sub-threshold membrane phenomena
   - Ion diffusion and Fick’s law
   - Electric potentials and Ohm’s law
   - Energy conservation at equilibrium: Nernst Equation and Goldman-Hodgkin-Katz Equation
   - Cable equation of the axon
3. Active Membrane
   - Voltage clamp
   - Membrane capacitance and conductance
   - Nerve impulse propagation and Hodgkin-Huxley model
   - Patch clamp measurement techniques
4. Volume source and volume conductor
   - Monopole, dipole, and Quadrupole
   - Basic models of the volume conductor
   - Tissue resistivities
   - Forward and inverse problems
5. Source-field models
   - Source model of rigorous formulation
   - Isolated axon and nerve trunk
   - Transmembrane current source
   - Equivalent source density
6. Lead vector and lead field
   - Solid angle theorem
   - Definition of the lead vector and image surface
   - Einthoven, Frank, and Burger triangles
   - Definition of the lead field and reciprocity theorem
7. Clinical electrophysiology I
   - 12-Lead ECG system
   - The basis of ECG diagnosis
   - Cardiac pacing
   - Cardiac defibrillation
8. Clinical electrophysiology II
   - Electroencephalography
   - Nerve conduction studies and compound muscle action potentials
   - Electromyography
   - Evoked potentials: Somatosensory evoked potentials, visual evoked potentials, auditory evoked potentials

Reading List:

SUBJECT DESCRIPTION FORM

Subject Title: Biomedical Signal Processing

Subject Code: HTI5113

Credit Value: 3

Date of Submission: March 2001

 Responsible Staff & Department: Dr Yongping Zheng (HTI)

Pre-requisites: Nil

Exclusions: Nil

Learning Approach:

Contact hours:
Lecture & Tutorial 27 hours
Laboratory 12 hours
Seminars 3 hours
Subtotal: 42 hours

Independent study hours:
Self-study 50 hours
Assignments 35 hours
Laboratory reports 12 hours
Seminar papers 10 hours
Subtotal: 107 hours

Assessment (types & weighting):

Continuous Assessment       65%
Assignments and laboratory reports
Seminar paper & presentation
Final Examination            35%

Objectives:

1. To learn signal processing techniques for biomedical signals.
2. To understand software aspects of clinical instruments.

Syllabus:

1. System block diagram and instrumentation software
   - Signals and Systems
   - The z-Transform
   - Digital filters
   - Matlab software

2. Applications of spectral estimation
   - Analysis of the Doppler signal using the periodogram
   - Analysis of AEPs using the periodogram
   - Analysis of heart rate variability using the periodogram
   - Cepstrum analysis: ECG signal, diastolic heart sound, speech signals
3. Applications of adaptive noise cancelling
   - Enhancement of ECG monitoring
   - Enhancement of fetal ECG monitoring
   - Enhancement of electrogastric measurements

4. Applications of adaptive line enhancer
   - Enhancement of the activation wave from the His-Purkinje system
   - Enhancement of ventricular late potentials
   - Enhancement of diastolic heart sounds

5. Applications of adaptive zero-tracking method
   - Tracking of EEG signals for detecting epileptic patients
   - Tracking of VEPs for detecting multiple sclerosis patients

6. Applications of autoregressive method
   - Modelling of seizure EEG
   - Modelling of knee vibration signals
   - Modelling of ECG signals
   - Modelling of fetal breathing movement
   - Modelling of arterial blood pressure and pulse interval in free-moving subjects
   - Modelling of EEG signals during neurosurgical operations
   - Modelling of surface EMG
   - Modelling of heart rate variability
   - Modelling of lung sounds

7. Applications of autoregressive moving average method
   - Modelling of SEPs
   - Modelling of diastolic heart sounds
   - Modelling of cutaneous electrogastric signals

8. Applications of neural network and wavelet transform
   - Decomposition of EMG
   - Muscle fatigue monitoring
   - ECG classification and compression
   - Medical image segmentation and compression

Reading List:


Subject Title: Applied Biosignal Processing

Subject Code: HTI5115

Credit Value: 3

Date of Submission: Feb 2007

Responsible Staff and Department: Dr Yongping Zheng (HTI)

Pre-requisites: Nil

Exclusions: Nil

Learning Approach:

Contact hours:
Lecture & Tutorial 21 hours
Laboratory 21 hours
Subtotal: 42 hours

Independent study hours:
Self-study 50 hours
Assignments 10 hours
Laboratory reports 30 hours
Reviewing reports 10 hours
Subtotal: 100 hours
Total hours: 142 hours

Assessment (type and weighting):

Continuous Assessment: 100%
Assignments and laboratory reports 50%
Reviewing report & presentation 20%
Tests 30%

Learning Outcomes:
- To learn application-oriented signal processing techniques for biomedical signals.
- To apply biosignal processing techniques for real biomedical signals.
- To practise biomedical signal processing using Matlab software

Syllabus:
1. Signals and systems for understanding biosignal processing;
2. Considerations for biosignal processing during data collection and experimental design
3. Use Median filter and moving average for smoothing biosignals.
4. Use cross-correlation for biosignal registration
5. Use adaptive filters for separation of mixed signals
6. Use wavelet to enhance signal
7. Matlab programming
8. Automatic tracking of ultrasound echoes
9. Spectrum analysis for EMG signal during muscle fatigue
10. Enhancement of EEG signal using averaging
11. Adaptive filtering for fetus ECG

Reading Materials:

- IEEE Transactions on Biomedical Engineering.
### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Title:</th>
<th>Biomechanics</th>
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<thead>
<tr>
<th>Responsible Staff and Department:</th>
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<tbody>
<tr>
<td>Prof. Daniel H.K. Chow (HTI)</td>
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<tr>
<td>Prof. Arthur F.T. Mak (HTI)</td>
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### Learning Approach:

Contact hours:
- Lectures: 22 hours
- Tutorials/Tests: 11 hours
- Group Paper & Presentation: 9 hours
  Sub-total: 42 hours

Independent study hours:
- Self-study: 40 hours
- Assignments: 10 hours
- Group Paper & Presentation: 50 hours
  Sub-total: 100 hours

### Assessment (types & weighting):

- Course Work (100%)
  - Assignments: 30%
  - Interdisciplinary Group Paper and Presentation: 50%
  - Tests: 20%

### Objectives:

To enable students to apply basic mechanical concepts to the study of human body in equilibrium and in motion.

### Syllabus:

1a. Basic Functional Anatomy: examples lower extremity and spine
1b. Basic Statics
   - Equilibrium of Forces and Free Body Diagrams
2. Static Equilibrium in the Musculoskeletal System
   - Peripheral Joints
   - Prosthetics and Orthotics
   - Therapeutic Biomechanics
   - Spine
3. Statically Indeterminate Problem
4a. Kinematics and Dynamics of Skeletal Motions
   - Time Dependent Vector & Basic Dynamics
4b. Muscle Physiology & Basic Motor Control
5. Sports Biomechanics


Selected readings from immediately current reviewed articles in biomechanics, therapeutic and medical journals.
SUBJECT DESCRIPTION FORM

Subject Title: Gait Biomechanics
Subject Code: HTI5122

Credit Value: 3
Date of Submission: March 2001

Responsible staff and department:
Dr Raymond Tong (HTI)
Prof. Daniel H.K. Chow (HTI)

Pre-requisite: Nil

Recommended background knowledge:
1. Basic knowledge in mechanics
2. Ability to use computer based equipment

Exclusions: Nil

Learning Approach:

Contact hours:
- Lecture/Seminar 24 hours
- Laboratory/Demonstration 18 hours
Sub-total: 42 hours

Independent study hours:
- Self-study 60 hours
- Assignments 20 hours
- Laboratory reports 20 hours
Sub-total: 100 hours

Assessment (types & weighting):

Continuous Assessment (100%)
- Assignments 35%
- Laboratory report(s) 35%
- Test 30%

Objectives:
1. To introduce the types, mechanisms and principles of modern clinical movement analysis systems.
2. To provide the knowledge and technique for conducting 2-dimensional and 3-dimensional movement analyses.
3. To enable students to apply biomechanical concepts for calculating movement parameters.
4. To introduce the patho-physiological meaning of various movement parameters and their applications in movement analysis.
5. To critically explore various biomechanical models in movement co-ordination.
Syllabus:

1. Basic Background Knowledge
   - Three-dimensional Coordinate Geometry
   - Matrix Analysis
   - Kinematics and Kinetics, Myoelectric Activity
   - Body Segment Parameters
   - Normal Human Gait

2. Types, Mechanisms and Principles of Modern Clinical Movement Analysis Systems
   - Video-Based Motion Analysis System
   - Force Platform
   - Electromyography (EMG)
   - Pedobarography
   - Force Transducer for P&O Application & Walking Aids
   - Introduction to Portable Gait Analysis Systems
   - Calibration of Measuring Instruments
   - Energy Consumption of Locomotion Activities

3. Quantification of Normal and Pathological Movements
   - Digital Filtering of Raw Data
   - 2-Dimensional and 3-Dimensional Joint Angles
   - Angular Velocity and Acceleration of Various Joints
   - Bending Moment and Power at Various Joints
   - Phasic Activities of Various Muscles

4. Applications with Clinical Examples
   - Selective Examples for Patients with Cerebral Palsy, Stroke, Lower Limb Amputation, etc.
   - Performance Enhancement in Sports Coaching
   - Biomechanical Models for Movement Control and Coordination

Reading List:


## SUBJECT DESCRIPTION FORM

<table>
<thead>
<tr>
<th>Subject Title:</th>
<th>Mechanics of Living Tissues and Systems</th>
<th>Subject Code: HTI5123</th>
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<tr>
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<td>May 96 (revised May 98)</td>
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<td>Prof. Arthur F T Mak (HTI)</td>
<td>Prof. Daniel H K Chow (HTI)</td>
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<td>Pre-requisites:</td>
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<td>Exclusions:</td>
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### Learning Approach:

Students will be required to read widely and, in specific areas, also in depth. Assignments will be based on literature searches and experiments/demonstrations. Tutorial will be held using selected assignment reports as a nucleus. Some tutorials will also be devoted to problem identification and solving, especially in relation to the more numerate sections of the course. Seminars material to be incorporated and pertinent cases to be studied in depth.

### Contact Hours:

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<td>Tutorial</td>
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<tr>
<td>Laboratory</td>
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### Independent Study Hours:

<table>
<thead>
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<th></th>
<th>Hours</th>
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<tr>
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<td>48</td>
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<td>Laboratory Report</td>
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### Assessment (types & weighting)

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<td>Laboratory Report</td>
<td>20%</td>
</tr>
<tr>
<td>Interdisciplinary Paper and Presentation</td>
<td>50%</td>
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</table>
Objectives:

1. To provide a broad understanding of the relation of structure and physical function in musculoskeletal system.
2. To consider, both quantitatively and qualitatively, the performance of selected subsystem so as to provide model examples of interactions in normal and deranged tissue systems.
3. To develop a critical and constructive approach to the researching of current literature and to explore the potential of applying rigorous criteria in a clinical context.

Syllabus:

1. Basic biomechanics of the musculoskeletal system to be considered at four levels:
   .tissue components - cellular, fibrous and amorphous
   .individual tissue - hard, soft and fluid; active and passive
   .functional units - diarthrodial joint, spinal motion segment
   .functional systems - limbs, trunk and whole body
2. Biomechanics of deranged connective tissue systems. Comparisons made with normal tissues under headings outlined in 1 above.
3. Modelling of tissues and biological structures
5. Functional properties of artificial materials and the modified augmented biological structures.
6. Basic concepts in material science, statics and mechanics of deformable bodies will be introduced in the above context.

Reference List:

(Notes and some relevant review material will be issued)


Selected readings from current reviewed articles in biomechanics, therapeutic and medical journals.
SUBJECT DESCRIPTION FORM

Subject Title: Biomaterials and Tissue Engineering

Subject Code: HTI5124

Credit Value: 3

Date of submission: 2007

Responsible Staff & Department:

Dr Mo YANG (HTI)
Dr Thomas LEE (HTI)

Dr Mo Yang: e-mail: htmems@polyu.edu.hk, Tel: 2766 4946; Office: ST 419
Dr Thomas Lee: e-mail: htmhlee@inet.polyu.edu.hk Tel: 2766 4931; Office: ST 416

Pre-requisites: Nil

Exclusions: none

Recommended Background Knowledge: Knowledge in biomaterials science and engineering

Learning Approach:

Students are required to attend the class and research seminars. They are exposed to various facets of biomaterials research and development. They are also provided with the latest development in the recently emerged field of tissue engineering. Students are given assignments and need to make presentations.

Contact Hours:

Lectures/Seminars 30 hours
Quizzes/Group discussions/Presentation 12 hours
Sub-total: 42 hours

Independent Study Hours:

Self-study 60 hours
Assignment 25 hours
Preparation for presentation 20 hours
Sub-total: 105 hours

Assessment (types & weighting)

Course work (100%)
Tests (30%)
Assignment and presentation (25%)
Individual Project Paper (45%)

Objectives:

At the end of the subject, students are expected to be able to:

− Appreciate biomaterials that have been successfully developed and used in human bodies
− Understand the most recent developments in biomaterials and tissue engineering
− Aware of interconnecting issues in biomaterials research and development
− Use, through case studies, the appropriate techniques and right strategies in the successful development of new biomaterials for medical applications

Syllabus:

1. Bioactive glass and glass ceramics
2. Bioactive composites
3. Plasma sprayed bioactive coatings

4. Blood Contacting biomaterials

5. Surface Characterization in Vacuum XPS/ESCA, AES, SIMS, Contact Angle, AFM

6. Long term performance of biomaterials

7. Ethnic Consideration

8. Tissue engineering: principles

9. Tissue engineering: applications

References:

1. D. Shi (ed.) Biomaterials and tissue engineering, Berlin; New York: Springer, 2004


**SUBJECT DESCRIPTION FORM**

**Subject Title:** Neuromuscular Control  
**Subject Code:** HTI5125

**Credit Value:** 3  
**Date of Submission:** February 1999

**Responsible Staff & Department:** Dr Raymond Tong (HTI)

**Pre-requisites:** REC520 “Biomechanics” or consent of instructor

**Exclusions:** Nil

### Learning Approach:

**Contact hours:**

- Lecture & Tutorial: 33 hours
- Laboratory: 6 hours
- Seminars: 3 hours

Sub-total: 42 hours

**Independent study hours:**

- Self-study: 50 hours
- Assignments: 35 hours
- Laboratory Reports: 12 hours
- Seminar Papers: 10 hours

Sub-total: 107 hours

Total hours: 149 hours

### Assessment (types & weighting):

- Continuous Assessment: 65%
  - Assignments and Laboratory Reports
  - Seminar paper & presentation
- Final Examination: 35%

### Objectives:

1. To learn the control elements of neuromusculoskeletal systems.
2. To establish the theoretical foundation of human movement analysis and functional neuromuscular stimulation.
Syllabus:

1. Review of human motor system
   - Neuronal elements in spinal cord motor circuitry
   - Recruitment and rate coding
   - Interactions of cerebellum, basal ganglia and cerebral cortex
   - Feedback, synergies and hierarchical control, motor learning

2. Concepts of modern control theory
   - Transfer functions
   - Block diagrams
   - Feed-forward control
   - Feedback control

3. Control diagrams of neuromusculoskeletal systems
   - Neural control commands
   - Muscles activation dynamics
   - Muscles contraction dynamics
   - Skeletal dynamics

4. Motor control strategy
   - Aimless and goal-directed movements
   - Equilibrium point hypothesis
   - Inverse dynamics
   - Optimal controllers and neural network controllers

5. Functional neuromuscular stimulation (FNS)
   - Restoration of motor function for spinal-cord-injury patients
   - Control diagram of FNS
   - Stimulus modulation
   - Merits and drawbacks

Reading List:


Subject Title: Clinical Biomechanics  

Subject Code: HTI5126

Credit Value: 3  

Date of Submission: Feb 2007

Responsible Staff and Department(s): Prof. Daniel HK Chow (HTI)

Pre-requisites: Nil

Recommended Background Knowledge: Nil

Exclusions: Nil

Learning Approach:

Contact hours:  
- Lectures/Seminars 30 hours
- Tutorials 12 hours

Sub-total: 42 hours

Independent study hours:  
- Self-study 40 hours
- Assignments 10 hours
- Paper & Presentation 50 hours

Sub-total: 100 hours

Total: 142 hours

Assessment (types & weighting):

Continuous Assessment 100%
- Assignments 30%
- Paper and Presentation 35%
- Test 35%

Objectives:

At completion of the subject, students should be able to apply biomechanical concept to appreciate and analyze the pathomechanics of common musculoskeletal disorders.
Syllabus:

Various clinically relevant musculoskeletal disorders, such as low back disorder, neck pain, foot disorder, pressure ulcer and bone fracture, will be used as examples to illustrate the application of biomechanical principles for understanding the normal functions of the musculoskeletal system, investigating possible causes of the disorders, evaluating the level of severity as well as devising possible treatments for the disorders. Biomechanics of the disorders will be appreciated at the tissue, organ and system levels.

References:


Selected readings from current reviewed articles in biomechanics and therapeutic journals.
SUBJECT DESCRIPTION FORM

Subject Title: Nanobiotechnology

Subject Code: HTI5127

Credit Value: 3

Date of Submission: Feb 2007

Originating Staff & Department:
Dr Thomas Lee (HTI)
Dr Mo Yang (HTI)

Pre-requisite: Nil

Recommended Background Knowledge: Nil

Exclusions: Nil

Learning Approach:

Contact hours:
- Lecture/Tutorial/Laboratory: 39 hours
- Seminars: 3 hours
- Sub-total: 42 hours

Independent Study hours:
- Self-study: 70 hours
- Assignments: 8 hours
- Seminar Preparation: 20 hours
- Sub-total: 98 hours
- Total hours: 140 hours

Assessment:

Continuous Assessment 60%
Assignments and Laboratory Reports
Seminar Paper & Presentation
Final Examination 40%

Objectives:

At the completion of the subject, students should be able to:
- discuss the fundamentals of biofunctionalized nanostructured materials;
- apply the unique properties of these bio-nanomaterials for novel biomedical, biotechnological, as well as electronics applications;
- analyze the performance of these nanoscale technologies as compared to their macro- or micro-scale counterparts;
- integrate knowledge of chemistry, biology, and engineering to design nano-enabled devices;
- identify promising areas/future directions in the nanobiotechnology field;
- appraise the value of nanobiotechnology in scientific, economic, social, and environmental contexts.
Syllabus:

Introductory overview; preparation, characterization, and properties of nanostructured materials (e.g., metal nanoparticle, quantum dot, carbon nanotube, polymeric nanocarrier, and silica nanoparticle); biofunctionalization of nanomaterials (e.g., cell, nucleic acid, and protein); applications of biofunctionalized nanomaterials (e.g., diagnostics and screening technologies, drug delivery); nanofabrication/nanopatterning techniques and applications in implants, prostheses, and tissue engineering; DNA nanostructures and DNA-templated electronics; toxicity, health, and environmental issues.

Reading List:

**SUBJECT DESCRIPTION FORM**

**Subject Title:** Assistive Technology

**Subject Code:** HTI5131

**Credit Value:** 3

**Date of Submission:** Jan 94

(revised May 98)

**Responsible Staff & Department:** Dr Eric Tam (HTI)

**Pre-requisites:** Nil

**Exclusions:** Nil

**Learning Approach:**

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**Assessment (types & weighting):**

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<td>Tests</td>
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<td>Seminar</td>
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</tr>
<tr>
<td>Laboratory report</td>
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**Objectives:**

The Subject aims to provide a good background on current technical solutions and their limitations for persons who suffer from either physical or sensory disabilities. This knowledge will enhance the quality of care to the disabled in the appropriate provision of assistive devices. Five Hands-on laboratory sessions complement and reinforce lecture material.


Syllabus:

This Subject is concerned with the application of technology for the disabled. Assistive technology is multi-
disciplinary in nature and the team approach is the preferred clinical approach in the provision of assistive devices.
The ideal team consists of medics, paramedics and rehabilitation engineers. As a first course on assistive technology,
this subject is appropriate for both paramedics and engineers concerned with rehabilitation. Although the treatment is
from a technical viewpoint, it will be structured to make it accessible to candidates with a health care background.

1. Aids for the physically disabled
   a. Devices for communication
      - Ability switches
      - Communication boards
      - Computer access
      - Environmental controls
      - Neuroprosthesis
   b. Devices for mobility
      - Standing and walking aids
      - Manual wheeled mobility aids
      - Electric wheeled mobility aids
   c. Special Seating
      - Position for function and pressure relief
      - Cushions
      - Credit and custom contoured body supports
      - Interfacial pressure measurement techniques
   d. Devices for daily living

2. Sensory aids
   a. Aids for the blind
   b. Aids for the deaf

3. Aids for evaluation and training

4. Emerging technologies
   a. Robotics
   b. Virtual reality

Laboratory:

1. Ability switch construction and toy modification
2. Communication boards and Computer access: Techniques and evaluation
3. Manual wheelchair measurements and performance
4. Special seating: Fitting and cushion production
5. Special seating: Evaluation

Reference List:


Subject Title: New Initiatives in Orthotic Management of Idiopathic Scoliosis  
Subject Code: HTI5132

Credits: 3

Responsible Staff & Department:  
Dr M. S. Wong (HTI)

Pre-requisites: Nil

Recommended Background Knowledge:  
Candidates are highly recommended to have the background knowledge in spine biomechanics and spinal orthotics (theory and practice).

Exclusion: Nil

Learning Approach:

Contact Hours:  
- Lecture: 14 hours  
- Tutorial: 3 hours  
- Demonstrations: 7 hours  
- Practical: 18 hours  
Sub-total: 42 hours

Independent Study Hours:  
- Self-study: 65 hours  
- Assignment: 35 hours  
Sub-total: 100 hours

Assessment:

Continuous Assessments 100%  
- Written Assignment 50%  
- Practical Assignment 50%

Objectives:

The objectives of this subject is to introduce to the students the background knowledge and application of new techniques used in orthotic management of idiopathic scoliosis, the limitations of existing systems and the latest development, and also the future development and potential applications of such techniques. Each topic will begin with a review of the associated clinical issues and the bioengineering principles involved with the solutions to be introduced. Students would have ample opportunities to gain hands-on experiences in such new techniques and technology.
Syllabus:

The anatomical review of vertebral column and spine biomechanics.
1. The clinical review and pathogenesis of idiopathic scoliosis.
2. The principle and practice of part-time orthotic management for idiopathic scoliosis such as the Charleston Lateral Bending Orthosis.
3. The principle and practice of detorsion orthotic management for idiopathic scoliosis such as Cheneau Orthosis.
4. The principle and practice of audio biofeedback postural training device, Micro Straight for idiopathic scoliosis.
5. The principle and practice of the flexible dynamic orthosis, SpineCor and TriaC for harmonic development of the spine.
6. The trend and development of other new techniques in orthotic management of idiopathic scoliosis.

(The relevant clinical assessments including muscular activities using EMG, measurements, design, fabrication, fitting, checkout procedure and outcome evaluation of the aforesaid interventions are included.)

References List:

(Notes and some relevant review materials will be issued)
Spinal Orthotics for Orthotists (1996) Prosthetic-Orthotic Center, Northwestern University Medical School.

Subject Title: Rehabilitation Engineering  

Subject Code: HTI5134

Credit Value: 3  
Date of Submission: Feb 2007

Responsible Staff and Department(s):  
Dr Eric Tam (HTI)

Pre-requisites: Nil

Recommended Background Knowledge: Nil

Exclusions: Nil

Learning Approach:
There will be lectures, seminar as well as laboratory sessions.

Contact Hours:
- Lectures/Seminar: 27 hours
- Laboratories: 15 hours
  Sub-total: 42 hours

Independent Study Hours:
- Self-study: 60 hours
- Assignments: 25 hours
- Laboratory Reports: 15 hours
  Sub-total: 100 hours

Total: 142 hours

Assessment (types & weighting):
Course Work (100%)
- Assignments, lab reports and projects: 70%
- Quiz: 30%

Objectives:
This subject aims to provide students a good background on current engineering solutions and their limitations for persons who suffer from physical or sensory impairments. This knowledge will enhance the students’ ability to provide quality of care to the people with disabilities thorough the provision of appropriate rehabilitation engineering devices.

Syllabus:
This subject is concerned with the application of engineering solutions for people with disabilities. Rehabilitation is multi-disciplinary in nature and the team approach is the preferred clinical approach in the provision of rehabilitation engineering devices. The ideal team consists of medical and health professionals and rehabilitation engineers. This subject is appropriate for professionals concerned with rehabilitation.
The contents of this subject covers:

a. Augmentative and Alternative Communication Devices  
b. Sensory Aids for Hearing and Visual Impairments  
c. Seating and Mobility Devices  
d. Prosthetics and Orthotics Technology  
e. Evaluation and Training Technology  
f. CAD/CAM Application in Rehabilitation  
g. Human-Machine Interface and Universal Design  
h. Emerging Technologies

References:

SUBJECT DESCRIPTION FORM

Subject title: Intellectual Property, Standards and Regulation of Medical Devices

Subject code: HTI5151

Credit value: 3

Date of Submission: 19 March 2004

Responsible staff & Department: Dr Raymond Tong (HTI)

Pre-requisites: Nil

Recommended background knowledge: Nil

Exclusions: Nil

Learning approach:

Students will be required to learn to conduct patent searches, will read widely on intellectual property issues and, in specific areas, also in depth. Students will be arranged into a small group of three to four persons to write a group paper and deliver a seminar presentation. For example, they will be practising writing a patent with an example of a medical device.

Guest lecturers will be invited to discuss the legal aspects and formal procedures to apply and file a patent application, and issues related to contested patents and patent defense.

Contact hours:

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<th>Activity</th>
<th>Hours</th>
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Independent study hours:

<table>
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<tr>
<th>Activity</th>
<th>Hours</th>
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<tr>
<td>Self-study</td>
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<td>Assignments</td>
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Assessment (types & weighting):

Continuous Assessment (100%)

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<tr>
<td>Tests</td>
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Objectives:

To give those professionals working in the development and use of medical devices and health care clinics, practical knowledge about intellectual property, standards and regulations, and their relationship to quality health care and associated biomedical technology. Knowledge on medical device design, product development, quality assurance, and regulatory requirements and techniques is an essential part of every medical device development process. This subject is to address the important issues related to developing and using a safe and reliable medical device, and to understand how to meet the regulatory requirements. Moreover, patent defence and intellectual property protection are important to protect each medical product and the company and will be introduced.
Syllabus:
1. Basic knowledge on intellectual property, such as patents, copyrights and trademarks
2. U.S. Patent system, European Patent Convention, China patent system, other patent systems, Patent Treaties,
3. Patent search, and patent filling procedures
4. Copyright ownership and protection
5. Technology transfer with examples of standard license agreement for technology transfer
6. Food and drug administration (FDA) regulations, U.S. Food and Drug law, Medical device Classification,
   medical device approval, Preparing FDA submission,
7. ISO (International Organization for Standards) standards, ISO 9000 set of standards
8. European Standards and regulations (BSI, CEN, DIN, etc.)
9. China and Hong Kong standards and regulations
10. Software patent and standards
11. Hazard, safety and risk analysis, biocompatibility, reliability and quality assurance
12. Accessibility and flexibility for persons with disability
13. Ethics issues on clinical research about medical devices on human subjects

Indicative reading list and references:
3. Bronzino JD, The Biomedical Engineering handbook, Section XIX, Regulations and Organizations, 1995, CRC
   Press
4. Bronzino JD, Management of medical technology, a primer for clinical engineers, Butterworth-Heinemann,

Websites
5. FDA http://www.fda.gov/
SUBJECT DESCRIPTION FORM

Subject title: Independent Study in Biomedical Engineering
Subject code: HTI5153

Credit value 3
Date of Submission: June 2004
(revised: 7 September 2006)

Responsible staff and department: Dr Aaron K. L. Leung (HTI)

Recommended background knowledge: Nil

Exclusions: Nil

Special Note to Students:
Consent of subject instructor together with the endorsement of the subject leader must be obtained BEFORE subject registration.

Learning approach:
Students will be required to undertake guided independent study in depth on a topic mutually agreed upon with the instructor. The student will read widely on the scientific issues and, in specific areas, also in depth. Students may be arranged into a small group of three to four persons to undertake cooperative studies of a subject in tutorial sections with the instructor.

Contact hours:
- Tutorial Contact per Indep. Study: 14 hours
- Guided Self-Study: 84 hours
- Mini Project: 42 hours
- Total: 140 hours

Assessment:
- Continuous Assessment
  - Tutorial participation: 10%
  - Assignments: 60%
  - Mini Project: 30%

Objectives:
To facilitate a student who has a particular interest in certain biomedical engineering topic to pursue an independent study in that area under special supervision. If the student enrolment of a particular biomedical engineering subject in a particular term is small, an individual student who meets the subject pre-requisites could register to independently study that BME subject under personal guidance of an instructor.

Syllabus:
The student is expected to study in depth in an specific biomedical engineering topic mutually agreed upon with the instructor.
Indicative reading list and references:

Relevant texts and journal articles will be assigned based on the specific area of study under supervision of the instructor. In addition, the student should take note of the following guides to independent study:


SUBJECT DESCRIPTION FORM

Subject title: Clinical Engineering
Subject code: HTI5154

Credit value: 3
Date of Submission: 1999
Revised: Oct 2005

Responsible staff & Department:
Dr Eric Tam (HTI) (Subject Coordinator)
Dr James O. Wear (Visiting Professor)

Pre-requisites: Nil

Recommended background knowledge:
Basic electrical/mechanical engineering knowledge

Exclusions: Nil

Learning approach:

Contact hours:
- Lecture/Tutorial: 36 hours
- Clinical Visit: 3 hours
- Seminar: 3 hours
- Total: 42 hours

Teaching-learning methods:
The contact hours include time for lecture/seminar and laboratory. Besides the contact hours, the students are required to study independently. The expected hours of the independent study should include:
- Self-study: 72 hours
- Assignments: 20 hours
- Report of Clinical Visit: 6 hours
- Total: 98 hours

Assessment (types & weighting):
The assessment is based on 65% course work and 35% examination. The written assignments require the students to broaden or study in depth on individual topics. The seminar requires the student to present the result of their work through effective communication approach. The examination will be used to evaluate the student’s understanding on the materials covered in the course.

<table>
<thead>
<tr>
<th>Course Work</th>
<th>65%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td></td>
</tr>
<tr>
<td>Seminar Presentation</td>
<td></td>
</tr>
<tr>
<td>Written Report</td>
<td></td>
</tr>
<tr>
<td>Final Examination</td>
<td>35%</td>
</tr>
</tbody>
</table>
Objectives:

Upon completion of this subject, students will be able to:
- Understand the role of a clinical engineer
- Be able to design a clinical engineering management program
- Describe information systems used in clinical engineering practice
- Conduct impact analysis in technology management
- Apply selection and procurement strategies for medical equipment
- Understand general approach to troubleshooting, and apply preventive maintenance techniques for common medical equipment
- Ensure equipment safety, conduct risk management and quality assurance
- Appreciate the interaction of clinical engineering and medical staff

Syllabus:

- Clinical engineering: an overview
- Maintenance and service management: elements of an equipment control program, determining and organizing technical workload, service quality, equipment maintenance and replacement planning and procedures
- Impact analysis: technology management in preventive, primary and tertiary care, strategic planning, asset management
- Selection and procurement strategies for medical equipment
- Information systems: principles of database management, documenting service work performed, parts management, contract management, inventory and records management
- Technology assessment: role of technology assessment in technology planning, principles and practice of medical technology assessment methodology, role of clinical engineering professional in assessing medical technology
- Resource allocation and Human resources development: budget, business plan, marketing and selling services, financial management, defining job roles and responsibilities, performance evaluation and training
- Safety, risk management and quality improvement
- Technical aspect of medical devices: troubleshooting concepts and applications

Reading list:


SUBJECT DESCRIPTION FORM

Subject Title: Epidemiology

Subject Code: HTI5601

Credit Value: 3

Date of Revision: April 2002
(Revised Feb 2006)

Responsible Staff & Department: Dr Maureen Boost (HTI)

Pre-requisite: Nil

Recommended Background Knowledge: Knowledge of research methods and data analysis is strongly recommended.

Exclusions: Nil

Learning Approach:

Contact hours:
- Lecture 25 hours
- Seminar / Tutorial 15 hours
Sub-total: 40 hours

Independent Study Hours:
- Reading / Self-studying 50 hours
- Seminar preparation 25 hours
- Written assignment 25 hours
Sub-total: 100 hours

Assessment (types & weighting):

Course Work (100%)
- Seminar work 40%
- Written assignment 30%
- Written test 30%

Objectives:

Upon completion of this subject, students will be able to:

1. demonstrate understanding of the basic concepts of epidemiology.
2. identify sources and use epidemiological data and information.
3. critically review epidemiological studies to assess their usefulness for research and health planning.
4. demonstrate understanding of the epidemiological considerations for the planning and evaluation of health activities, services or programmes.
Syllabus:

1. Basic concepts of epidemiology: development of epidemiological methods, causality, validity.
2. Sources of epidemiological information: demography, mortality and morbidity statistic, disease mapping, prevalence and incidence.
3. Infectious disease epidemics: investigation and management; application of epidemiological methods in the control of disease in Hong Kong.
5. Epidemiological methods: descriptive studies, cohort studies, case control studies, intervention studies.
6. Health planning and evaluation.
7. Selective examples of use of epidemiological techniques in the investigation of cancer, renal disease, osteoporosis etc.

Reading List:


## SUBJECT DESCRIPTION FORM

<table>
<thead>
<tr>
<th>Subject Title:</th>
<th>Immunology</th>
<th>Subject Code:</th>
<th>HTI5602</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Value:</td>
<td>3</td>
<td>Date of Submission:</td>
<td>June 94 (revised April 2004)</td>
</tr>
<tr>
<td>Responsible Staff &amp; Department:</td>
<td>Dr M D I Gohel (HTI)</td>
<td>Pre-requisites:</td>
<td>Nil</td>
</tr>
<tr>
<td>Recommended Background Knowledge:</td>
<td>Basic knowledge equivalent to the final year of a recognized Biomedical Science undergraduate program.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exclusions:</td>
<td>Nil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Approach:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact Hours:</td>
<td>Lecture</td>
<td>11 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seminars / Tutorials / Presentations</td>
<td>13 hours</td>
<td></td>
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<tr>
<td></td>
<td>Laboratory/practicals/Diagnostic test prototype design and planning</td>
<td>9 hours</td>
<td></td>
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<tr>
<td></td>
<td>Case studies</td>
<td>9 hours</td>
<td></td>
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<tr>
<td></td>
<td>(Estimated contribution from visiting experts: 6 hours)</td>
<td>Sub-total: 42 hours</td>
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<tr>
<td></td>
<td>Independent Study Hours:</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Assignment preparation</td>
<td>38 hours</td>
<td></td>
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<tr>
<td></td>
<td>Seminars/Tutorials preparation</td>
<td>22 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-study</td>
<td>38 hours</td>
<td></td>
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<tr>
<td></td>
<td>Subtotal: 98 hours</td>
<td></td>
<td></td>
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<tr>
<td>Assessment (types &amp; weighting):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course Work (100%)</td>
<td>Seminar/Practicals</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Assignment</td>
<td>40%</td>
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<tr>
<td></td>
<td>Written Test</td>
<td>30%</td>
<td></td>
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<tr>
<td>Objectives:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>To deepen students' understanding of the theoretical principles of immunology and their practical applications.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>To introduce the students with diagnostic technology currently used to the study of the human immune system in normal and diseased states.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>To prepare students to design a prototype diagnostic test using immunological principles.</td>
<td></td>
<td></td>
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</tbody>
</table>
Syllabus:

1. Basic immunology
   Structure of the lymphoid system; cell types of the immune system; innate immunity; complement system; cytokines; immunoglobulins; humoral and cell-mediated immunity; regulation of immune response; immunogenetics; antigens and epitopes.

2. Clinical and applied immunology
   Immunology of infectious diseases; vaccination; allergy and autoallergy; immunodeficiency; transplantation immunology; immunosuppression; tumour immunology.

3. Immunological techniques
   Antigen-antibody interaction; principles, methodology and applications of serological tests including cellular-immunological tests; monoclonal antibody.

Reading List:

Stevens CD (1996). Clinical Immunology and Serology: A Laboratory Perspective. FA Davis Co, Philadelphia. USA.


### SUBJECT DESCRIPTION FORM

<table>
<thead>
<tr>
<th>Subject Title:</th>
<th>Molecular Technology in the Clinical Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Code:</td>
<td>HTI5603</td>
</tr>
</tbody>
</table>

| Credit Value:               | 3                                             |
| Date of Submission:         | June 94 (revised April 2004)                  |

| Responsible Staff & Department: | Dr Tony To (HTI)  
|                                | Prof. S P Yip (HTI)  
|                                | Dr Polly Leung (HTI) |

| Pre-requisites:              | Nil                                           |

| Recommended Background Knowledge: | Basic knowledge equivalent to the final year of a recognized Biomedical Science undergraduate program. |

| Exclusions: | Nil |

| Learning Approach: | This subject will provide the students with an understanding of concepts of modern genetic engineering techniques applicable to medical science. Emphasis will be placed on the detection of diseases as well as the use of these molecular technological advances in therapy. |

<table>
<thead>
<tr>
<th>Contact Hours:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>24 hours</td>
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<tr>
<td>Seminars/Tutorials</td>
<td>9 hours</td>
</tr>
<tr>
<td>Workshop/Demonstration</td>
<td>9 hours</td>
</tr>
<tr>
<td>(Estimated contribution from visiting experts: 6 hours)</td>
<td>Subtotal: 42 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Study Hours:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment preparation</td>
<td>38 hours</td>
</tr>
<tr>
<td>Seminars/Tutorials preparation</td>
<td>22 hours</td>
</tr>
<tr>
<td>Self-study</td>
<td>38 hours</td>
</tr>
<tr>
<td>Subtotal:</td>
<td>98 hours</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment (types &amp; weighting):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Work (100%)</td>
<td></td>
</tr>
<tr>
<td>Seminar</td>
<td>25%</td>
</tr>
<tr>
<td>Written assignment</td>
<td>50%</td>
</tr>
<tr>
<td>Written test</td>
<td>25%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To provide an understanding of concepts of molecular technology applicable to the field of medical science.</td>
</tr>
<tr>
<td>2. To introduce students to the commonly used molecular biology techniques in laboratory diagnosis.</td>
</tr>
<tr>
<td>3. To enhance the students' awareness of the use of these modern techniques in laboratory diagnosis and disease detection.</td>
</tr>
<tr>
<td>4. To enable the students to appreciate the application of molecular technology in forensic science.</td>
</tr>
</tbody>
</table>
Syllabus:

1. **Molecular biology techniques**
   Tools in molecular biology techniques: enzymes, cloning vectors; nucleic acid purification methods; electrophoresis and blotting techniques; DNA sequencing and pyrosequencing.

2. **Laboratory methods in the detection and diagnosis of diseases**
   Restriction fragment length polymorphism; single strand conformation polymorphism; denatured gradient gel electrophoresis; DNA fingerprinting; polymerase chain reaction (PCR) and real-time PCR; ligase chain reaction; in-situ hybridisation

3. **Molecular Pathology**
   Hereditary diseases, infectious diseases, metabolic diseases, haematological diseases, proto-oncogenes and tumour suppressor genes in neoplastic diseases

4. **Molecular technology in forensic science**
   Use of variable number of tandem repeats and short tandem repeats in DNA profiling.

**Reading List:**


### SUBJECT DESCRIPTION FORM

<table>
<thead>
<tr>
<th>Subject Title:</th>
<th>Laboratory Management</th>
<th>Subject Code: HTI5604</th>
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</table>

<table>
<thead>
<tr>
<th>Credit Value:</th>
<th>3</th>
<th>Date of Submission: June 94 (updated: April 2004)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Responsible Staff &amp; Department:</th>
<th>Dr Gina Leung (HTI)</th>
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<table>
<thead>
<tr>
<th>Pre-requisites:</th>
<th>Nil</th>
</tr>
</thead>
</table>

**Recommended Background Knowledge:**

Basic knowledge equivalent to the final year of a recognized Biomedical Science undergraduate programme.

**Exclusions:**

This subject is only available to persons with experience in Medical laboratory work or hospital based administration.

**Learning Approach:**

<table>
<thead>
<tr>
<th>Contact Hours:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>22 hours</td>
</tr>
<tr>
<td>Discussion/Tutorial/Seminar/Case study</td>
<td>20 hours</td>
</tr>
<tr>
<td>(Estimated contribution from visiting lecturers: 12 hours)</td>
<td>Sub-total: 42 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Study Hours:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation for written assignment</td>
<td>38 hours</td>
</tr>
<tr>
<td>Preparing tutorials/seminars/case study</td>
<td>22 hours</td>
</tr>
<tr>
<td>Self-reading/study</td>
<td>38 hours</td>
</tr>
<tr>
<td>Sub-total: 98 hours</td>
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</tbody>
</table>

**Assessment (types & weighting):**

<table>
<thead>
<tr>
<th>Continuous Assessment (100%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Written assignment</td>
<td>80%</td>
</tr>
<tr>
<td>Seminar</td>
<td>20%</td>
</tr>
</tbody>
</table>

**Objectives:**

1. To equip the students with concepts and principles of management, and to develop their ability to plan, organise, monitor, co-ordinate and evaluate the medical laboratories in Hong Kong.
2. To provide an understanding of total quality management of the laboratory.
Syllabus:

1. Structure, organisation and evaluation of laboratory services in Hong Kong: historical review, evolution and current strategies/organisation.
2. The role of the manager within the medical laboratory: individual and multi-disciplinary approach.
3. Need for and development of management teams.
4. Principles of management: stock and cost control; planning; human resources management; quality assurance; data collection and evaluation, performance indicator; staff appraisal; interviewing techniques; managing change; project management and laboratory safety.
5. Business communication and organisational identification of the clinical laboratory.

Reading List:


SUBJECT DESCRIPTION FORM

Subject title: Advanced Laboratory Medicine

Subject code: HTI5605

Credit value: 3

Responsible staff and Department:
Prof. Iris Benzie (HTI)
Dr Maria Wong (SN)
Dr Gina Leung (HTI)
Dr Maureen Boost (HTI)

Pre-requisite: Nil

Recommended background knowledge:
Basic knowledge equivalent to the final year of a recognised Biomedical Science undergraduate programme.

Exclusions: Nil

Learning approach: Problem based learning

Assessment:
Continuous assessment (100%)
Triple jump assignments:
Part I – 25%
• identifying and expressing learning issues.
• choice and justification of high priority issues
• knowledge base
Part II – 15%
• planning
• use of resources
• issue exploration
Part III – 60%
• presentation of key concepts
• application to the problem

Objectives:
1. To relate laboratory results to some of the major pathological changes of the human being.
2. To explore the significance and diagnostic values of laboratory tests.
3. To allow integration of biomedical science and laboratory investigations.
4. To stimulate students’ critical thinking and creativity.
5. To develop students’ skills in data retrieval, interpretation, evaluation and presentation critical analysis, and problem solving.

Keyword syllabus:
Multi-faceted problems relevant to the profession of Biomedical Science
Sample Problem

Patient information

A premature girl, weighing 1 lb 9 oz, who was born small for gestational age (24 weeks by physical examination and 28 weeks by date), was admitted after birth to the neonatal ICU with diagnoses of prematurity, hyaline membrane disease, and development of a grade I intraventricular hemorrhage detected by ultrasound. During her hospitalization, the infant required frequent laboratory tests.

During the first 15 days of life, five 6-cc transfusions of RBCs were administered. Five 6-cc aliquots were prepared by using a sterile connecting device to attach a pediatric transfer pack to the main blood bag.

On day 16, another transfusion was ordered. The sixth aliquot was prepared identically to the previous five. Chills, fever, jitteriness, marked tachycardia, and tachypnea were observed after approximately 1 cc of the sixth aliquot was administered. Hypotension or red urine were not observed. The resident stopped the transfusion and initiated a transfusion reaction investigation.

Clinical information

<table>
<thead>
<tr>
<th></th>
<th>Pretransfusion</th>
<th>Posttransfusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (F)</td>
<td>37.2</td>
<td>38.6</td>
</tr>
<tr>
<td>Blood pressure (mm Hg)</td>
<td>39/13</td>
<td>59/40</td>
</tr>
<tr>
<td>Pulse (beats/min)</td>
<td>153</td>
<td>274</td>
</tr>
<tr>
<td>Respiration (per min)</td>
<td>43</td>
<td>52</td>
</tr>
</tbody>
</table>

Immediately following this incident, the neonate was started on triple antibiotic prophylaxis (ampicillin / vancomycin / gentamicin). Since the treatment was initiated so quickly, the infant’s blood never became septic. All blood cultures were negative except for the culture taken from the blood in the filter syringe, which grew both *Staphylococcus epidermidis* and *Enterococcus* sensitive to ampicillin and vancomycin.

A week later, a similar incident occurred involving a neonatal patient in the same neonatal ICU with similar results. *Staphylococcus epidermidis* was cultured from another filter syringe used for blood transfusion.

Learning issues generated:

- If the infant was not overtly bleeding, why were small-volume transfusions necessary? How are small-volume transfusions administered?
- What is a sterile connecting device and how does it work?
- What is the differential diagnosis of the apparent transfusion reaction?
- What actions should be taken to determine the cause of this reaction?
- How could contamination in the filter syringe have occurred?
- What is the responsibility of the transfusion service at this point?

Objectives addressed

- Understanding of the unique aspects of neonatal physiology and relate this knowledge to neonatal transfusion practice.
- Application of different blood components to neonatal transfusion.
- Describe the protocols for compatibility testing and transfusion administration.
- Differentiation of the immunologic and non-immunologic mechanisms responsible for mediating various types of transfusion reaction.
- Hospital transfusion practice management.

Reading List and References:


SUBJECT DESCRIPTIVE FORM

Subject Title : Human Ageing
Subject Code: HT15606

Credit Value : 3
Date of Submission: Feb 2004

Level : 5
Duration : 1 Semester

Responsible Staff & Department : Prof. Iris Benzie (HTI)

Pre-requisite : Nil

Recommended Background Knowledge : Cell Biology, Physiology, Biochemistry.

Exclusions : Nil

Learning Approach :
Contact hours:

Lectures / Tutorials 20 hours
Seminars/Workshop/Presentation 22 hours
Sub-total 42 hours

Independent study hours:
Self-study, guided reading, assignment preparation 98 hours

Total hours of study 140 hours

Assessment (types & weighting) :
Course work (100%)
Poster/Seminar Presentation 35%
Quiz, or information gathering assignment 25%
Course paper (around 3000 words) 40%

Objectives :
1. To further understanding of the postulations concerning the causes and consequences of human ageing in terms of biological, biochemical and pathological changes
2. To further understanding of human ageing and development in terms of psychological and sociological perspectives
3. To highlight current research and advances in gerontology and the promotion of healthy ageing
Syllabus:

1. Evolutionary aspects of human ageing
2. Biological, pathophysiological, and biochemical aspects of ageing and age-relate diseases
   2.1 stochastic and programmed theories of ageing
   2.2 Sub-cellular, cellular, organ and homeostatic and functional (physiological) changes associated with ageing
   2.3 Age-related pathological changes; the origins of the major age-related diseases including osteoporosis, cardiovascular disease, dementia, cataract, cancer
   2.4 Increased susceptibility to and mortality from infectious disease, e.g. atypical pneumonia (SARS), influenza, e.g., avian influenza, with increasing age; increasing awareness and dealing with risk
3. Psychosocial aspects of ageing
   3.1 Stage models versus phase models in understanding human development
   3.2 Psychosocial theories of ageing: Disengagement and activity theories, social exchange theory
   3.3 Human ageing and society
4. The future of human ageing
   4.1 Biological, pharmacological and lifestyle strategies to promote healthy ageing
   4.2 The impact of technology: cloning, smart houses, and the use of information technology in care
   4.3 Challenges ahead: professional roles, fiscal constraints, impact of the exponential growth of older people on society
5. Issues and ethical concerns in human ageing: health care rationing; prolonging functional lifespan; 'anti-ageing medicine'
6. Models for and difficulties in studying human ageing

References:


Journals:

Relevant journals in the medical and life sciences, e.g., Age and Ageing, Gerontology, American Journal of Clinical Nutrition, Experimental Gerontology, Gerontologist, Lancet.

Websites:

American Society on Aging: http://www.asaging.org
The Center for Strategic and International Studies (CSIS) Global Aging Initiative: http://webu6102.ntx.net/gai
The Gerontological Society of America: http://www.geron.org
SUBJECT DESCRIPTION FORM

Subject title: Professional Development in Infection Control Practice
Subject Code: HTI5611

Credit value: 3
Date of Submission: November 2006

Responsible staff & Department:
Dr Polly Leung (HTI) (Coordinator)

Pre-requisites: Nil

Recommended background knowledge:
Should have adequate and sound knowledge of basic practices in infection control.

Exclusions: Nil

Duration
2 – 4 semesters. If students fulfil all the criteria for assessments and accumulate enough points, they can get a grade in 2-semesters (minimum) to 4-semesters.

Learning approach:
This is a student-centred learning subject. It will be based on Seminars, workshops, clinical meetings, journal clubs, training courses attended, journal based learning and structured reading. This will be based on points system acquired from the time the student registers on this subject until the final year. This subject will tap into the advancing knowledge base of those specialists (in Infection control practice) conducting workshops / seminars / talks on an annual basis, allowing the students to attend these talks and gain credit. Only accredited activities will be counted towards the subject final points.

Assessment (types & weighting):
Structured Reading (20%)
Journal-based learning (30%)
Required attendance & assignments to specialist seminars, workshops or meetings and/or invited lectures (30%)
Semester essay and presentation of activities conducted (20%)

The students will accumulate points counted towards the final grade awarded at the end of the concluding semester.

Objectives:

1. To encourage students to continuously update their knowledge and skills in Infection Control.
2. To increase active participation in professional research seminars and workshops.
3. To acquire the skill of keeping updated with the worldwide trends, government and institution policies on Infection control.
4. To encourage active involvement in setting-up, implementation and monitoring of infection control practices at workplace.
5. To encourage gaining of a broader knowledge base and more diverse skills to better understand the wider scope of the importance of infection control and health.
Syllabus:

Each student will be assigned a mentor who will follow the student’s progress throughout the semesters and ensuring that sufficient professional practice points (PPP) relevant to Infection Control are being gained each semester. A mentor can be an academic staff or workplace supervisor. This will be arranged in the first semester.

A wide range of professional activities (related to infection control and practice) would be eligible for PPPs (need prior approval) including

1. Conferences, meetings, seminars and workshops organised by professional societies, academic and healthcare institutions.
2. Practice related activities (e.g. case-studies, journal clubs, training sessions, workshops for special skills, specific approved training courses)
3. Journal Based Learning
4. Structured Reading and Essay Preparation.
5. Involvement in managing and implementation of Infection Control Practice (Reflective Journal).
6. Publications or reports related to infection control practice
7. Conference paper or poster.

The number of PPPs for each activity would be based on frequency and content of the activities and these would be described in the student’s log book.

Reading List:


Centre for Emerging infectious Diseases, The Chinese University of Hong Kong, Website :
http://ceid.med.cuhk.edu.hk/

The International Federation of Infection Control, Website : http://www.theific.org/morenews.asp

Asia Pacific Society of Infection Control, Website: http://www.apsic2007.com/

Association for professionals in Infection control and Epidemiology, Website : http://www.apic.org/
SUBJECT DESCRIPTION FORM

Subject Title: Clinical Chemistry
Subject Code: HTI5612

Credit Value: 3
Date of Submission: Feb 2007

Originating Staff & Department: Prof. Iris Benzie (HTI)
Dr Danny Gohel (HTI)

Pre-requisite:

Recommended Background Knowledge: Undergraduate study of Clinical Chemistry

Exclusions:

Learning Approach:

Case and scenario-based learning approach, involving group and class discussion, self-study, debate, journal article critique, information gathering, and seminar (both teacher led and student-led)

Contact hours:

Seminar/Case Study/Debate/Presentation 42 hours

Independent study hours:
Self-study 40 hours
Assignments 60 hours

Subtotal: 100 hours
Total 142 hours

Assessment:

Continuous Assessment 70%
Case study discussion (written assignment): 40%
Term paper (written or multi-media assignment) 30%
Examination 30%

Learning Outcomes:

The student will be able to:
- evaluate and interpret Clinical Chemistry data in relation to the investigation and laboratory diagnosis/monitoring of named disease states and conditions
- discuss Point of Care approaches and developments in Clinical Chemistry testing
- discuss and critically analyse recent advances in automation and technology in relation to Clinical Chemistry
Syllabus:

6 cases, each occupying 6-8 h class contact time and around 15-20 h self study. For each case, the role of the Clinical Chemistry laboratory in diagnosis and monitoring of the patient with the specific disease or condition will be addressed in depth, covering the screening and confirmatory tests, follow-up tests for treatment monitoring and prognosis assessment. For scenarios involving choice or evaluation of new tests or equipment, the procedures to be considered and followed in the laboratory will be covered in detail. Cases will change from year to year, reflecting advances in the field and topical issues, but examples are as follows:

Scenario/Case 1: The patient with Type 2 Diabetes Mellitus – how to diagnose, monitor and assess risk of complications

Scenario/Case 2: The patient with chronic renal failure – how to diagnose, and assess progress and prognosis?

Scenario/Case 3: The patient with multiple myeloma – how to diagnose, monitor and support?

Scenario/Case 4: The patient with chronic pancreatitis – what is the cause, and what is it causing?

Scenario/Case 5: The patient with suspected poisoning – how to investigate?

Scenario/Case 6: The case of the baby who fails to thrive – what is the cause?

Scenario/Case 7: The case of the man with family history of premature heart disease

Scenario/Case 8: The case of the women who seems continually thirsty – what is the problem?

Scenario/Case 9: The case of the laboratory looking for a new biochemical analyzer – which one and why?

Scenario/Case 10: The case for Point of Care testing, and the case against

Scenario/Case 11: The case of the woman with abdominal pain – what is the cause?

Scenario/Case 12: The case of the laboratory facing accreditation – what is needed?

Scenario/Case 13: The case of the new biomarker for evaluation – how is it done?

Scenario/Case 14: The case of the alcoholic patient – how to assess and monitor?

Scenario/Case 15: The case of the pregnant women- how to monitor her health and the development and well being of the foetus and newborn baby

Scenario/Case 16: The case of the malnourished elderly patient – how and why to assess macro- and micro-nutrient deficiency?

READING LIST:


Plus Professional and scientific journals
**SUBJECT DESCRIPTION FORM**

<table>
<thead>
<tr>
<th>Subject Title: Haematology and Transfusion Science</th>
<th>Subject Code: HTI5613</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Value: 3</td>
<td>Date of Submission: Feb 2007</td>
</tr>
<tr>
<td>Responsible Staff &amp; Department: Prof. S.P. Yip (HTI) Dr Christine Yow (HTI)</td>
<td></td>
</tr>
</tbody>
</table>

**Pre-requisite:** Nil

**Recommended Background Knowledge:** Undergraduate knowledge of Haematology and Transfusion Science

**Learning Approach:**
- Lecture, Tutorial, Seminars, Case study
- Lectures / Tutorials 30 hours
- Seminars/Workshop/Case Study/Presentation 12 hours
- Total 42 hours

**Independent study hours:**
- Self-study 40 hours
- Assignments 60 hours
- Subtotal: 100 hours
- Total 142 hours

**Assessment (types & weighting):**
- Continuous Assessment 70%
  - Seminars/journal club 40 %
  - Case studies 30 %
- Examination 30%

**Learning Outcomes:**
The students will be able to:
- explain and discuss advanced knowledge of haematological disorders and their mechanisms;
- critically evaluate and interpret data for diagnosis/ monitoring of haematological disease states, and those in different age groups;
- explain and discuss the molecular aspects of blood changes;
- demonstrate understanding of therapies for blood disorders.
Syllabus/topics:

1. **Haematological disorders and advanced laboratory investigation of blood diseases**: Etiology, classification, molecular defects and pathogenesis of leukaemias; myelodysplastic syndromes; lymphoma, myelo-proliferative disorders; disorders of red cell metabolism, haemoglobin and red cell membrane; the application of integrated approaches for differential diagnosis of the blood diseases.

2. **Haemostatic disorders**: Etiology, immune, congenital, and molecular defects of bleeding disorders including haemophilia, inherited thrombophilia, antiphospholipid syndrome; platelet disorders.

3. **Blood Transfusion**: Molecular basis of blood group antigens and special issues in blood transfusion.

4. **Haematopoietic stem cell transplantation**: Recent developments and applications of stem cell and cord blood transplantation

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**READING LIST**


**Relevant journals**

- Blood
- British Journal of Haematology
- Clinical and Laboratory Haematology
- European Journal of Haematology.
- Hematology.
- Journal of Thrombosis and Haemostasis:
- The Hematology Journal.
- Transfusion Medicine Reviews
**SUBJECT DESCRIPTION FORM**

**Subject Title:** Histopathology and Cytology

**Subject Code:** HTI 5614

**Credit Value:** 3

**Date of Submission:** Feb 2007

**Responsible Staff & Department:**
- Dr Gina Leung (HTI)
- Dr Tony To (HTI)

**Pre-requisite:** Nil

**Recommended Background Knowledge:** Undergraduate study of cellular pathology

**Exclusions:**

**Learning Approach:**

<table>
<thead>
<tr>
<th>Contact hours:</th>
<th></th>
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<tbody>
<tr>
<td>Lectures/Tutorials</td>
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<tr>
<td>Seminars/Workshop/Case Study/Presentation</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Independent study hours:</th>
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</thead>
<tbody>
<tr>
<td>Self-study</td>
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<td>Assignments</td>
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<td><strong>Subtotal:</strong></td>
<td>100 hours</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>142 hours</td>
</tr>
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</table>

**Assessment (types & weighting):**

- Course work 70%
  - Written assignments 30%
  - Presentation/Journal Club 40%
- Examination 30%

**Learning Outcomes:**

The students will be able to:
- evaluate and relate Histopathology and Cytology laboratory findings to some of the common and major pathological changes of the human body;
- appreciate the significance and evaluate diagnostic values of laboratory tests and investigations;
- appraise the application of advanced Cellular Pathology techniques.
Syllabus/Topics:

1. Review of the pathology and cellular changes as related to some common diseases such as inherited metabolic disorders, degenerative diseases, infections, and neoplasms of different body systems.

2. Evaluation of the significance and diagnostic value of current and developing laboratory tests and investigations.

READING LIST


Subject Title: Medical Microbiology

Subject Code: HTI5615

Credit Value: 3

Date of Submission: Feb 2007

Responsible Staff & Department:
Dr Maureen Boost (HTI)
Dr Polly Leung (HTI)

Pre-requisite: Nil

Recommended Background Knowledge: Undergraduate level study of medical microbiology

Exclusions:

Learning Approach:
Lecture, Seminar, Case study, Workshop

Contact hours:

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<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Seminar, Case Study</td>
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<td>Practical Workshop</td>
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<td><strong>Total</strong></td>
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<td><strong>Subtotal</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>142</strong></td>
</tr>
</tbody>
</table>

Assessment (types & weighting):

Continuous:
- Presentation: 25%
- Case study discussion: 20%
- Essay: 25%
- Examination: 30%

Learning Outcomes:
The student will be able to:
- demonstrate advanced knowledge of pathogenesis mechanisms, epidemiology of emerging infections, use of antibiotic and vaccine for prevention of infectious diseases;
- critically evaluate various methods for detecting antibiotic resistance and diagnosis of infectious diseases;
- identify issues and challenges associated with vaccine design.
- interpret laboratory findings related to the diagnosis of infectious diseases.

**Syllabus/Topics :**

1. **Pathogenesis of infection:** The interaction of microbial and host factors for a selection of infectious diseases to demonstrate the roles of factors including toxins, receptor sites, oncogenes, and immune response in their pathogenesis.

2. **Emerging Infections:** The epidemiological and clinical aspects of emerging infections. The impact of emerging infections on public health and pathology service.


4. **Vaccines:** Considerations in vaccine design, new developments in vaccines and their deployment for infectious disease prevention.

5. **Advanced laboratory diagnosis of microbial infections:** Recent approaches for laboratory diagnosis of infectious diseases, evaluation of various techniques for pathogen detection. Issues associated with results interpretation.

6. **Case studies of infections:** Case studies to illustrate host-parasite interactions and the effects of changed health status on infection, including aging, cancer, and diabetes.

**READING LIST**


**Relevant Journals**

- Clinical Microbiology Reviews
- Journal of Clinical Microbiology
- Emerging Infectious Diseases
- Antimicrobial Agents & Chemotherapy
## SUBJECT DESCRIPTION FORM

<table>
<thead>
<tr>
<th><strong>Subject Title:</strong> Integrated Medical Laboratory Science</th>
<th><strong>Subject Code:</strong> HTI5616</th>
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<tr>
<td><strong>Credit Value:</strong> 3</td>
<td><strong>Date of Submission:</strong> Feb 2007</td>
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**Responsible Staff & Department:**
Prof. S.P. Yip (HTI)
Dr. Danny Gohel (HTI)

**Pre-requisite:** Nil

**Recommended Background Knowledge:**
A basic knowledge or working experience in Medical Laboratory Science is assumed

**Exclusions:**

**Learning Approach:** Problem-based learning

**Contact hours:**
- Problems and cases for problem-based learning, seminars, presentation, discussion, and debate
  - Sub-total: 42 hours

**Independent study hours:**
- Self-study
  - 30 hours
- Assignments
  - 70 hours
  - Subtotal: 100 hours

**Total:** 142 hours

**Assessment (types & weighting):**

Continuous: 100%

There are 3 assessed problems, each with equal weighting in terms of contribution to the subject grade, and each will be covered over 3-4 weeks’ classes.

Assessment will be on a continuous basis, with marks given for

1. Contents and skills in presentation and handling questions of each case (40%): 20% is based on group work, and 20% on a personal critique of performance (i.e., individual presentation, participation in Q & A following the group’s presentation);
2. Individual contribution to discussion of other groups presentations (30%); and
3. Writing up on one of the cases (30%): Each group will be allocated one of the problems to write up in detail. The problem will be allocated when all three problems have been finished and for each group it can be any of the 3 assessed problems.
**Learning Outcomes:**

The student will be able to:
- relate laboratory results to probable pathological changes of the human being and critically analyse such results in the proper contexts
- explore and evaluate the significance and diagnostic values of laboratory tests
- integrate biomedical science, human diseases and laboratory investigations
- stimulate students’ critical thinking and creativity
- develop and strengthen students’ skills in data retrieval, interpretation, evaluation, critical analysis, problem solving, and presentation

**Syllabus/Topics:**

The subject is run using the approach of problem-based learning. Multifaceted problems relevant to the Medical Laboratory Science profession will be presented to the students in scheduled order and sequence to enable the student solve the problems in a stepwise and systematic manner. The first problem is designed to guide the students through the whole process of problem-based learning. Students will be assessed for subsequent new problems.

*Sample problem*

**Patient information**

A premature girl, weighing 1 lb 9 oz, who was born small for gestational age (24 weeks by physical examination and 28 weeks by date), was admitted after birth to the neonatal ICU with diagnoses of prematurity, hyaline membrane disease, and development of a grade I intraventricular hemorrhage detected by ultrasound. During her hospitalization, the infant required frequent laboratory tests.

During the first 15 days of life, five 6-cc transfusions of RBCs were administered. Five 6-cc aliquots were prepared by using a sterile connecting device to attach a pediatric transfer pack to the main blood bag.

On day 16, another transfusion was ordered. The sixth aliquot was prepared identically to the previous five. Chills, fever, jitteriness, marked tachycardia, and tachypnea were observed after approximately 1 cc of the sixth aliquot was administered. Hypotension or red urine were not observed. The resident stopped the transfusion and initiated a transfusion reaction investigation.

**Clinical information**

<table>
<thead>
<tr>
<th></th>
<th>Pretransfusion</th>
<th>Posttransfusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (F)</td>
<td>37.2</td>
<td>38.6</td>
</tr>
<tr>
<td>Blood pressure (mm Hg)</td>
<td>39/13</td>
<td>59/40</td>
</tr>
<tr>
<td>Pulse (beats/min)</td>
<td>153</td>
<td>274</td>
</tr>
<tr>
<td>Respirations (per min)</td>
<td>43</td>
<td>52</td>
</tr>
</tbody>
</table>

Immediately following this incident, the neonate was started on triple antibiotic prophylaxis (ampicillin/vancomycin/gentamicin). Since the treatment was initiated so quickly, the infant’s blood never became septic. All blood cultures were negative except for the culture taken from the blood in the filter syringe, which grew both *Staphylococcus epidermidis* and *Enterococcus* sensitive to ampicillin and vancomycin.

A week later, a similar incident occurred involving a neonatal patient in the same neonatal ICU with similar results. *Staphylococcus epidermidis* was cultured from another filter syringe used for blood transfusion.

**Learning issues generated:**
- If the infant was not overtly bleeding, why were small-volume transfusions necessary? How are small-volume transfusions administered?
- What is a sterile connecting device and how does it work?
- What is the differential diagnosis of the apparent transfusion reaction?
- What actions should be taken to determine the cause of this reaction?
- How could contamination in the filter syringe have occurred?
- What is the responsibility of the transfusion service at this point?
Objectives addressed

- Understanding of the unique aspects of neonatal physiology and relate this knowledge to neonatal transfusion practice.
- Application of different blood components to neonatal transfusion.
- Describe the protocols for compatibility testings and transfusion administration.
- Differentiation of the immunologic and non-immunologic mechanisms responsible for mediating various types of transfusion reaction.
- Hospital transfusion practice management.

READING LIST


### Subject Description Form

**Subject Title:** Multiplanar Anatomy  
**Subject Code:** HTI5701

**Credit Value:** 3  
**Date of Submission:** Mar 2006

**Responsible Staff & Department:** Dr Thomas Lau (HTI)

**Pre-or Co-requisite:** Nil

**Exclusion:** Nil

**Recommended Background Knowledge:** Basic anatomy at undergraduate level

**Learning Approach:**

The lectures aim to train students to appreciate the anatomical normal and abnormal structures from different planes of the body using different imaging modalities.

**Contact Hours:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
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<tr>
<td>Lectures</td>
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<td>Presentation</td>
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</tr>
<tr>
<td>Practical</td>
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</tr>
<tr>
<td>Seminars</td>
<td>6</td>
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<tr>
<td><strong>Sub-total:</strong></td>
<td><strong>42</strong></td>
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**Independent Study Hours:**

<table>
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<tr>
<th>Activity</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Study</td>
<td>60</td>
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<tr>
<td>Project presentation and Seminar preparation</td>
<td>40</td>
</tr>
<tr>
<td><strong>Sub-total:</strong></td>
<td><strong>100</strong></td>
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**Assessment:**

<table>
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<th>Component</th>
<th>Weightage</th>
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</thead>
<tbody>
<tr>
<td>Continuous Assessment</td>
<td>100%</td>
</tr>
<tr>
<td>Test</td>
<td>20%</td>
</tr>
<tr>
<td>Assignment</td>
<td>40%</td>
</tr>
<tr>
<td>Practical</td>
<td>20%</td>
</tr>
<tr>
<td>Presentation</td>
<td>20%</td>
</tr>
</tbody>
</table>

**Objectives:**

Upon satisfactory completion of this subject, the students should be able to:

1. identify anatomical features from medical images of various body planes
2. appreciate the 3-dimensional reconstruction of body structures from a series of planar images
3. discuss possible abnormalities from medical images
4. discuss the use of various imaging modalities for viewing a structure
Syllabus:

1. Normal anatomy of the following as appears in the different planes of the body:
   - brain
   - head and neck
   - thorax
   - abdomen and pelvis
   - musculoskeletal parts including the spine

2. Normal and examples of abnormal anatomy of the above regions as seen in different imaging modalities

Reading and Reference list:


SUBJECT DESCRIPTION FORM

Subject Title: Computed Tomography (CT): Physical Principles and Trend
Subject Code: HTI5702
(Previous OR504)

Credit Value: 3
Date of submission: March 2006

Responsible Staff & Department:
Co-ordinator: Dr LAI Yau-ming, Patrick (HTI)

Pre-or Co-requisite: Nil

Exclusion: Nil

Recommended Background Knowledge: Knowledge in radiation physics and imaging equipment equivalent to the level of a recognized radiography undergraduate programme; and clinical experience in computed tomography or computed tomography simulator preferred.

Learning Approach:
The learning activities aim to provide students with an understanding of basic principles, current advances and trends in CT technology as applied to medical imaging and radiation oncology.

Contact hours:
Lectures/tutorials 24 hours
Seminars and presentation 6 hours
Practical 12 hours
Sub-total: 42 hours

Independent study hours:
Self Study 40 hours
Practical 20 hours
Assignment 40 hours
Sub-total: 100 hours

Continuous Assessment:
Continuous Assessment: 100%
Assignment 50%
Practical 20%
Seminars 30%

Objectives:
Upon satisfactory completion of this subject, the students should be able to:
1. critically review the current status and trend of imaging technology in computed tomography
2. optimise imaging parameters to acquire quality image data for diagnosis and radiation therapy
3. evaluate the efficacy of different post imaging processing methods for image enhancement in diagnosis and radiation therapy
4. maintain the performance consistency of a computed tomographic scanner and perform suitable quality assurance procedures
Syllabus:

1. Overview of technological development of CT scanners

2. Physical principles of CT
   - Scanning principles of different generations of CT to include helical and multi-slice/multi-detector CT and new trend
   - Emerging developments in multi-detector CT
   - Data flow in a CT system
   - Data processing and image reconstruction for different types of CT

3. Instrumentation
   - Components of a CT imaging system
   - Data communication with PACS
   - CT Simulator and accessories

4. Optimization of imaging parameters
   - Optimization of different hardware and software affecting the performance of the scanner in relation to different clinical setting and pathologies
   - Managing acquisition imaging parameters
   - Managing radiation dose, artifacts and resolution

5. CT image enhancement: Post image processing
   - Digital image fundamentals
   - Managing viewing parameters
   - Algorithms for noise reduction

6. Three-dimensional CT
   - Fundamental 3D imaging concepts
   - Surface and volume rendering

7. Quality Control (QC) for CT used in medical imaging and radiotherapy treatment planning
   - QC for CT number consistency, visual output, mechanical consistency and quantitative CT
   - QC CT simulator and impact of image quality on radiotherapy treatment planning
   - CT mechanical integrity and imaging accuracy for precise tumour localization

Suggested reading list:


Various Radiology and Medical Imaging Journals
SUBJECT DESCRIPTION FORM

Subject Title: Computed Tomography (CT): Clinical Application  Subject Code: HTI5703
Credit Value: 3  Date of submission: Mar 2006

Responsible Staff & Department: Co-ordinator: Dr Karl Fung (HTI)
Teachers: Visiting lecturers

Pre-or Co-requisite: Nil
Exclusion: Nil

Recommended Background Knowledge: Knowledge in radiation physics and imaging equipment equivalent to the level of a recognized radiography undergraduate programme; and clinical experience in computed tomography or computed tomography simulator

Learning Approach:
The lectures aim to provide students with the applications of CT images in clinical situations from which the students will be able to design scanning protocols for specific regions of the body.

Contact hours:
Lectures/tutorials 24 hours
Seminars 12 hours
Workshop – image evaluation and pattern recognition 6 hours
Sub-total: 42 hours

Independent study hours
Self Study 50 hours
Seminar preparation 50 hours
Sub-total: 100 hours

Assessment:
Continuous Assessment: 100%
Image evaluation and pattern recognition 40%
Case reports of in regions specified in Section 1 of the syllabus 30%
Seminars 30%

Objectives:
Upon satisfactory completion of this subject, the students should be able to:
1. discuss the application of CT images for various clinical situations
2. differentiate normal from abnormal anatomical features
3. discuss the possible adverse effects on patients in the use of contrast agents for CT procedures
4. design scanning protocol for different regions of the body
5. perform image processing for advanced CT procedures
6. discuss the daily operation in a clinical CT suite
7. appraise the factors in the commissioning of a new CT unit
Syllabus:
1. Common pathologies seen in CT images, and their pathological processes of the following regions of the body:
   - brain
   - head and neck
   - thorax
   - abdomen and pelvis
   - musculoskeletal parts including the spine
2. Discussion of the scanning protocol of the regions in Section 1.
3. Application of post imaging processing for better visualization.
4. Special CT imaging
   - Cardiac imaging
     - ECG-gated CT volumetric scanning
     - Subsecond volumetric scanning
     - Other clinical applications
   - CT interventional studies
     - Indications
     - General complications
     - Preparation and care
     - Various clinical procedures
5. General management of a CT suite
   - Infrastructure
   - Data communication and storage
   - DICOM standard and worklist
   - Budgeting
6. Commissioning and acceptance of a new CT unit for medical imaging and radiation oncology

Reading list:
American Association of Physics in Medicine: Specifications and acceptance testing of computed tomographic scanners, Report 39, 1993

Various Radiology and Medical Imaging Journals
SUBJECT DESCRIPTION FORM

Subject Title: Computed Tomography (CT): Practicum
Subject Code: HTI5704

Credit Value: 3
Date of submission: Mar 2006

Responsible Staff & Department: Co-ordinators: Dr Tang Fuk Hay (HTI)
Dr Maria Law (HTI)
Subject teachers: Dr Patrick Lai, Dr. Karl Fung

Pre-requisite: Multiplanar Anatomy (HTI5701) and Computed Tomography: Physical Principles and Trend (HTI5702)

Exclusion:
Students without access to a CT scanner.

Remarks: This subject of 3 credits can be completed in 1 semester or over 2 semesters.

Learning Approach:
An experiential learning approach will be adopted largely in this subject and can be individually paced. Other than having supervised clinical practice, students are expected to gather cases from radiology or radiotherapy for presentation and reflective discussion on the scanning protocols and workplace management.

Contact hours:
Case study 15 hours
Practical 24 hours
Seminar 3 hours
Sub-total: 42 hours

Independent study hours:
Clinical practice 100 hours
Case study and reports 30 hours
Sub-total: 130 hours

Assessment:
Continuous Assessment: 100%
Case reports (with advance image processing techniques) 30%
Clinical assessment 50%
Assignment 20%

Objectives:
Upon satisfactory completion of this subject, the students should be able to:
1. perform CT competently and independently in clinical setting
2. enhance the workflow in CT
3. prepare the CT images for accurate diagnosis in radiology or CT localisation in radiotherapy
4. manage a CT suite effectively and efficiently

**Syllabus:**

1. A minimum of 200 CT cases from the following list should be documented and certified:
   - Brain
   - Head and neck
   - Thorax
   - Abdomen and pelvis
   - Musculoskeletal

2. Advanced image processing
   - vessel measurement
   - cardiac function analysis
   - virtual colonoscopy
   - perfusion studies
   - lung nodule measurement
   - CT angiography
   - enhancing tumour delineation

3. Reflective discussion on the scanning protocol in practice, hospital/departmental workflow in CT and management of a CT suite

**Reading list:**


American Association of Physics in Medicine: *Specifications and acceptance testing of computed tomographic scanners*, Report 39, 1993


Various Radiology and Medical Imaging Journals
SUBJECT DESCRIPTION FORM

Subject Title: Advanced Radiotherapy Planning
Subject Code: HTI5705
(Previous OR507)

Credit Value: 3
Date of submission: March 96
(Revised Mar 2006)

Responsible Staff & Department: Dr Vincent Wu (HTI)

Pre-requisites: Nil

Recommended Background Knowledge:
Basic knowledge and experience in radiotherapy planning and dosimetry equivalent to the level of a recognised undergraduate programme

Exclusions:
This subject is available only to students who hold a registrable qualification in therapeutic radiography.

Learning Approach:
The approach will comprise lectures and tutorial/small group teaching.

Contact Hours:
- Lectures: 21 hours
- Practical: 9 hours
- Tutorial/Case Study Seminar: 12 hours
Sub-total: 42 hours

(Visiting lecturers will be invited to conduct some lectures.)

Independent Study hours:
- Self study: 60 hours
- Computer planning: 25 hours
- Case study preparation: 15 hours
Sub-total: 100 hours

Assessment (types & weighting):
- Continuous Assessment: 100%
  - Case study report and presentation: 60%
  - Examination: 40%

Objectives:
Upon completion of this subject the student should be able to:
1. discuss the concepts and criteria of 3-dimensional conformal radiotherapy (3DCRT) treatment planning
2. appreciate the advancements of computer treatment planning systems and their quality assurance
3. discuss the concepts of inverse planning and its applications in intensity modulated radiotherapy (IMRT)
4. evaluate dosimetric information of treatment plans
5. discuss the dosimetry and treatment planning of helical tomotherapy

Syllabus:

1. Concepts of 3DCRT treatment planning:
   • terminology, definitions and dose specifications
   • image fusion and target delineation
2. Advancements in computer treatment planning systems
   • quality assurance
   • dose calculation algorithms
3. Inverse planning and IMRT
   • optimization algorithms
   • planning parameters
   • comparison with forward planning method
4. Plan evaluation tools
   • physical parameters
   • biological indices
5. Helical tomotherapy: dosimetry and treatment planning

Reading List:


ICRU (1999) Prescribing, Recording and Reporting Photon Beam Therapy (Supplement to ICRU Report 50). ICRU.


Journals:

International Journal of Radiation Oncology, Biology and Physics. (Taylor & Francis, USA)
Medical Dosimetry. (Elsevier Science Inc. USA)

Medical Physics (American Institute of Physics, USA)

Radiography (The College of Radiographers, UK)

Radiotherapy and Oncology (Society for Therapeutic Radiology and Oncology, Belgium).

Journal of Radiotherapy in Practice (Greenwich Medical Media Ltd)
SUBJECT DESCRIPTION FORM

Subject title: Independent Study in Radiological Sciences

Subject Code: HTI5706

Credit value: 3

Date of Submission: Mar 2006

Responsible staff & Department: Dr Maria Law (HTI)

Pre-requisites: Nil

Recommended background knowledge: Nil

Exclusions: Nil

Special Note To Students: Consent of subject instructor together with the endorsement of the subject leader must be obtained BEFORE subject registration

Learning approach:

Students will be required to undertake guided independent study in depth on a topic mutually agreed upon with an instructor. The student will read widely on the scientific issues and, in specific areas, also in depth. Students may be arranged into small groups of three to four persons to undertake cooperative studies of a subject in tutorial sessions with the instructor.

Contact hours:

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<th>Activity</th>
<th>Hours</th>
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Independent study hours:

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<th>Hours</th>
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<tr>
<td>Mini Project</td>
<td>42</td>
</tr>
<tr>
<td>Sub-total</td>
<td>112</td>
</tr>
</tbody>
</table>

Assessment (types & weighting):

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Assessment</td>
<td>100%</td>
</tr>
<tr>
<td>Tutorial Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments</td>
<td>60%</td>
</tr>
<tr>
<td>Final Report / Literature Review</td>
<td>30%</td>
</tr>
</tbody>
</table>

Objectives:

To facilitate a student who has particular interest in certain radiological or radiotherapeutic topic to pursue an in-depth independent study in that area under special supervision. It is expected that the student already has familiarity with the subject area and be prepared and able to delve deeper into the subject with directed independent learning. In particular, the student may wish to investigate further, a radiology or radiotherapy topic related to their professional work.
Syllabus:

This subject may follow the course syllabus from any other core subject in the MSc/PgD HC (MIRT) award. Additionally, the instructor may establish a tailored course of study that adheres to the academic workload and assessment criteria specified for the student.

The student is expected to study in depth one of the core areas of study that comprise the MIRT award: e.g. Radiation Dosimetry, Imaging informatics, PACS, molecular imaging, digital radiography or other advanced practice in radiology and radiotherapy.

Indicative reading list and references:

Relevant texts and journal articles will be assigned based on the specific area of study under supervision of the instructor. Example journals include:

- Radiotherapy and oncology – journal of the European Society for Therapeutic Radiology and Oncology
- International journal of radiation oncology biology physics
- Medical Physics
- Medical Dosimetry Journal
- Academic Radiology
- Current Problems in Diagnostic Radiology
- Radiographics
- Journal of Digital Imaging
- American Journal of Roentgenology
- Clinical radiology

In addition, the student should take note of the following guides to independent study:


## Ultrasonography I (Instrumentation & Physical Principles)

**Subject Code:** HT15707  
(Previous OR502)

**Credit Value:** 3

**Date of Submission:** 30 Nov 1994  
(Revised Nov. 1998)  
(Revised Mar 2006)

**Responsible Staff & Department:** Dr Michael Ying (HTI)

**Pre-requisites:** Nil

### Recommended Background Knowledge:

A basic understanding of physics and instrumentation in medical imaging.

Students should have access to diagnostic ultrasound equipment for the purpose of gaining clinical practice relevant to the syllabus.

**Exclusions:** Nil

### Learning Approach:

The approach will comprise lectures to facilitate the introduction of a highly complex technology, and tutorial/small group teaching.

<table>
<thead>
<tr>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Self Study:</strong></td>
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</tr>
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</tr>
</tbody>
</table>

### Assessment (types & weighting):

Students will be assessed throughout the course on participation and contribution in tutorials that demonstrates image and procedural comprehension and a general overall understanding of the role of diagnostic imaging in medicine.

An examination paper will be given at the end of the subject.

| Course Work: | 70% |
| Assignment |  |
| Practical |  |
| Examination: | 30% |
Objectives:
Upon completion of this module the student should be able to:

1. discuss the construction of ultrasound imaging equipment, including real-time B-mode, T-M mode and Doppler mode.
2. discuss common ultrasound artifacts.
3. perform quality assurance tests and routine checks necessary to ensure optimal performance of the equipment.
4. troubleshoot equipment malfunction or failure.
4. discuss about safe operation of the equipment.

Syllabus:
1. Review of wave properties of sound, including reflection, refraction, scattering, interference, diffraction, absorption, resonance, etc.
2. Mechanism of generation of ultrasound, piezoelectric effect, continuous wave and pulse wave.
3. Construction of transducers; ultrasonic fields from focused and unfocused transducers.
4. Pulse-echo imaging principles and instrumentation: real-time and Doppler imaging
5. Ultrasound interaction with tissue, safety of ultrasound.
6. QA, testing and monitoring of equipment performance.
7. Equipment for Doppler Imaging, compound imaging, extended field-of-view, and three-dimensional ultrasound.

Reading List:
Hoskins P., Thrush A., Martin K., Whittingham T.A. (2003), Diagnostic ultrasound: physics and equipment, GMM.
Wells P.N.T. (1993), Advances in ultrasound techniques and instrumentation, Churchill Livingstone
Ultrasound in Medicine and Biology, the Official Journal of the World Federation for Ultrasound in Medicine and Biology
**SUBJECT DESCRIPTION FORM**

<table>
<thead>
<tr>
<th>Subject Title: Ultrasonography II (Abdomen)</th>
<th>Subject Code: HTI5708 (Previous OR503)</th>
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<tbody>
<tr>
<td>Credit Value: 3</td>
<td>Date of Submission: Nov 1994</td>
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<tr>
<td></td>
<td>(Revised Jan 1998)</td>
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<td></td>
<td>(Revised Mar 2006)</td>
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<tr>
<td>Responsible Staff &amp; Department: Dr Michael Ying (HTI)</td>
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</tbody>
</table>

**Pre-requisites:** Ultrasonography I: Instrumentation and Physical Principles (HTI5707)

**Recommended Background Knowledge:**

Students should have an understanding of physics and instrumentation in medical ultrasound equivalent to undergraduate level.

**Exclusions:**

This subject is only available to students who hold a registrable qualification in radiography, medicine, or a recognized equivalent qualification, and who have access to clinical ultrasound facilities.

**Learning Approach:**

The approach will comprise lectures to facilitate the introduction of complex techniques, and tutorial/small group teaching.

**Contact hours:**

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<tbody>
<tr>
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**Independent study hours:**

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<tbody>
<tr>
<td>Self study</td>
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<td>Seminar preparation</td>
<td>30 hours</td>
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<td></td>
<td>Sub-total: 100 hours</td>
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</table>

**Assessment (types & weighting):**

Students will be assessed throughout the course on participation and contribution in tutorials that demonstrates image and procedural comprehension and a general overall understanding of the role of diagnostic imaging in medicine.

An examination will be conducted at the end of the subject.

| Course Work: | 75% |
| Assignment |  |
| Practical |  |
| Examination: | 25% |
Objectives:

Upon completion of this module the student should have a comprehensive knowledge of the application of Medical Ultrasound in the diagnosis of abdominal diseases and be able to:

1. discuss the theoretical concepts of sonographic procedures in the abdomen and be able to relate these to practice
2. interpret, analyse and evaluate ultrasound images of normal anatomy and pathology
3. appreciate the clinical role of ultrasound in the prognosis of abdominal diseases
4. be aware of, and realize, the professional and ethical responsibilities of the sonographer

Syllabus:

1. Review of gross anatomy and physiology
2. Sonographic anatomy of the abdomen
3. Examination procedures and techniques of the abdomen
4. Overview of the clinical diagnosis of abdominal diseases and the sonographic appearance of pathology and anomalies.
5. The clinical role of ultrasound compared with other special imaging modalities
6. Contrast media in abdominal sonography
7. 3-dimensional ultrasound of the abdomen
8. Development of research niche area in ultrasound

Reading List:


Journals:

*Journal of Clinical Ultrasound*
SUBJECT DESCRIPTION FORM

Subject Title: Communication and Support in Oncology Care

Subject Code: HTI5709
(Previous OR505)

Credit Value: 3

Date of submission: 25 March 2001
(Revised Mar 2006)

Responsible Staff & Department: Dr Maria Law (HTI)

Pre-requisites: Nil

Exclusions: Nil

Background Knowledge: Basic knowledge and minimum of 1 year's experience in Oncology

Learning Approach:

Contact hours:
- Lectures: 15 hours
- Practical/discussion/tutorial: 18 hours
- Case study/seminar: 9 hours

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Sub-total: 42 hours

Independent study hours:
- Field work: 30 hours
- Self-study: 40 hours
- Seminar preparation: 20 hours
- Assignment preparation: 20 hours

---

Sub-total: 110 hours

Assessment (Type & weighting):

Continuous Assessment: 100%
- Communication /counselling skill: 30%
- Seminar presentation and report: 70%

Objectives:

This subject aims to better equip Oncology care-workers with a broadened and deepened knowledge base and skills in terms of communication and counselling so that they are more ready to offer support to the patients and those who care for them. On satisfactory completion of the subject, students should be able to:

1. appreciate the psychosocial issues related to cancer patients and their families
2. develop within individuals the abilities of self awareness in supportive care of cancer patients
3. evaluate and utilize communication and counselling skills in their rapport with cancer patients and their families
4. become a resource person in the holistic care of cancer patients

Syllabus:

1. Psychosocial issues related to cancer patients and their families
2. Physiological aspects of life-threatening illness and pain management
3. Alternative therapy in cancer treatment
4. Approaches to communication and counselling in Oncology; basic principles and consideration
5. Introduction to various communication and counselling skills
6. Evaluating communication and counselling
7. Support for oncology care-workers
8. Organisational issues regarding oncology care

Reference Reading:

Psychosocial oncology:

Communication and counselling:

Journals:
Journal of Psychosocial Oncology
Oncology Nursing Forum
Cancer Nursing
Supportive Care in Cancer
European Journal of Oncology Nursing
Palliative Medicine
Psycho-Oncology
Seminar in Oncology Nursing
### SUBJECT DESCRIPTION FORM

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<tbody>
<tr>
<td>Dr Karl Fung (HTI)</td>
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<tr>
<td>Dr Vincent Wu (HTI)</td>
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</table>

| **Pre-requisites:** | Nil |

<table>
<thead>
<tr>
<th><strong>Recommended Background Knowledge:</strong></th>
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<tbody>
<tr>
<td>Fundamental knowledge of radiation protection</td>
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<table>
<thead>
<tr>
<th><strong>Exclusions:</strong></th>
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<tbody>
<tr>
<td>This subject is only available to students who hold a registrable qualification in radiography or who have a background in radiation physics.</td>
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<table>
<thead>
<tr>
<th><strong>Learning Approach:</strong></th>
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<tbody>
<tr>
<td>The approach will be comprised of lectures and tutorial/small group teaching.</td>
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<table>
<thead>
<tr>
<th><strong>Contact Hours:</strong></th>
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<tr>
<td>Lectures</td>
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<td>Seminar /Tutorials</td>
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<td>Practicals</td>
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<table>
<thead>
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<th><strong>Independent Study Hours:</strong></th>
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<tbody>
<tr>
<td>Self study</td>
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<table>
<thead>
<tr>
<th><strong>Assessment (types &amp; weighting):</strong></th>
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<tbody>
<tr>
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<tr>
<td>Laboratory Report(s)</td>
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<td>Assignment(s)</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Objectives:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this subject the student should be able to:</td>
</tr>
</tbody>
</table>

1. identify the potential risks of exposure when handling ionizing radiations in the working environment
2. discuss different factors related to radiation protection
3. to design working procedures and conditions in their scope of work competently
Syllabus:

1. A review of the biological effects of ionizing radiations to exposed individuals and genetics
2. In-depth studies of the radiation safety aspects of diagnostic and therapeutic equipment
3. Safety measures in the use of radioactive substances and their disposal in hospitals and industry
4. Measurement, instrumentation and monitoring methods of ionizing radiations with respect to different environments
5. Planning of the working place in which radiation exposures are likely to be encountered
6. Hospital's role in the Daya Bay Contingency Planning
7. Radiation protection recommendations by international bodies (e.g. ICRP, NRPB) and local authorities

Reading List:


Journals:

Radiation Protection Dosimetry
British Journal of Radiology
Health Physics
Radiography
Radiographer
Radiologic Technology
SUBJECT DESCRIPTION FORM

Subject Title: Radiotherapy Dosimetry

Subject Code: HTI5711

Credit Value: 3

Date of submission: March 2006

Responsible Staff & Department:
Co-ordinator: Dr Maria Law (HTI)
Visiting Lecturer: Dr Louis Lee

Pre-requisites: Nil

Recommended Background Knowledge:
Basic knowledge and experience in radiotherapy and dosimetry equivalent to the level of a recognised undergraduate programme

Exclusions: Nil

Learning Approach:
The approach will comprise lectures and tutorial/small group teaching.

Contact Hours:

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<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Lectures</td>
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<td>Tutorial/ Seminar</td>
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Sub-total: 42 hours

Independent Study hours:

<table>
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<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>Self study</td>
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Sub-total: 100 hours

Assessment (types & weighting):

Continuous assessment 100%

<table>
<thead>
<tr>
<th>Type</th>
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<tr>
<td>Seminar presentation</td>
<td>30%</td>
</tr>
<tr>
<td>Examination</td>
<td>40%</td>
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</tbody>
</table>

Objectives:

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

1. discuss radiation dose issues related to radiotherapy
2. perform quality assurance in radiation dose for external beam therapy and brachytherapy
3. perform radiation dose measurements for radiotherapy equipment
4. be responsible for radiotherapy data management and communication
5. perform radiation protection for personnel in radiotherapy
Syllabus:

1. Radiation Physics
   • Interaction of radiation with matter – photons and electrons
   • Characteristics of the current range of radiotherapy treatment units
   • Radiation measurement for different radiotherapy modalities

2. Dose calculation methods
   • Factors affecting dose calculations
   • Irregular field calculations
   • Special calculations: off axis, gap, entrance/exit dose
   • Corrections for tissue inhomogeneities
   • Electron beam calculations
   • Dose algorithms for different treatment techniques

3. Brachytherapy
   • Radioactive source characteristics
   • Dose distributions, calculations and measurements
   • Source localization
   • Quality assurance for brachytherapy units

4. Radiation Protection
   • Maximum permissible dose equivalent based on NCRP recommendations pertaining to radiotherapy
   • Radiation monitoring for personnel, patients and public in radiotherapy departments
   • Radiation safety factors for consideration: time, distance and shielding in the practice or radiotherapy

5. Quality assurance
   • Treatment and simulator equipment
   • Treatment planning computer
   • Clinical aspects e.g. chart reviews, film reviews, plan checks

6. Computer system and data management
   • Computer system management
   • Data management

7. Professional responsibilities
   • Code of Ethics for dosimetrists
   • Standard precautions
   • CPR
   • Responsible fiscal practices (billing)
   • Health insurance portability (HIPPA)

Reading List:


ICRU.


**Journals:**

*International Journal of Radiation Oncology, Biology and Physics*. (Taylor & Francis, USA)

*Medical Dosimetry*. (Elsevier Science Inc. USA)

*Medical Physics* (American Institute of Physics, USA)

*Radiography* (The College of Radiographers, UK)

*Radiotherapy and Oncology* (Society for Therapeutic Radiology and Oncology, Belgium).

*Journal of Radiotherapy in Practice* (Greenwich Medical Media Ltd)
SUBJECT DESCRIPTION FORM

Subject Title: Advanced Technology and Clinical Application in Magnetic Resonance Imaging

Subject Code: HTI5718

Credit Value: 3

Date of Submission: Feb 2007

Responsible Staff & Department: Dr Phoebe Suk-tak Chan (HTI)

Pre-requisite:

Recommended Background Knowledge: knowledge in radiation physics, radiological instrumentation, human anatomy and pathology equivalent to the level of a recognized radiography undergraduate programme; and clinical experience in magnetic resonance imaging

Exclusions:

Learning Approach:

Contact hours:
- Lecture: 24 hours
- Tutorial: 12 hours
- Case Study Presentation: 6 hours

Sub-total: 42 hours

Independent Study hours:
- Self-study: 60 hours
- Assignments: 15 hours
- Case Study Preparation: 25 hours

Sub-total: 100 hours

Total: 142 hours

Assessment:

Continuous Assessment:
- Assignments: 30%
- Case Study Presentation: 10%
- Written case study report: 20%
- Final Examination: 40%

Learning outcomes:

The subject aims to provide in-depth understanding of the physical principles and clinical applications of Magnetic Resonance Imaging (MRI). On completion of this subject, the student should be able to:

- demonstrate an understanding of MRI physics, instrumentation, image production and data acquisition mechanisms;
- demonstrate an understanding of the different pulse sequence techniques
- demonstrate an understanding of MR angiography and the use of contrast media
- recognize images in terms of anatomy, physiology, pathology and the presence of common artifacts
- discuss the application of routine clinical protocols and its modification in uncommon MR examinations
- recognize the strengths and weaknesses of applying different image contrast in different body regions
- evaluate and optimize the image quality
- demonstrate an understanding of safety issues, limitations and patient management requirements

Syllabus:

This consists of two major study areas: (1) Principles and Technology, (2) Clinical Applications

(1) Principles and Technology

This entails studies of the following areas:
- MRI physics
- Safety, Limitations and patient management requirements
- T1, T2 and proton density contrast
- Spatial localization, gradients, k-space and data acquisition
- Sequence techniques
- Signal-to-noise ratio and spatial resolution
- Common imaging artefacts and compensation
- Flow phenomena, contrast agents and MR angiography

(2) Clinical Applications

This entails studies of the following areas:
- MR brain and spine
- MR musculoskeletal
- MR angiography and cardiac imaging

Reading List:


Journals

- Magnetic Resonance in Medicine
- Journal of Magnetic Resonance Imaging
- Journal of Cardiovascular Magnetic Resonance
- Magnetic Resonance Imaging
- Radiology
- Radiographics
- Neuroimage
- Human Brain Mapping
- American Journal of Neuroradiology
- American Journal of Roentgenology
SUBJECT DESCRIPTION FORM

Subject Title: Digital Imaging and PACS

Subject Code: HTI5720

Credit Value: 3

Date of Submission: Feb 2007

Responsible Staff & Department: Dr CHAN Wing Chi, Lawrence (HTI)

Pre-requisite: Nil

Recommended Background Knowledge: Background knowledge in clinical medical imaging is preferred.

Exclusions: Nil

Learning Approach:

Contact hours:

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<th>Lecture</th>
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<tbody>
<tr>
<td>Tutorial/Practical</td>
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<tr>
<td>Seminars</td>
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Sub-total: 42 hours

Independent Study hours:

<table>
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<tr>
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<tbody>
<tr>
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<td>30 hours</td>
</tr>
<tr>
<td>Seminar Preparation</td>
<td>30 hours</td>
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Sub-total: 100 hours

Total: 142 hours

Assessment:

Continuous Assessment (100%)

<table>
<thead>
<tr>
<th>Assignments</th>
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<td>30%</td>
</tr>
<tr>
<td>Seminar Presentation</td>
<td>30%</td>
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</table>

Learning Outcomes:

Upon completion of the subject, the students will be able to:

- appraise the benefit and latest development of digital imaging
- contrast the image formation approaches of different digital imaging modalities
- evaluate the existing methods for analyzing and visualizing digital images
- perform the role of a PACS administrator, and
- apply image informatics in research
Syllabus:

Part I: Image formation, processing and visualization
1. Concepts of digital image formation in various imaging modalities
   1.1 Formation of digital images
   1.2 Signal and image processing
2. Digital image analysis and visualization
   2.1 Statistical image analysis methods
   2.2 Advanced image segmentation methods
   2.3 Models for image visualization
   2.4 Limitations of image visualization

Part II: Picture Archiving and Communication System
3. PACS for imaging manager and administrators
   3.1 Streamlined workflow integration
   3.2 Requirements of system architecture
   3.3 Connectivity issues
   3.4 Image compression: wavelet conversion, JPEG, JPEG2000 - considerations for local and teleradiology communications
   3.5 Security and ethical issues e.g. encryption & decryption, HIPPA
   3.6 Considerations for PACS purchase
      - Trend of electronic storage: SAN, SATA disk, LTO tape
      - Choice of display workstations
   3.7 Image security: Encryption & decryption, HIPPA
   3.8 Legal issues: Law of personal information protection - considerations for operating PACS, networking, workstations
   3.9 Management of medical image information system & network
4. PACS-based imaging applications and research

Reading List:

Journals:
- British Journal of Digital Imaging
- Journal of Digital Imaging
- Computerized Medical Imaging and Graphics
Subject Title: Contemporary Issues in Health & Health Care
Subject Code: RS501

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<th>Credit Value:</th>
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Responsible Staff & Department:
Dr Grace Szeto (RS)
Dr Kit Sinclair (RS)

Pre-requisite: Nil

Recommended background knowledge: Basic knowledge in concepts of health and health care

Exclusion: Nil

Learning Approach:
The aim of this subject is to provide students with the skills and knowledge to carry out a conceptual analysis of contemporary health care issues and to focus on given topics in more depth. Students will be encouraged to develop a critical awareness of the wider social and behavioural context within which health-related phenomena occur. The notions of 'time', 'space' and 'being' have been emphasised by social scientists (Rosenau, 1992) as useful heuristic devices in aiding our understanding of social phenomena of the late 20th century. The 'time' dimension encompasses those factors affecting health in their 'historical' context and an analysis of events in relation to the past, the present and the future. 'Space' provides a dimension for both macro- and micro-level analysis such as cross-national comparisons, regional similarities and dissimilarities, environmental factors but also allows for dynamic analysis at neighbourhood or small group level. The concept of 'being' encompasses those phenomena which operate at the intra- and inter-individual level, and includes the experiential and phenomenological dimensions (such as 'feeling', 'perceiving' and 'wanting') as well as drawing on the more traditional methodological perspectives offered by the psychosocial sciences.

The subject will examine contemporary issues in the 3 domains of health, health care and professional issues. Students will be expected to participate actively in discussions and presentations in these 3 domains. The choice of issues may vary in the light of changes in health and illness phenomena and developments in health-care practices as they occur either locally or internationally.

Contact hours:
- Lectures: 15 hours
- Tutorial: 15 hours
- Seminars: 12 hours

Sub-total: 42 hours

Independent study hours:
- Literature review, preparation of presentation / group discussion and portfolio: 100 hours

Assessment (types & weighting):
- Course Work (100%) Each student is expected to submit their work in the form of a Portfolio, which includes evidences of student learning and progress throughout the subject. The Portfolio should include the student’s work in the following components:
  - Individual Work 50%
  - Group presentation and discussion 50%

Sub-total: 100 hours
Objectives:
On completion of this subject, the student will be able to:
1. utilise the conceptual framework and knowledge gained in the "Concepts of Health and Health Care" subject to enhance their understanding of contemporary health and health care issues;
2. have a good appreciation of the professional, ethical and policy implications in health and health care issues,
3. critically analyse and evaluate health care issues within international and local contexts by drawing on theories, approaches and perspectives offered by the social and behavioural sciences;
4. appreciate the advantages, disadvantages, opportunities and limitations of adopting inter- or multi-disciplinary perspectives on health and health-care issues;
5. develop individual viewpoints, foster new ideas and advocate changes in issues that concern the local health care system and the health professions.

Syllabus:
The specific issues outlined below are indicative of the content of the subject and other contemporary issues may be introduced as students develop their own topics for presentation and discussion.
Examples of issues in the 3 domains include:

(1) Health Issues – health in aging population, health and lifestyle issues, chronic disease management, traditional medicine vs alternative therapy, technology and health, rising threats of infectious diseases, health in developed and developing countries,
(2) Health Care Issues – changing models of health care delivery, health care management issues, quality control, public vs private health care, globalization,
(3) Professional Issues – professional education, specialization, professional autonomy, ethics and standards of practice, legislative issues, inter-disciplinary communication and collaboration, cultural sensitivity and competency.

Reading list
(Material from selected journals and monographs will also be used.)

GUIDE TO CULTURAL COMPETENCE and CULTURAL ASSESSMENT CHECK LIST (published by the Queensland Health Authority, Australia)
Module Title: Physiotherapy in Critical Care  
Subject Code: RS502

Credit Value: 3  
Date of Submission: 28 November 1994  
Updated: 6 May 2002

Originating Staff & Department(s):  
Prof. Alice Jones (RS)

Pre-requisites: Nil

Recommended Background Knowledge:
An understanding of the physiology of the respiratory and cardiovascular systems equivalent to that of a final year student in the undergraduate programme in Physiotherapy plus one year’s clinical experience with application of chest physiotherapy techniques to patients with cardiopulmonary disorders.

Exclusions:
This module is not available to students who do not hold a recognized physiotherapy professional qualification.

Learning Approach:
Web-based learning:
- Resource sessions: 18 hours
- Problem-based tutorial: 15 hours
- Seminar discussion: 9 hours

Clinical tutorial: 6 hours

Independent study hours:
- Reading recommended materials: 40 hours
- Preparation for problem-based tutorial: 25 hours
- Preparation for assignments: 55 hours

Sub-total: 120 hours

Assessment (types & weighting):
- Report on case study: 40%
- Project Proposal: 60%

Objectives:
with sufficient depth of knowledge to manage critically ill patients, the student will be able to
1. describe the pathophysiology of critical illness
2. describe the recent ventilator and monitoring technology in the management of patients in an intensive care unit
3. interpret recorded physiological data in an intensive care unit and relate these parameters to physiotherapy management
4. interpret reports of thoracic imaging
5. demonstrate an ability to communicate effectively with members of the critical care team and co-workers
6. demonstrate an ability to identify patient’s pathological problems and plan an effective treatment protocol for the patient from acute to sub acute cardiopulmonary rehabilitation
Syllabus:

1. Review of cardiopulmonary physiology
2. Ventilatory patterns & role of physiotherapy in weaning
3. Positive pressure ventilation device
4. Monitoring in the intensive care unit
5. Management of the critically ill
6. Thoracic imaging
7. Role of the physiotherapist in an intensive care unit
8. Cardiopulmonary rehabilitation
9. Physiotherapy research and outcome measurements in cardiopulmonary rehabilitation

Reading List:


AND relevant articles from reference sources
SUBJECT DESCRIPTION FORM

Subject Title: Clinical Education Techniques  Subject Code: RS503

Credit Value: 3  Date of submission: Oct 91

Responsible Staff & Department: Dr Kit Sinclair (RS)

Pre-requisites: Nil

Recommended Background Knowledge: Nil

Exclusions: Nil

Learning Approach:

Contact Hours:
Lecture 6 hours
Group discussion seminar, role play, presentation 36 hours
Sub-total: 42 hours

Independent Study Hours:
Literature review, reading, preparation, practical implementation 100 hours
Sub-total: 100 hours

Assessment (types & weighting):

Course Work: Portfolio Assessment. (100%)
This should include three pieces of work which demonstrate (with rationale) that the student has fulfilled at least three objectives of the subject eg. Write up of a role play, write up of a teaching schedule with rationale, presentation of a teaching session, or an aspect of a reflective journal.

Objectives:

1. Integration of academic and clinical programme
   - philosophy and framework of clinical education
   - structure of clinical education to achieve academic goals
2. Domains and objectives
   - cognitive, affective and psychomotor domains
   - aims and objectives for clinical education
3. Teaching methodology
   - teaching learning for understanding
   - matching teaching learning process to objectives
   - teaching methods to suit different teaching situations
   - instructional climate
4. Facilitation communication within health environment
   - communication skills
   - feedback in learning
   - student problems and solutions
5. Planning student programmes
   - goals and strategies for different forms of teaching
   - suitability for learning outcomes
6. Assessment
   - types and styles
   - relation of assessment to objectives
   - functions of assessment
   - report writing and clinical projects
   - problems and solutions
   - assessing teaching and curriculum

Reading List:


### Subject Description Form

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<thead>
<tr>
<th>Subject Title:</th>
<th>Clinical Measurement and Evaluation</th>
<th>Subject Code:</th>
<th>RS504</th>
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<tr>
<td>Credit Value:</td>
<td>3</td>
<td>Date of submission:</td>
<td>Oct 91</td>
</tr>
</tbody>
</table>
| Pre-requisites:     | Nil                                 | Responsible Staff & Department: | Dr Kevin S C Kwong (RS)  
|                     |                                     |               | Dr Jufang He (RS) |
| Recommended Background Knowledge: | Nil                               | Exclusions: | Nil |

**Learning Approach:**

This subject is designed to allow the students to have substantial amount of practical sessions on equipment/apparatus to prepare them for thorough investigation in the form of mini project. Students may be required to perform tests, measurement or assessment of normal subjects or patients. In some of the topics, they will be required to give a report of appraisal of the system on the technical specifications and give comments on the completeness, suitability and adequacy in being an interfacing device for the patient of a particular clinical problem.

**Contact Hours:**

- Practical: 42 hours
- Sub-total: 42 hours

**Independent Study Hours:**

- Testing and measurement: 50 hours
- Review and reading: 50 hours
- Sub-total: 100 hours

**Assessment (types & weighting):**

- Course Work (100%)
  - Report(s)
  (The students will be assessed on the reports which they will be required to submit according to specific requirements of each individual systems they are assigned to study.)

**Objectives:**

To provide an opportunity for the students to apply the acquired knowledge in the clinical assessment of patients' physical and functional capabilities through an extended use of existing assessment/measurement systems. Students will be required to give an appraisal on the technical, functional aspects of various devices designed as patient-machine interfacing or assessment tools for patients' physical and functional capability.
Syllabus:

This subject provides the student a chance to consolidate the knowledge acquired, and is to be considered as a pre-amble of a larger scale project. The students are required to study in the following aspects:

1. Technical aspects.
2. Design and material study.
3. Accuracy and reliability.
5. Suitability for use on patient.
7. Calibration.
8. Setting up new testing protocol or modification of old ones.
9. Evaluation from a technical point of view.
10. Exploration of further applications and uses.
11. Actual practical use in a clinical situation.
12. Strategy planning in the use and applications.

Indicative Syllabus:

1. Biomechanical Evaluation of Musculoskeletal System
   Muscle Strength and Endurance Evaluation
   Range of Movement of the Joint
   Electromyogram as Related to Muscle Function
2. Functional Assessment
   Gait Analysis
   Work Simulation
3. Evaluation of Physical Therapeutics
   Spinal Movement
   Biomechanical Study of Mobilisation
4. Assessment of Cardio-pulmonary System
   Ambulatory Monitoring of Cardiac Performance
   Ergometry for Stress Tests
   Study of Physiological Costs
5. Blood Pressure Monitoring System
   Oximetry for Monitoring Oxygenation
   Monitoring of ECG, EEG and EMG
   Spirometry - Lung Function Assessment, and Measurement of Airways Resistance
6. Interfacing Devices for Disabled
   Switches for Disabled
   Environmental Control
   Communications System for Disabled
7. Computing for Disabled
   Software in Rehabilitation
8. Medical Informatics System
   Rehabilitation Information System

Reading List:

The published manual and related academic and technical information will be given. Background information will be supplied as required.
SUBJECT DESCRIPTION FORM

Subject Title: Developmental Issues in Children With and Without Disabilities

Subject Code: RS507

Credit Value: 3

Date of Submission: Dec 97
(revised May 06)

Responsible Staff & Department:
Dr Dora Poon (RS)
Dr Eria Li (RS)

Pre-requisite: Nil

Recommended background knowledge:
At least one year experience in working with children with developmental disabilities prior to applying for this subject.

Exclusion: Nil

Learning Approach:
Interactive including forums and on-line teaching and learning

Contact Hours:
- Lecture: 12 hours
- Tutorial/Seminar/Practical: 20 hours
- Problem-based cases: 10 hours
Sub-total: 42 hours

Independent Study Hours:
- Reading: 50 hours
- Preparation for written assignment: 30 hours
- Preparation of case discussion, seminar: 30 hours
Sub-total: 110 hours

Assessment:
Coursework (100%)
- Fieldwork activity report: 25%
- Assignments: 50%
- Group seminar presentations: 25%

Objectives:
Upon successful completion of this subject, the student will be able to:
1. Analyse theories of human development and discuss the implications of various factors affecting human development including in utero related problems.
2. Apply theories and principles of growth and development in the areas of motor, sensory, perceptual, psychosocial, cognitive and communication functions to selected populations.
3. Analyse the importance of inter-relationships among the different areas of development.
4. Identify and analyse problems/deviations in the different areas of development.
5. Interpret selected standardised and non-standardised developmental screening procedures for children with developmental disabilities.
6. Discuss the needs of children with disabilities and the impact on their families.
7. Provide a solution for addressing a selected identified need of the child.
8. Apply principles of learning and motor learning to children with and without developmental disabilities

Syllabus:
1. Neuroanatomy and neurophysiology as related to child development
2. The process and theories of child development
3. The inter-relationships of various aspects of growth and development of the child and adolescent.
4. Factors affecting growth and development at various stages of fetal, child and adolescent development e.g.
   - genetics
   - pathophysiological process
   - environmental conditions
   - cultural values (including play opportunities)
5. Principles of early intervention for children and their families
6. The needs of children with developmental disabilities and their families
7. Selected standardised and non-standardised developmental screening procedures for children
8. Motor, sensory, perceptual, psychosocial, cognitive and communication problems of children with developmental disabilities
9. Local and international service models e.g. educational and health care services

Reading list
Opper S (1996). *Hong Kong’s Young Children: Their Early Development & Learning*. Hong Kong, Hong Kong University Press.

Selected reference articles and standardized tests.
SUBJECT DESCRIPTION FORM

Subject Title: Neuro-psychological Rehabilitation  
Subject Code: RS510

Credit Value: 3  
Date of submission: Jan 94  
(revised June 96)

Responsible Staff & Department: Dr David Man (RS)

Pre-requisites: Nil

Recommended Background Knowledge:  
Basic anatomy in neuroscience: Regional and systematic neuroanatomy of the nervous system and functional neurochemistry.

Exclusions: Nil

Learning Approach:
Contact Hours:
  Lecture 15 hours  
  Tutorial 21 hours  
  Seminar 4 hours  
Sub-total: 40 hours

Independent Study Hours:
  Literature search 25 hours  
  Peer group study 25 hours  
  Case study 20 hours  
  Field visits 10 hours  
  Written assignment 20 hours  
Sub-total: 100 hours

Assessment (types & weighting):
Course Work (100%)  
  Essay(s) 60%  
  Seminar presentation 40%

Objectives:
On completion of this Subject the student will be able to:
1. evaluate major theoretical and methodological development in neuropsychological rehabilitation,  
2. develop behaviour and ecological assessment, specific treatment strategies for neuropsychological deficits in Hong Kong, and  
3. develop research interests which form the base for evaluation of neuropsychological programmes.
Syllabus:

1. Assessment and methodological issues:
   - Pathological basis for different neuropsychological dysfunction
   - Individual differences in neuropsychological recovery
   - Neuropsychological assessment for rehabilitation
   - Rehabilitation programme: application of theory
   - Issues in behavioural neurology and brain injury (psychiatric perspective)
   - Psychosocial variables affecting cognitive dysfunction and family

2. Neuropsychological rehabilitation techniques:
   - Neuropsychotherapy
   - Structured group treatment
   - Long-term family intervention
   - Communication problems
   - Technology in rehabilitation

3. Professional and legal issues:
   - Professional issues in neuropsychological rehabilitation
   - Legal issues that commonly confront brain-injury survivors and their families

4. Neuropsychological rehabilitation and community integration:
   - Vocational rehabilitation of brain injured
   - Team approach in holistic care

5. Representative research and application:
   - International and local neuropsychological rehabilitation programmes.

Reading List:

Books


Journals
Brain Injury
The Journal of Cognitive Rehabilitation
Journal of Head Trauma Rehabilitation
Rehabilitation Education
Rehabilitation Psychology
### Subject Description Form

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<tr>
<th>Subject Title:</th>
<th>Research Methods &amp; Data Analysis</th>
<th>Subject Code: RS517</th>
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<td>Credit Value:</td>
<td>3</td>
<td>Date of Submission: Dec 94 (revised May 06, Jul 07)</td>
</tr>
<tr>
<td>Responsible Staff &amp; Department:</td>
<td>Dr Macro Pang (RS) Dr Guo Xia (RS) Dr Andy Cheng (RS) Prof. Daniel Chow (HTI) Dr Peter French (SN)</td>
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<tr>
<td>Pre-requisite:</td>
<td>Nil</td>
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<tr>
<td>Recommended background knowledge:</td>
<td>Basic knowledge of research methods equivalent to the final year of a recognized undergraduate programme of a health care discipline.</td>
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<td>Nil</td>
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<td>Learning Approach:</td>
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<tr>
<td>Contact hours:</td>
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<tr>
<td>Lectures</td>
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<td>Practicals</td>
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<td>Tutorial</td>
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<td>Independent study hours:</td>
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<td>Self-study</td>
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<td>Course works (seminar preparation/assignments)</td>
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<td>Coursework (100%):</td>
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<tr>
<td>Proposal writing</td>
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<td>Written test (open book)</td>
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<td>Objectives:</td>
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<tr>
<td>1. To broaden the student's perspectives in different paradigms of research</td>
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<td>2. To develop the student's competence in research skills in their own area of study</td>
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<tr>
<td>3. To develop the ability to critically analyse and interpret research findings and data, including the use of software packages</td>
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</table>
Syllabus: (Indicative Content)

1. Developing research
   - data collection and sampling methods, ethics, research proposal writing

2. Research tools
   - observation of behaviour, rating/attitude scales, questionnaire design, interview techniques
   - designs of hardware instrumentation

3. Confidence in research
   - validity and reliability

4. Paradigms of research
   - case studies, qualitative research, surveys, fieldwork, grounded theory methods, action research
   - descriptive and analytic epidemiology, clinical trials, evaluation of clinical skills
   - the experimental process, classical experimental designs, quasi-experimental designs

5. Analysis of qualitative and descriptive data (with the use of software packages such as NUDIST)
   - content analysis, textual analysis, analysis of survey data, coding procedure

6. Analysis of quantitative data (with the use of software packages such as SPSS)
   - hypothesis testing, analysis of variance and covariance, correlation and regression, non-parametric statistics, Chi-square statistics

7. Evaluating research
   - critical appraisal of selected journal articles, research grant application, publication, dissertation

Reading list


Chenitz C and Swanson C (1986) From Practice to Grounded Theory: Qualitative Research in Nursing Addison-Wesley, Menlo Park, CA.


Textbook:

SUBJECT DESCRIPTION FORM

Subject Title: Scientific Basis of Musculoskeletal Disorders

Subject Code: RS518

Credit Value: 3

Responsible Staff & Department:
Prof. Gabriel Ng (RS)
Dr Simon Yeung (RS)

Pre-requisites: Nil

Recommended Background Knowledge:
Foundation knowledge of musculoskeletal science and pathology equivalent to the level of an undergraduate physiotherapy programme.

Exclusions: Nil

Learning Approach:

Contact Hours:
- Lectures: 21 hours
- Laboratories/Practicals: 6 hours
- Seminars: 15 hours
Sub-total: 42 hours

(Estimated contribution from visiting experts: 6 hours)

Independent Study Hours:
- Self-study: 30 hours
- Preparation of Assignment/Presentation: 40 hours
- Preparation of Laboratory reports: 20 hours
Sub-total: 90 hours

Assessment (types & weighting):

Course Work 60%
- Assignment(s) 40%
- Laboratory Report(s) 20%

Examination 40%

Objectives:
1. To deepen the understanding of selected areas of musculoskeletal science and pathology.
2. To apply the anatomical / physiological knowledge in the clinical context for the diagnosis and treatment of musculoskeletal problems.
3. To develop a scientific approach in the solution of clinical problems of the musculoskeletal system.
Syllabus:

1. Structures and functions of bones and other soft connective tissues, tissue tightness and effects of stretching.
2. Muscle strength - adaptation of muscles, assessment, electromyography, muscle fatigue, motor control and instability.
3. Anatomy and physiology of nociception, pain modulation, nociceptive therapy, compression injury of the nervous tissue.
5. Functional anatomy of the musculoskeletal system – interactions between soft tissues, muscle actions, joint movement patterns and effects of aging.
6. Musculoskeletal trauma - the anatomical and physiological bases of fracture and dislocations, and soft tissue injuries.

References:


Nordin M and Frankel VH (2001) Basic Biomechanics of the Musculoskeletal System (3rd Ed). Lippincott Williams & Wilkins

AND relevant articles from reference sources
**SUBJECT DESCRIPTION FORM**

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<td>March 2006</td>
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<td>Responsible Staff &amp; Department:</td>
<td></td>
<td></td>
<td>Dr Eria Li (RS)</td>
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<td></td>
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<td>Dr Andrew Siu (RS)</td>
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<td></td>
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<td>Dr Cecilia Li-Tsang (RS)</td>
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<tr>
<td>Pre-requisites:</td>
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<tr>
<td>Recommended Background Knowledge:</td>
<td>Work experience in vocational or pre-vocational rehabilitation setting for people with disabilities such as physical handicap, psychiatric disabilities, and developmental disabilities would be an advantage.</td>
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<td></td>
<td>Lecturers</td>
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<td>Seminar preparation</td>
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<td>Written Test</td>
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<td></td>
<td>Seminar Presentation</td>
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<tr>
<td>Objectives:</td>
<td>Upon completion of this subject, the student will be able to:</td>
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<td>1. critically analyze and evaluate the conceptual framework and theories in relation to the international and local development of vocational rehabilitation;</td>
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<td>2. develop a creative approach to explore the vocational aspirations of people with disabilities with the emerging job opportunities in the job market;</td>
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<td>3. develop a scientific and collaborative approach to the professional practice in vocational rehabilitation;</td>
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<td>4. cultivate research ideas in vocational rehabilitation for different disability groups.</td>
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</tbody>
</table>
Syllabus:

1. Current theories in pre-vocational and vocational rehabilitation
2. Social and political context of the international and local vocational rehabilitation
3. Vocational aspirations of people with physical handicap, psychiatric disabilities or developmental disabilities;
4. Role of employers, co-workers and professionals such as occupational therapists, social workers, vocational counselors and teachers in vocational rehabilitation process across different types of rehabilitation settings
4. Vocational assessment and evaluation (standardized and non-standardized instruments)
5. Job analysis, career development, job search and natural support
6. Strategies in vocational rehabilitation including pre-vocational training, supported employment, employee re-training, and integrated vocational rehabilitation service.

Reading List:


SUBJECT DESCRIPTION FORM

Subject Title: Advanced Occupational Therapy Study

Subject Code: RS5200

Credit Value: 3

Responsible Staff and Department: Dr Jenny Chung (RS)

Pre-requisites: Nil

Recommended Background Knowledge: Nil

Mutual Exclusions: Nil

Learning Approach:

Contact hours:

Guided study 16 hours
Seminar 8 hours
Sub-total: 24 hours

Independent study hours:

Self study 50 hours
Preparation of seminar 20 hours
Written assignment 30 hours
Sub-total: 100 hours

This subject adopts a student-centred learning approach in which individual students will receive guided study under the supervision of a faculty member. During the learning process, students are facilitated to identify the learning goals and objectives in an area of occupational therapy practice that they wish to further build upon their clinical and professional knowledge. The students, together with their supervisors, formulate a collaborative plan of the learning contents and activities. Self-directed and reflective learning are another two important facets of this subject. The former is one of the recent theoretical developments in adult education while the latter is imperative for occupational therapy practice.

Assessment:

Written Assignment 80%
Seminar presentation 20%

Objective:

Adopting a student-centred learning approach, this subject aims to equip students with the latest and cutting-edge clinical knowledge and practice and to pursue an in-depth study in the chosen area of study that has strong relevance to their clinical practice, under the guidance of an academic supervisor who is an expert in the area.

Upon satisfactory completion of this subject, students should be able to:

1. Critically review professional occupational therapy knowledge and scientific papers on evidence-based practice in the chosen area of study
2. Analyse and synthesize up-to-date scientific information for an in-depth discussion on the relevance and application to the current occupational therapy practice in the chosen area of study.

3. Critically discuss the future development of occupational therapy practice in the chosen area of study.

4. Be reflective in the learning process, and formulate self-directed study plan for future studies.

Keyword syllabus:

Students choose an area that has a strong relevance to their present occupational therapy practice, such as hand rehabilitation, adolescent and adult psychiatry, work rehabilitation, neuroscience, cognitive rehabilitation, and geriatric rehabilitation, which they wish to further build on their present professional knowledge and understanding. By means of the student-centred learning approach, most of the learning tasks will be done on an individual basis under the facilitation of an academic supervisor. The academic supervisor will provide ongoing guidance and feedback on the learning plan, the learning tasks, and the written assignment. The academic supervisor may arrange the student to visit clinical practice, wherever relevant and appropriate. This subject may serve as a foundation for students to formulate a proposal that can be further developed into a research project.

Students are required to deliver a 30-minute seminar presentation on the learning task and progress, followed by a 15-minute discussion, at two thirds of the subject, and submit a written assignment on the study topic, with a length of 2,500 words, at the end of the subject.

Indicative reading list and references:

References and suggested reading list will be provided by academic supervisor(s) as relevant to the chosen area of study.

References on adult education and self-directed learning


SUBJECT DESCRIPTION FORM

Subject Title: Current Development in Neurological Rehabilitation
Subject Code: RS5201

Credit value: 3

Responsible Staff & Department:
Dr Karen Liu (RS)

Pre-requisites: Nil

Recommended Background Knowledge:
Experience in neurorehab is beneficial to the learning.

Mutual Exclusions: Nil

Learning Approach:

Contact Hours:
- Lecture: 12 hours
- Tutorial/seminar: 21 hours
- Practicals: 9 hours
Subtotal: 42 hours

Independent Study Hours:
- Assignments and reports: 40 hours
- Seminar presentation: 20 hours
- Reading / self-study: 45 hours
Subtotal: 105 hours

Assessment:

Portfolio Assessment
A student-centred assessment: students will develop and justify their own assessment portfolio based on fulfilling the subject objectives. Lecturers will initially work very closely with students to clarify the objectives and expectations of the subject. Types of items that could be included in their portfolio include: a case study, critical review of an article, test critique, written assignment, web page, reflective journals etc. A written report and an oral presentation will be developed based on this work.

Coursework (100%)
- Report: 70%
- Oral presentation: 30%

Objectives:
The overall aim of this subject is to provide the student with the opportunity to integrate scientific knowledge and research evidence into their clinical practice. The focus will be on understanding theoretical frameworks and perspectives in relation to research and clinical practice, to encourage hypothesis testing in the clinical setting, to
critically analyse the relevant literature and to put evidence based information into clinical practice. The theme is ‘using scientific evidence to improve clinical practice’.

On completion of the module, the student will be able to:

1. Interpret various theories of motor learning, neuroplasticity, active learning and control in relation to neurological rehabilitation;
2. Demonstrate an understanding of the research methodologies in neurological rehabilitation;
3. Integrate knowledge of standardized measures of function, their purpose, and psychometric properties to select, implement and interpret an appropriate measure for specific client groups, populations, settings and objectives;
4. Design, implement and evaluate relevant, evidence-based programs to enhance or maintain function;
5. Extract, critically analyse and apply information from relevant research articles in this subject area; and
6. Apply select treatment and/or technologies to neurological rehabilitation

Keyword syllabus: (Indicative Content)

Evidence-based approach to the following:
1. Theories of motor learning, neuroplasticity, active learning and control.
2. Current development in neuro-rehabilitation, e.g. self-regulation, mental imagery, constraint-induced therapy, virtual reality.
3. Critically review and administer standardized instruments.
4. O.T. Management of special populations such as dementia, Parkinson’s disease, CVA, brain injuries, Multiple Sclerosis, Myasthenia Gravis.
5. Community neuro-rehabilitation and fall prevention
6. Advances in technology and adaptive equipment.
7. Alternative approaches in neurological rehabilitation.
8. Selected Chinese therapeutics to neurological rehabilitation.
Discussion of selected research articles throughout.

Indicative reading list and references:


**SUBJECT DESCRIPTION FORM**

**Subject Title:** OT Management for Upper Extremity Participation in Neurological Conditions  
**Subject Code:** RS5202

**Credit Value:** 3

**Responsible Staff & Department:**
- Dr Kenneth Fong (RS)
- Dr Karen Liu (RS)
- Ms Rebecca Wong (RS)
- Mr Wei Yunong (RS)

**Pre-requisites:** Nil

**Recommended Background Knowledge:**
At least one year experience in working with people with hemiplegia prior to applying for this subject.

**Mutual Exclusions:** Nil

**Learning Approach:**

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>12 hours</td>
</tr>
<tr>
<td>Tutorial/ Seminar</td>
<td>12 hours</td>
</tr>
<tr>
<td>Independent study/ e-learning</td>
<td>18 hours</td>
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<tr>
<td>Subtotal:</td>
<td>42 hours</td>
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</table>

**Assessment:**

<table>
<thead>
<tr>
<th>Coursework (100%)</th>
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<tbody>
<tr>
<td>Written Assignment</td>
<td>70%</td>
</tr>
<tr>
<td>Presentation</td>
<td>30%</td>
</tr>
</tbody>
</table>

**Objectives:**

On completion of the module, the student will be able to:

1. understand the recovery pattern of upper extremity for people with hemiplegia;
2. understand and apply the updated assessments for upper extremity in neurological conditions;
3. understand and apply the current management approaches for hemiplegic upper extremity; and
4. understand the approach of Traditional Chinese Medicine in Upper Extremity Rehabilitation

**Keyword syllabus: (Indicative Content)**

1. Neurological and functional recovery of upper extremity in people with hemiplegia
2. Critical review of upper extremity evaluation for neurological Conditions
   - Neurological testing, e.g. Modified Ashworth scale, FMA, Chedoke, Motor Assessment Scale (MAS)
   - Psychometric testing, e.g. MMDT, Purdue, Morberg, Nine-hole, Box & Block
   - Functional Testing, e.g. FTHUE, ARA, Jebsen
   - Real-life measurement by accelerometer

3. Current management for hemiplegic upper extremity
   - Neurodevelopment approach, e.g. Brunnstrom, NDT
   - Motor Learning Theory
   - Updated treatment for hemiplegic hand function, e.g. Constraint Induced Movement Therapy
   - Updated treatment for hemiplegic upper extremity with unilateral/ body neglect
   - Updated management of shoulder precautions for hemiplegic upper extremity
   - Other modalities: FES, Robotic therapy, etc.

4. Traditional Chinese Medicine in hemiplegic upper extremity rehabilitation
   - Theories and Principles
   - Acupuncture
   - Tuina

Indicative reading list and references:


SUBJECT DESCRIPTION FORM

Subject Title: Advanced Physiotherapeutic Clinical Skills in Neuro-rehabilitation

Subject Code: RS5204

Credit Value: 3

Responsible Staff and Department:
Dr Margaret Mak (RS)
Dr Stephanie Au-yeung (RS)
Dr Marco Pang (RS)
Dr Shamay Ng (RS)

Pre-requisites: Nil

Recommended Background Knowledge:
One year of clinical experience in physiotherapy management of neurological patient.

Mutual Exclusions:
This subject is not available to students who do not hold a recognized professional qualification in physiotherapy.

Learning Approaches:

Contact hours:

Lecture 6 hours
Seminars/tutorials 12 hours
Practical 24 hours
Sub-total: 42 hours

Independent study hours:

Self-study 40 hours
Preparation for seminar 30 hours
Preparation for case study presentation 30 hours
Sub-total: 100 hours

Assessment:

Course Work (100%)
Seminar presentation 30%
Case study 40%
Practical test 30%

Objectives:

This subject is designed to advance the level of competence and clinical skills in neuro-rehabilitation for practising physiotherapists. On completion of the subject, the student will be able to:
1. Extend the related theoretical and scientific knowledge into developing a higher level of expertise in clinical evaluation and management of patients

2. Critically apply analytical approach and clinical reasoning in clinical practice

3. Apply evidence-based advanced clinical skills in the management of people with neurological disorders

4. Evaluate complex clinical problems and to assess outcomes of interventions

5. Critically appraise relevant outcome measures to assess physiological functions, activities, participation and quality of life.

Keyword syllabus:

1. Updated knowledge in medical / neurosurgical procedure, neuroimaging and diagnostic techniques

2. Applications of motor control and motor learning theories in neuro-rehabilitation

3. Evaluation and clinical reasoning of neurological problems

4. Evidence-based treatment approaches in enhancing physiological functions ie. muscle tone, muscle strength, balance, coordination etc

5. Evidence-based treatment approaches in promoting functional independence and participations

6. Practice and critique outcome measures in assessing physiological functions, activities, participation and quality of life.

7. Health promotion and disease prevention, community rehabilitation for healthy and people with neurological disorders.

Indicative reading list and references:


Relevant research articles
SUBJECT DESCRIPTION FORM

Subject Title: Advanced Study of the Arts and Science of Tai Chi

Subject Code: RS5208

Credit Value: 3

Responsible Staff & Department:
Dr William Tsang (RS)
Dr Amy Fu (RS)

Pre-requisites: Nil

Recommended background knowledge: Nil

Mutual exclusions: Nil

Learning Approach:

Contact Hours:
- Lecture 18 hours
- Seminar 3 hours
- Tutorial 9 hours
- Practical 12 hours
Sub-total: 42 hours

Assessment:

Course Work (100%)
- Presentation 40%
- Written assignment 50%
- Practical test 10%

Objectives:

On completion of the subject, the student will be able to:
1. comprehend the Eastern concept of holistic health promotion
2. understand the mind-body components of oriental exercises, specifically on Tai Chi
3. understanding the balance control, cardiopulmonary, quality of life and cognitive function due to aging, degeneration and insult
4. apply the state-of-the-art instrumentation to measure balance control, cardiopulmonary, quality of life and cognitive function and interpret the results
5. acquire the basic skill in Tai Chi and synthesize it into health promotion perspectives
6. critically review the studies on Tai Chi from a scientific and research point of view

Keyword syllabus:

1. Eastern concept of health promotion
2. Background and theories of oriental exercises, specifically on Tai Chi and Qigong
3. Review of physiology of balance control and cardiopulmonary function
4. Concepts and techniques in measuring balance control, cardiopulmonary function, quality of life and cognitive function
5. Conduct experiment on measuring balance control, cardiopulmonary function, quality of life and cognitive function
6. Practice of Tai Chi and Qigong
7. Applications to rehabilitation
   a. Fall prevention
   b. Stroke rehabilitation
   c. Subjects with frailty
   d. Subjects with visually impairment
8. Critical reviews

Indicative reading list and references:


Yu, K. P. *Concise Dictionary of Tai Chi Chuan*. Taiwan: Hsin Chao She, 2002.
# SUBJECT DESCRIPTION FORM

<table>
<thead>
<tr>
<th>Subject Title:</th>
<th>Advanced Study in Neuroanatomy and Neurophysiology</th>
<th>Subject Code:</th>
<th>RS524</th>
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<tr>
<td>Credit Value:</td>
<td>3</td>
<td>Date of submission:</td>
<td>Oct 93 (revised Mar 06)</td>
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<tr>
<td>Responsible Staff &amp; Department:</td>
<td></td>
<td>Dr Margaret Mak (RS)</td>
<td></td>
</tr>
<tr>
<td>Pre-requisites:</td>
<td>Nil</td>
<td></td>
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</table>

## Recommended Background Knowledge:

An understanding of neuroanatomy and neurophysiology equivalent to undergraduate level of health care professional training.

## Exclusions:

Nil

## Learning Approach:

<table>
<thead>
<tr>
<th>Contact hours</th>
<th>Independent study hours</th>
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</thead>
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<td>Lecture</td>
<td>Review of literature and interactive e-learning activities</td>
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<tr>
<td>Tutorials / Seminars</td>
<td>Preparation for seminars</td>
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<td></td>
<td>Preparation for assignment</td>
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<td></td>
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## Assessment (types & weighting):

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<tr>
<td>Written test</td>
<td>50%</td>
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## Objectives:

On completion of the subject, the student will be able to

1. further the knowledge in the anatomy and physiology of human nervous system.
2. deepen the understanding of the role of nervous system in movement control and cognitive functions.
3. have an overview of the response of nervous system to aging, degeneration and insult.
4. deepen the understanding of the plasticity of the nervous system.
5. critically review recent research on neuroanatomy and neurophysiology.

Syllabus:


2. Contributions and integration of sensory information, spinal cord and higher centres in movement control. Neurophysiology basis of motor-relearning.


4. Changes of the central nervous system to aging, dementia and degenerative disorders.

5. Reactions of the central nervous system to insult - gross structural changes and molecular level. The mechanisms of plasticity in the central nervous system.

6. Responses to lesions in the peripheral nervous system. The regeneration / recovery in the peripheral nervous system after injuries.

7. Recent advances on neuroanatomy and neurophysiology.

Reading List:


And relevant articles from professional journals.
**SUBJECT DESCRIPTION FORM**

**Subject Title:** Psychosocial Rehabilitation for People with Developmental Disabilities  
(Previous title: Therapeutic Intervention for People with Developmental Disabilities)

**Subject Code:** RS537

**Credit Value:** 3  
**Date of Submission:** Dec 93

**Responsible Staff & Department:**  
Dr Kenneth Fong (RS)  
Dr Eria Li (RS)  
Dr Lee Tsoi Kui (APSS)

**Pre-requisite:** Nil

**Exclusion:** Nil

**Recommended background knowledge:** Nil

**Learning Approach:**

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<td>Sub-total:</td>
<td>42 hrs</td>
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(Teaching hours - APSS: 9 hours, RS: 33 hours)

**Independent Study Hours:**

<p>| | |</p>
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<td>Self-study</td>
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**Assessment:**

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<tbody>
<tr>
<td>Written assignment</td>
<td>70 %</td>
</tr>
<tr>
<td>Presentation</td>
<td>30 %</td>
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</table>

**Objectives:**

On completion of this Subject, the student should be able to:

1. understand the integrated nature of psychosocial intervention for people with developmental disabilities from a system theory’s perspective
2. understand and apply the individual care plan approach
3. understand and apply behavioral, cognitive-behavioral and social intervention strategies for people with developmental disabilities
Syllabus:

1. Overview of psychosocial intervention: A system theory’s perspective
2. Individual Care Plan
   - Theories and principles
   - Application
3. Behavioral intervention
   - Theories and principles
   - Assessment of challenging behavior
   - Treatment of challenging behavior
4. Cognitive-behavioral intervention
   - Theories and principles
   - Cognitive Restructuring
   - Cognitive skills training
5. Social intervention
   - Therapeutic community
   - Casework and counseling
   - Groupwork and therapy

Reading list


Tse, J. W. L. et al. (1992). *Ecological curriculum for people with mental handicaps.* Hong Kong: City University of Hong Kong.


Subject Title: Psychometric Theories and Practice

Subject Code: RS538

Credit Value: 3

Date of submission: Oct 94

Responsible Staff & Department:
Prof. Chetwyn C H Chan (RS)
Dr Andrew Siu (RS)

Pre-requisites: Nil

Recommended Background Knowledge:
Basic concepts of descriptive and inferential statistics including linear regression and correlation.

Exclusions: Nil

Learning Approach:
Contact Hours:
- Lecture: 24 hours
- Tutorial: 6 hours
- Laboratory: 10 hours
Sub-total: 40 hours

Independent Study Hours:
- Self Study: 70 hours
- Assignments: 10 hours
- Final Group Project: 20 hours
Sub-total: 100 hours

Assessment (types & weighting):
- Course Work (100%)
  - Written Assignments (5 exercises): 50%
  - Final Group Project: 50%

Objectives:
1. To equip students with basic psychometric and measurement theories required for instrumentation and validation studies implemented in clinical field.
2. To enable students to apply basic statistical tests to conduct psychometric analyses.
3. To gain experience in using different statistical packages to investigate and collect evidence of psychometric properties of different clinical assessment tools and outcome measures.
Syllabus:

1. Preliminary Statistical Revision:
   - Linear regression
   - Correlation - Pearson's, point-biserial, biserial
   - Analysis of Variance and Co-variance
2. Standards of Psychological and Clinical Testing
3. Criterion and Norm Referenced Testing
4. Level of Measurement and Its Relationship with Psychometric Analyses
5. Introduction to Classical Test Theory
6. Concepts of Reliability, i.e. coefficients of consistency and stability.
7. Different Methods of Reliability, e.g. split-half, Cronbach's Alpha, KR-20, KR-21, Intraclass Correlation Coefficient
8. Classical Model of Validity - Its History, Cronbach and Meehl, Loevinger, Anastasi, Nunnally
9. Messick's Model of Validation - Construct, Content-related, Nomological, Structural, and Criterion-related and Strategies to Collect Different Sources of Evidence
10. Psychometric studies of Functional Independence Measure (FIM), Canadian Occupational Performance Measure (COPM), Klein-Bell ADL Scale, and other clinical instruments

Textbooks:


Reading List:


SUBJECT DESCRIPTION FORM

<table>
<thead>
<tr>
<th>Subject Title: Contemporary Health Care Issues in Geriatrics</th>
<th>Subject Code: RS542</th>
</tr>
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<tbody>
<tr>
<td>(Previous title: Geriatrics and Gerontology)</td>
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| Credit value: 3     |

<table>
<thead>
<tr>
<th>Responsible Staff &amp; Department:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Anna Lau (RS)</td>
</tr>
<tr>
<td>Dr Margaret Mak (RS)</td>
</tr>
<tr>
<td>Katherine Wong (RS)</td>
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</table>

| Pre-requisites: Nil |

| Recommended Background Knowledge: Nil |

| Exclusions: Nil |

<table>
<thead>
<tr>
<th>Learning Approach:</th>
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<tbody>
<tr>
<td>Contact Hours:</td>
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<td>Lecture/Tutorials</td>
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<td>Seminars</td>
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<table>
<thead>
<tr>
<th>Independent Study Hours:</th>
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<tr>
<td>Self-study</td>
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<table>
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<th>Assessment (types &amp; weighting):</th>
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</thead>
<tbody>
<tr>
<td>Course Work (100%)</td>
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<tr>
<td>Written Assignment</td>
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<tr>
<td>Seminar Presentation</td>
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</table>

<table>
<thead>
<tr>
<th>Objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td>On completion of the Subject, the student will be able to:</td>
</tr>
<tr>
<td>1. explain how the epidemiology of the elderly population in Hong Kong could impact on the development of health care policy and services for this population.</td>
</tr>
<tr>
<td>2. analyse the contemporary health care issues related to the elderly population.</td>
</tr>
<tr>
<td>3. evaluate the existing health care system and services for the elderly population in Hong Kong.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Syllabus:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Epidemiology of the elderly population: analysis and its implications.</td>
</tr>
<tr>
<td>2. Contemporary issues in geriatric rehabilitation, such as 'Quality of Life', 'Health and Fitness' and 'Ethics'.</td>
</tr>
<tr>
<td>3. Care of and/or services for elderly people such as ‘primary health care’, ‘community care services’ and ‘psychogeriatrics’.</td>
</tr>
</tbody>
</table>
Reading List:

Books:


Lam, S.K. (1997). *The health of the elderly in Hong Kong*. Hong Kong: Hong Kong University Press.


Reports and Monographs:

Census and Statistics Reports (Hong Kong)


Journals:

*Age and Aging.*

*Clinical Gerontologist.*

*Journal of the American Geriatric Society.*

*The Gerontologist.*

*The Hong Kong Journal of Gerontology*
SUBJECT DESCRIPTION FORM

Subject Title: Application of Computer Technology in Therapy - Current Innovations and Practice

Subject Code: RS544

Credit Value: 3

Date of submission: Oct 95

Responsible Staff & Department:

Pre-requisites: Nil

Recommended Background Knowledge:
The students should have the basic concept and skills in applying computer technology in occupational therapy service.

Exclusion: Nil

Learning Approach:

Contact Hours:
- Lecture: 10 hours
- Practical: 30 hours
Sub-total: 40 hours

Independent Study Hours:
- Self-study: 70 hours
- Project: 30 hours
Sub-total: 100 hours

Assessment (types & weighting):

Course Work: (100%)
- Project work 100%

(The students should demonstrate their thorough understandings, systematic analysis and critical evaluative ability in designing computer applications e.g. hardware and/or software in occupational therapy practice for a selected case. The application(s) should be illustrated with theoretical justifications to show how it can improve the quality of life of the people with disabilities.)

Objectives:
On completion of the Subject, the students should be able to:-

1. explain the implications of the current computer technology development on the rehabilitation of the people with disabilities.
2. identify current development of computer applications in the rehabilitation of the people with disabilities.
3. integrate and apply the updated computer technology as a form of occupational therapy activity for the people with disabilities.
4. analyse and evaluate the effectiveness of applying computer technology to improve the occupational therapy outcome of selected cases.
Syllabus:

1. Implications of the current computer technology development to occupational therapy practice
2. Current application of computer technology to improve the functional independence of persons with disability e.g. computer accessibility, environmental control etc.
3. Design computer software for rehabilitation purposes with hypermedia programming techniques
4. Applying multimedia programming techniques in occupational therapy practice e.g. computer-assisted learning, patient education programme, case file management; etc.
5. Applying electronic information system in occupational therapy practice e.g. networking, telecommunications.
7. Case development to illustrate the application of the current computer technology in the occupational therapy practice for persons with disability.

Reading List:


**SUBJECT DESCRIPTION FORM**

<table>
<thead>
<tr>
<th>Subject Title:</th>
<th>Advanced Occupational Therapy Practice in Mental Health</th>
<th>Subject Code: RS545</th>
</tr>
</thead>
</table>
| Credit Value: | 3                                                      | Date of Submission: Feb 97  
(revised May 03) |
| Responsible Staff & Department: | Dr Matthew K. Yau (RS)  
Dr Andrew Siu (RS) |
| Pre-requisite: | Nil |
| Exclusion: | This subject is not available to students who do not hold a recognised occupational therapy professional qualification. |
| Recommended background knowledge: | Working experience as an occupational therapist. |
| Learning Approach: | This subject intends to adopt an interactive approach. Students are required to be self-motivated and actively involved in the learning process. The Subject's objectives will be achieved through: |
| Contact hours: |  |
| Lectures | 15 hours |
| Group discussion | 10 hours |
| Student's presentation | 10 hours |
| Self-directed learning | 7 hours |
| Sub-total: | 42 hours |
| Independent study hours: | |
| Self study | 100 hours |
| Assessment: | Coursework (100%)  
Presentation and 4 pages summary | 40% |
| Written assignment (3000 words) | 60% |
| Objectives: | At the completion of this subject students will be able to: |
| 1. | Critically evaluate the unique role and function of occupational therapy in mental health practice |
| 2. | Critically examine the clinical reasoning process and its application in occupational therapy mental health practice |
| 3. | Critically evaluate and compare current conceptual models of occupational therapy and their application in the management of different psychosocial problems and/or various mental health settings |
| 4. | Demonstrate the ability to select and apply practice models in various areas of psychosocial practice in terms of assessment, programme planning and evaluation |
| 5. | Outline a treatment program for mentally ill client consistent with a specified conceptual model of occupational therapy |
| 6. | Critically evaluate current occupational therapy programmes in student's work setting |
7. Identify occupational therapy intervention strategies to deal with various difficult problems or issues in mental health practice
8. Describing visions on the future role and service of occupational therapy.

Syllabus:

1. Overview of models of practice in psychosocial occupational therapy
   • Model development and hierarchies
   • Review current practice models in psychosocial occupational therapy
2. Review assessments tools for psychosocial occupational therapy
   • Identify current occupational therapy assessment tools, e.g. OCAIRS, Bay Area Functional Assessment, Functional Need Assessment, Kohnman Evaluation of Living Skills, Allen Cognitive Level Test
   • Selection and application of the assessment tools
3. Application of practice models in program/intervention planning in mental health practice
   • Overview of applications of practice model in occupational therapy interventions as documented in literature
   • Developing an understanding of the health care system and practice contexts
   • Analysis of case studies
4. Program evaluations in mental health practice
   • Meaning and significance
   • Review existing evaluation approaches, e.g. needs assessment, consumer satisfaction, behavioural outcome measure, in-depth interview and ethnography
   • Outcome measurement: principles and practice
5. Issues related to culture, value, attitudes and environment, and their impact on therapy
6. Clinical reasoning - forms of inquiry in a therapeutic practice
7. Issues, problems and trends related to occupational therapy practice in mental health

Reading list


SUBJECT DESCRIPTION FORM

Subject Title: Scientific Basis in Electrophysical Therapy

Subject Code: RS547

Credit Value : 3

Date of submission: Sept 97

Responsible Staff & Department: Dr Gladys Cheing (RS)

Pre-requisites: Nil

Recommended Background Knowledge:

Basic knowledge in the clinical applications of electrophysical modalities.

Exclusions:

This subject is not available to students who do not hold professional qualifications in Physiotherapy.

Learning Approach:

The course will consist of a combination of lectures, seminars and laboratory investigations. The students are expected to contribute actively during classes, and the academic staff will act as a facilitator.

Contact Hours:

- Lecture: 30 hours
- Seminar: 6 hours
- Laboratory: 6 hours

Sub-total: 42 hours

Independent Study Hours:

- Laboratory reports: 20 hours
- Group investigation: 20 hours
- Reading: 20 hours
- Assignment: 20 hours

Sub-total: 80 hours

Assessment (types & weighting):

Continuous Assessment (100%)

- Laboratory report: 25%
- Presentation of group investigation: 25%
- Individual written assignment (1000-1500 words): 50%
Objectives:

1. To provide practicing physiotherapists with an overview of the scientific basis and current trends in electrophysical therapy.
2. To examine several areas in depth to provide a framework for the participants of this subject to adopt an inquisitive approach in the therapeutic evaluation of electrophysical therapy.
3. To review the effectiveness of various electrophysical modalities in different clinical conditions.
4. To examine safety issues and standards of practice in the use of electrophysical therapeutic equipments.
5. To critically review recent researches in neurophysiology and their implications for electrophysical therapy.

Syllabus:

1. An overview of the scientific basis in electrophysical therapy:
   - The clinical implications of recent research findings and the current trends in the use of functional electrical stimulation, micro-current therapy, magnetic therapy, and laser therapy
2. Evaluation of current electrophysical therapy practices:
   - Consideration of the biophysical changes of tissue temperature, blood flow, muscle tension and electrical resistance of tissue to the applied electrophysical energy
   - Validation of these biophysical changes with laboratory work
   - Measurement of the output efficiency of various electrophysical therapeutic equipments
   - Consideration of the clinical standards and safe practice of these equipments
3. Neurophysiological basis of the use of electrophysical modalities for pain management:
   - Clinical decision making based on neurophysiological mechanisms for pain control
   - Possible role of acupuncture/electroacupuncture in pain reduction
   - Review on comparative effectiveness of various types of electrical stimulation
4. Electrodiagnosis and biofeedback:
   - Nerve conduction test, EMG recordings and correlation with muscle strength
   - Clinical application of EMG biofeedback
5. Update on neuromuscular electrical stimulation:
   - Muscle physiology, nerve-muscle interaction, phenotypic expression of muscle, validation for the frequency specificity stimulation regime and clinical application
   - Role of electrical stimulation in muscle re-education
   - Application of electrical stimulation in the management of stress incontinence
6. Effectiveness of various electrophysical modalities in neurological conditions:
   - Update on research evidence for using electrical stimulation to reduce spasticity and to facilitate motor control, with specific reference to functional electrical stimulation and various models of electrical stimulator.
7. Future trends in the development of electrophysical therapy:
   - The clinical applications of extracorporal shock wave therapy in treating musculoskeletal conditions
   - The use of electrophysical modalities (e.g. laser, pulsed electromagnetic field) for promoting wound healing
   - Potential development in the use of laser to facilitate nerve regeneration

Reading List:

SUBJECT DESCRIPTION FORM

Subject Title: Multidisciplinary Approach to Rehabilitation Evaluation of Older Adults

Subject Code: RS548

Credit Value: 3

Date of submission: Oct 98
(revised Jan 04)

Responsible Staff & Department: Dr Jenny Chung (RS)

Pre-requisites: Nil

Recommended Background Knowledge:
Foundation knowledge in geriatrics and gerontology as equivalent to undergraduate level.
RS542 “Contemporary Health Care Issues in Geriatrics”

Exclusions: Nil

Learning Approach:
This subject intends to adopt an interactive and case-based teaching-learning approach. Students are expected to participate actively in the learning process.
Lectures / Discussions 24 hrs
Student-led Seminars 18 hrs
Independent study hours 80 hrs

Contact Hours: 3 hours per week, for 14 weeks (One semester)

Assessment:
Course work (100%)
Group Presentation 40%
Assignment 60%

Objectives:
On satisfactory completion of this subject students should be able to:
1. Demonstrate effective membership in the multidisciplinary team.
2. Appreciate the role and contribution of evaluations used by different health care disciplines in the planning of a comprehensive geriatric rehabilitation program.
3. Critically assess theoretical, ethical, and conceptual issues in evaluation of older adults.
4. Develop the knowledge base and abilities required for
   - Determining purpose and functions of evaluation methods.
   - Analyzing instrument design and psychometric properties of different evaluation methods.
   - Selecting the appropriate evaluation methods for individuals and groups in different contexts.
   - Interpreting and applying results as a basis for program planning.
5. Identify future research and development needs.
Syllabus:

1. Theoretical, ethical and conceptual issues related to evaluation of older adults
   - Client-centred practice
   - The heterogeneous nature of older adults and their needs
   - Relevance of evaluation methods to older adults in community settings.

2. Assessment of the multi-dimensional needs of older adults and families to provide integrated rehabilitation programmes:
   - Quality of life measures
   - Functional assessments
   - Psychosocial assessments
   - Environmental evaluation (human and non-human)
   - Sensori-motor assessments
   - Cognitive assessments

   Associated methodological issues:
   - Psychometric properties
   - Limitations
   - Cultural relevancy and applicability
   - Relevance to programme planning
   - Outcome evaluation
   - Self-reported versus professional evaluation

3. Interpretation of assessment results as the foundation for total program planning and evaluation of treatment effectiveness.

4. Identification of future research and development needs.

Reading list


## SUBJECT DESCRIPTION FORM

### Subject Title: Acupuncture Theory and Practice in Physiotherapy

### Subject Code: RS549

### Credit Value: 3

### Date of submission: Nov 97

### Responsible Staff & Department: Dr Mason Leung (RS)

### Pre-requisites: Nil

### Exclusion:

This course is restricted only to people with recognised physiotherapy or medical qualifications.

### Recommended Background Knowledge:

Candidates should possess good knowledge of human musculo-skeletal anatomy and neuroanatomy, neurophysiology in pain and motor control. Those who have understanding in the theory of Transcutaneous Electrical Nerve Stimulation will have an advantage.

### Learning Approach:

<table>
<thead>
<tr>
<th>Contact hours:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>25 hours</td>
</tr>
<tr>
<td>Practical (12 x 0.5)</td>
<td>6 hours</td>
</tr>
<tr>
<td>Clinical practice (44 x 0.25)</td>
<td>11 hours</td>
</tr>
<tr>
<td><strong>Sub-total:</strong></td>
<td><strong>42 hours</strong></td>
</tr>
</tbody>
</table>

**Independent Study Hours:**

- Reading/self-study: 30 hours
- Assignment: 20 hours

**Total student hours:**

- 25 hours of lecture + 12 hours of practical + 44 hours of clinical attachment + 30 hours of self-study and 20 hours of assignment preparation = 131 hours

### Assessment:

<table>
<thead>
<tr>
<th>Written assessment</th>
<th>50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical skill</td>
<td>50%</td>
</tr>
</tbody>
</table>

### Objectives:

At the completion of this subject, students will be able to:

1. Understand the scientific basis of pain management and the neurophysiological effects of acupuncture in neuromotor control aspects.
2. Identify the major acupuncture points of the body and their therapeutic effects.
3. Choose the appropriate acupuncture points for treating various musculo-skeletal, neurological and cardiorespiratory conditions.

Acquire the appropriate technique of acupuncture manoeuvres through clinical practicum.

Master the fundamental acupuncture treatment skills for various conditions.

---

**Syllabus:**

Neurophysiological aspect of pain and motor control.

Outline of Chinese medical theory, history of acupuncture and the meridian concept.

Therapeutic applications of acupuncture.

Principles of selection of acupuncture points.

Practice of acupuncture techniques.

Clinical acupuncture practicum in hospitals in GuangZhou (China).

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**Reading list:**


Any suitable articles.
**SUBJECT DESCRIPTION FORM**

**Subject Title:** Research Proposal Writing  
**Subject Code:** RS550

**Credit Value:** 3  
**Date of Submission:** Feb 98  
(revised Dec 06)

**Responsible Staff & Department:**  
Prof. Gabriel Ng (RS)  
Dr Kevin Kwong (RS)

**Pre-requisite:** RS517 “Research Method and Data Analysis”

**Inclusion:**  
The subject is open to all students enrolled in the MSc Health Care scheme. Priority will be given to students in Occupational Therapy, Physiotherapy, Rehabilitation for People with Developmental Disabilities and Health/Rehabilitation Technology awards.

**Exclusion:** Nil

**Learning Approach:**

Students of this subject are expected to work with their academic supervisors on developing a proposal for their MSc thesis. The subject will be divided into a series of lectures and seminar presentations. The lecture series will focus on how to identify a research question, the ways to conduct research following the scientific approach, quantitative and qualitative data collections and analyses, research ethics, oral and written presentation skills. After the lecture series, students will present their research proposals in the format of student seminars.

Through preparation and presentation of their research proposals, students will further develop their analytical abilities and investigative skills.

**Contact Hours:**
- Seminars: 24 hours  
- Student's presentation: 18 hours  
- Sub-total: 42 hours

**Independent Study Hours:**
- Presentation preparation: 10 hours  
- Assignment: 30 hours  
- Reading/Self-study: 40 hours  
- Sub-total: 80 hours

**Assessment:**

Course work (100%)
- Presentation: 40%  
- Written assignment: 60%
Objectives:

At the completion of this subject, students will be able to:
1. develop their skills in the preparation of a research proposal with good theoretical formulation and realistic resource consideration.
2. facilitate the planning and implementation of dissertation project making relevance to the type, scope and setting of the study.

Syllabus: (Indicative Content)

1. Theory development and research
2. Concepts and methods of evaluative research
3. Instrumentation and measurement
4. Instrumentation - reliability & validity
5. Quantitative and qualitative data management
6. Research ethics
7. Presentation skills
8. Compilation of a research proposal

Reading list


References:


SUBJECT DESCRIPTION FORM

Subject Title: Ergonomics Intervention for work-related musculoskeletal disorders

Subject Code: RS552

Credit value: 3

Responsible Staff & Department:
- Dr Simon S. Yeung (RS)
- Dr Grace Szeto (RS)

Pre-requisite: Nil

Recommended Background Knowledge:
Knowledge in anatomy, physiology, pathology, exercise and movement science equivalent to the level of a recognised undergraduate programme

Exclusions: Nil

Learning approach:

Contact hours:
- Web-based lecture: 18 hrs
- Web-based tutorials: 9 hrs
- Directed studies in the WWW: 9 hrs
- Lab activities: 6 hrs

Sub-total: 42 hrs

Assessment:

Course work (100%)
- Laboratory reports: 30%
- A case study report: 40%
- Written assignments: 30%

Objectives:

On completion of the subject, the student will be able to:

1. Demonstrate how human performance at work can be optimised with due consideration of the related ergonomics principles, work and human characteristics.
2. Identify the possible risk factors associated with work-related musculoskeletal disorders.
3. Critically evaluate the existing literature, guidelines and standards related to work-related musculoskeletal disorders.
4. Apply the ergonomics principles in workplace of different settings.
5. Synthesise, integrate and apply proper approaches in workplace analysis, ergonomic intervention and evaluation.
6. Plan an effective functional capacity evaluation and work rehabilitation program based on ergonomics principles.
Syllabus:

1. Human characteristics and humans at work
   - Work physiology
   - Anthropometry
   - Occupational biomechanics
   - Human psychology
   - Physical environment of work

2. Work-related musculoskeletal disorders
   - Risk factors for work-related musculoskeletal disorders
   - Cumulative trauma disorders in industry
   - Manual material handling and low back disorders

3. Work systems analysis
   - Ergonomics principles at work
   - Work analysis
   - Methods of measurement and investigation

4. Ergonomics intervention and evaluation
   - Intervention approaches and strategies
   - Evaluation of intervention

5. Functional capacities evaluation and work rehabilitation
   - Approaches in functional capacities evaluation

Reading List:


Bruce BP (1997), Musculoskeletal disorders and workplace factors, DHHS (NIOSH) publication No. 97-141, USA.


# SUBJECT DESCRIPTION FORM

**Subject Title:** Pain Management: A Multidimensional Approach  
**Subject Code:** RS553

**Credit value:** 3

**Responsible Staff & Department:** Dr. Gladys Cheing (RS)

**Pre-requisite:** Nil

**Recommended Background Knowledge:**
An undergraduate degree from a relevant health discipline

**Exclusions:** Nil

**Learning Approach:**

<table>
<thead>
<tr>
<th>Contact Hours:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>30 hours</td>
</tr>
<tr>
<td>Tutorial/Discussion</td>
<td>12 hours</td>
</tr>
<tr>
<td>Sub-total:</td>
<td>42 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Study Hours:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Self study/reading</td>
<td>10 hours</td>
</tr>
<tr>
<td>Preparation of Seminar</td>
<td>10 hours</td>
</tr>
<tr>
<td>Assignment</td>
<td>15 hours</td>
</tr>
</tbody>
</table>

**Assessment:**

<table>
<thead>
<tr>
<th>Written Assignment</th>
<th>60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation</td>
<td>40%</td>
</tr>
</tbody>
</table>

**Objectives:**

This course will emphasize the complex, multidimensional nature of pain and its management within a multidisciplinary framework.

Upon completion of this course, the student will be able to:

1. Understand the current theories of the anatomical, physiological and psychological basis of pain & pain relief.
2. Recognize how age, gender, family, culture, and the environment contribute to the pain experience and must be utilized in the assessment and management of pain.
3. Recognize the differences between acute and chronic pain and their implications for the assessment and management of pain.
5. Recognize the updated interventions for common pain conditions.
6. Be familiar with the roles and responsibilities of other health care professionals in pain management.
7. Use a person-centered perspective to formulate collaborative intervention strategies consistent with a multidisciplinary perspective.
Syallbus:

1. Pain as a multidimensional experience
2. The epidemiology of pain as a public health problem
3. Barriers to pain assessment and management
4. Nature of pain:
   - Physiological and basis of pain
   - Distinction among acute, recurrent, and chronic pains
   - Psychological and behavioral components of pain experience: relationship to acute or chronic pain
5. Environmental components of pain experience:
   - Family and social influences
   - Ethnic, gender and cultural considerations
6. Assessment and measurement of pain
7. Management of pain and prevention of negative consequences of pain
8. Pain across the life span
   - Pain in infancy, childhood, and adolescence
   - Pain in the elderly
9. Common pain problems (definition, prevalence, clinical features, possible interventions)
10. The role of Traditional Chinese Medicine in Pain Control

Reading List:


SUBJECT DESCRIPTION FORM

Subject title: Physical Rehabilitation for the Elderly

Subject Code: RS570

Credit value: 3

Responsible staff and department: Dr Margaret Mak (RS)
Dr William Tsang (RS)

Pre-requisites:
Students should possess a professional qualification in related disciplines and one year of working experience in the management of elderly.

Recommended background knowledge:
Foundation knowledge in geriatrics and gerontology as equivalent to undergraduate level

Mutual exclusions: Nil

Learning approaches:

Contact hours
- Lectures 14 hours
- Seminars/Tutorials 20 hours
- Practical/Labs 8 hours
Sub-total: 42 hours

Assessment:

Written assignment (2000 words, excluding references) 50%
Seminar presentation 40%
Active participation 10%

Objectives:

On completion of the module, the student will be able to:

1. Understand the common physical problems encountered by the older population.
2. Deepen the knowledge on general management of the physical problems and its implications for rehabilitation.
3. Update the contemporary approaches in assessment, evaluation and therapeutic procedures in geriatric rehabilitation.
4. Critically review current research in physical rehabilitation of older population.
5. Explore future development in the physical rehabilitation of older population.
Syllabus:

1. Common physical problems encountered by the older population and the general management of the conditions:
   - Pathology and pathophysiology of common orthopaedic, neurological and cardiopulmonary disorders
   - Medical, surgical and pharmacological management
   - Diagnostic procedures and interpretation of results
2. Current issues on assessment, measurement and recording of impairment, disability and handicap levels as a result of physical dysfunctions.
3. Life-course holistic management and rehabilitation of older population
4. Methods to monitor/evaluate the effectiveness of the physical rehabilitation.
5. Directions for development of geriatric rehabilitation with respect to:
   - Preventive measures
   - Rehabilitation programs
   - Community resources

Indicative reading and references:


And relevant articles from professional journals
# SUBJECT DESCRIPTION FORM

<table>
<thead>
<tr>
<th><strong>Subject Title:</strong></th>
<th>Community-based Psychosocial Rehabilitation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject Code:</strong></td>
<td>RS573</td>
</tr>
</tbody>
</table>

| **Credit value:** | 3                                           |

| **Responsible Staff & Department:** | Dr Hector TSANG (RS) |

| **Pre-requisite:** | Nil                                        |

| **Exclusion:** | Nil                                        |

## Learning Approach:
This subject intends to adopt an interactive approach. Students are required to be self-motivated and actively involved in the learning process. The subject’s objectives will be achieved through:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>12 hrs</td>
</tr>
<tr>
<td>Tutorials</td>
<td>10 hrs</td>
</tr>
<tr>
<td>Seminar</td>
<td>10 hrs</td>
</tr>
<tr>
<td>Independent study hours</td>
<td>10 hrs</td>
</tr>
</tbody>
</table>

## Assessment:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report on service needs assessment (1000 words)</td>
<td>20%</td>
</tr>
<tr>
<td>Seminar presentation &amp; two pages summary</td>
<td>30%</td>
</tr>
<tr>
<td>Essay</td>
<td>50%</td>
</tr>
</tbody>
</table>

## Objectives:
At the end of this subject, students will be able to:

1. Critically examine current concepts and approaches to community-based psychosocial practice
2. Identify rationale, principles and methodologies in need analysis and service planning of community-based psychosocial rehabilitation
3. Apply contemporary management theories and techniques in service delivery of community-based psychosocial practice
4. Understand current status and identify future developments of community-based rehabilitation as applied to general psychiatry, psychogeriatrics and forensic psychiatry in Hong Kong
5. Address quality assurance and service evaluation issues in community-based psychosocial practice
6. Identify research opportunities in community-based psychosocial rehabilitation in Hong Kong

## Syllabus:

1. Overview of psychosocial rehabilitation in the community
   - historical development
   - transition from biomedical approach to integrated psychosocial rehabilitation model of service delivery
   - conceptual frameworks (e.g., vulnerability-stress-competence model)
   - principles of community-based psychosocial rehabilitation
2. Need analysis and service planning in community-based psychosocial rehabilitation
   - rationale and principles
   - methodologies
   - application of findings to service planning

3. Management of community-based practice
   - strategic management
   - total quality management
   - consumer-oriented service delivery
   - human resources management
   - team work
   - application of power mapping for understanding of multidisciplinary environments

4. Current practice and development of community-based psychosocial practice
   - case management
   - assertive community treatment
   - IPS model of supported employment
   - skills training

5. Applications of the content abovementioned to the Hong Kong scenario
   - General psychiatry
   - Psycho-geriatrics
   - Forensic psychiatry

6. Issues of quality assurance and service evaluation in community-based psychosocial rehabilitation
   - principles and concepts
   - tools and methodologies
   - integration with service planning and delivery

7. Research opportunities
   - potential areas for research
   - research designs and methodologies for community-based psychosocial rehabilitation

---

**Reading list**


SUBJECT DESCRIPTION FORM

Subject Title: Working with People with Dementia
Subject Code: RS574

Credit Value: 3
Date of Submission: March 2002

Responsible Staff & Department: Dr Jenny Chung (RS)

Pre-requisites: Nil

Recommended Background Knowledge:
Basic knowledge in geriatrics and psychogeriatrics
Working experience of older people with cognitive impairments

Exclusions: Nil

Learning Approach:
Contact hours
- Lectures 18 hrs
- Seminars/Practicum 24 hrs
Sub-total: 42 hours

Independent study hours
- Self-study 50 hrs
- Assignment preparation 20 hrs
- Presentation preparation 20 hrs

Contact Hours: 7-hours weekly (3-hour weekday evenings & 4-hour Saturdays) for 6 weeks (One semester)

Assessment:
Course work (100%)
- Seminar Presentation 60%
- Written Assignment 40%

Objectives:
On satisfactory completion of this module students should be able to:
1. Discuss dementia from both a biomedical and a psychosocial perspective
2. Understand the causes and presentations of Behavioural and Psychological Symptoms of Dementia (BPSD).
3. Appreciate the use of non-pharmacological management strategies for BPSD
4. Discuss the values of occupation/engagement for people with dementia.
5. Apply the knowledge in designing therapeutic activities and interventions to promote the state of wellbeing of people with dementia.
Syllabus:

Understanding of dementia
1. An overview of clinical diagnosis of dementia
2. An overview of psychosocial perspectives in the understanding of dementia
   - Kitwood’s dialectical model of dementia
   - Malignant Social Psychology (MSP) in dementia care

Understanding and management of Behavioural and Psychological Symptoms of Dementia (BPSD)
1. Clinical presentations and causes of BPSD
2. Non-pharmacological management of BPSD
   - Environmental interventions
   - Behavioural interventions
   - Sensory-based interventions

Promoting wellbeing of people with dementia through occupation/therapeutic activities
1. Occupational needs, cognitive and occupational capacities of people at different stages of dementia
2. Principles of designing therapeutic activities to match with abilities of people with dementia
3. Documenting clinical effectiveness of therapeutic programs

Reading list


SUBJECT DESCRIPTION FORM

Subject Title: Advanced Statistical Methods for Health and Social Research

Subject Code: RS575

Credit Value: 3

Date of Submission: Nov 2002

Originating Staff & Department:

Dr Andrew Siu (RS)

Pre-requisites: Completion of RS 517 'Research Methods and Data Analysis' or a basic course in research design and data analysis at graduate level as approved by the subject lecturer.

Recommended Background Knowledge: This is a course of more advanced statistical methods, designed for graduate students of health and social sciences. It is essential that students have introductory knowledge on research design and data analysis. The course emphasizes on the conceptual understanding and application of statistical methods, and mathematical content is kept to a minimum throughout the course.

Exclusions: Nil

Learning Approach:

Contact hours
Lectures 14 hrs
Tutorials/Practical 28 hrs
Sub-total: 42 hours

Independent study hours
Self-study 50 hrs
Assignment preparation 20 hrs
Presentation preparation 20 hrs

Assessment:
Course work (100%)

Written Assignment 30 %
Data Analysis Reports 30 %
Quiz 40 %

Objectives:

On satisfactory completion of this module students should be able to:

1. Discuss the role of statistics in health and social research.
2. Describe the key approaches to statistical analysis.
3. Describe the key principles and procedures of statistical modelling.
4. Conduct power analysis and determine appropriate sizes for research projects.
5. Apply advanced statistical methods in analysis of experimental and observational research designs commonly used in health and social research.
6. Discuss and address common methodological and statistical issues in data analysis.
7. Present data analysis effectively in research reports or publications.

**Syllabus:**

**Basis of Statistical Reasoning**
1. Role of statistics in science.
2. Approaches to statistical analysis: hypothesis testing, estimation, likelihood, Bayesian approach.

**Sampling and Power Analysis**
1. Survey sampling methods.
2. Power, effect size, and sample size determination for experimental designs.

**Advanced Statistical Methods**
1. Analysis of variance and General Linear Models (GLM).
2. Principal component and factor analysis.
3. Regression analysis, path analysis and Structural Equations Modeling (SEM).
5. Interdependence methods: cluster analysis, multi-dimensional scaling.
6. Longitudinal data analysis.
7. Multi-way frequency analysis.
8. Emerging techniques in multivariate analysis.

**Reading list**


SUBJECT DESCRIPTION FORM

Subject title: Theory and Practice of Sports Physiotherapy
(Previous title: RS513 Sports Physiotherapy I)  Subject Code: RS580

Credit value: 3

Responsible Staff & Department: Dr Simon Yeung (RS)

Pre-requisites: Nil

Recommended Background Knowledge:
Knowledge in anatomy, physiology, pathology and exercise therapy equivalent to the level of a recognised physiotherapy undergraduate programme; and clinical experience in physiotherapy management in orthopaedics and traumatology.

Exclusions:
This subject is not available to students who do not hold a recognized physiotherapy professional qualification.

Learning Approach:
Contact hours:
- Lecture 21 hours
- Tutorials/Laboratory 9 hours
- Seminar 6 hours
- Practical 6 hours
Sub-total: 42 hours

Independent study hours:
- Seminar preparation 20 hours
- Assignment and report 40 hours
- Reading/Self-study 40 hours
Sub-total: 100 hours

Assessment (types & weighting):
Coursework (100%)
- Seminar presentation 35%
- Written assignment 35%
- Practical test 30%

Aim:
This subject aims to provide students the current knowledge in the prevention, assessment, treatment and rehabilitation of sports injuries.
Objectives:

Upon satisfactory completion of this subject, the students will be able to:
1. critically analyze the causes and mechanism of sports-related injuries
2. identify the modifiable risk factors and effectively plan the intervention strategies
3. critically evaluate the effectiveness of the intervention strategies
4. apply principles of sports injury prevention and acute care of injured athlete
5. apply the latest trends in the treatment and rehabilitation of sports injuries

Syllabus:

1. Principles of Sports Injury
   - Epidemiology of sports injuries – international and local scenario
   - Risk factors associated with sports injuries
   - Evidence based evaluation of prevention strategies in injury prevention
   - Healing process of soft tissue injuries

   - Pre-season fitness testing and equipment screening.
   - Use of sports equipment and protective devices
   - Principles of sports taping
   - Sports injury assessment
   - Emergency care of injured athlete and on-field physiotherapy coverage
   - Principles of acute phase management

3. Rehabilitation of sports injuries
   - Treatment and rehabilitation rationale including conservative and surgical approaches
   - Applied sports psychology
   - Sports taping in rehabilitation
   - Soft tissue release and stretching
   - Functional sports specific rehabilitation
   - Sports specific assessment and specific tests
   - Principles of safe return to competition

Reading List:

Any relevant texts on Sports Medicine and Sports Physiotherapy.

The following texts are also recommended for the course:


Relevant texts and articles from relevant sources.
Subject Title: Clinical Biomechanics and Anatomy: Applications in Musculoskeletal Rehabilitation

Subject Code: RS582

Credit value: 3

Responsible Staff and Department:

Pre-requisites: Nil

Recommended background knowledge:

Basic knowledge of biomechanics and anatomy equivalent to the level of a recognised Bachelor degree in physiotherapy, occupational therapy or a health science discipline.

Exclusions: Nil

Computer requirement:

The subject will be delivered in the world wide web (WWW). All students enrolled in this subject must have access to the WWW and basic skills of using an internet browser.

Learning approaches:

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web-based Lectures</td>
<td>10</td>
</tr>
<tr>
<td>Directed Studies in the WWW</td>
<td>24</td>
</tr>
<tr>
<td>Web-based Tutorials</td>
<td>8</td>
</tr>
<tr>
<td><strong>Subtotal:</strong></td>
<td><strong>42</strong></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Independent Study Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Study</td>
<td>30</td>
</tr>
<tr>
<td>Project Work</td>
<td>70</td>
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<tr>
<td><strong>Subtotal:</strong></td>
<td><strong>100</strong></td>
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</table>

Assessments:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Project</td>
<td>70%</td>
</tr>
</tbody>
</table>

Objectives:

On satisfactory completion of this subject, students should be able to:

1. demonstrate an understanding of the biomechanical and anatomical principles of musculoskeletal rehabilitation,
2. provide solutions to clinical problems using sound biomechanical and anatomical principles,
3. adopt a scientific approach to clinical management of musculoskeletal problems
Keyword syllabus:

Biomechanical Principles of Musculoskeletal Rehabilitation
Clinical Anatomy - Issues Relevant to Musculoskeletal Rehabilitation
Clinical Assessment - Analysis and Management of Data
Injuries of Soft Connective Tissues
Muscular Injuries
Injuries of Bones and Joints
Rehabilitation of the Lower Limbs
Rehabilitation of the Upper Limbs
Rehabilitation of the Spine
Manual Therapy

Reading List and References:

Textbook:

References:


Additional reference materials and learning resources will be provided in the web page of this subject.
SUBJECT DESCRIPTION FORM

Subject title: Complementary and Alternative Therapies

Subject Code: RS587

Credit value: 3

Responsible staff & department: Dr Hector W.H. Tsang (RS)

Pre-requisites: Nil

Recommended background knowledge: Nil

Mutual exclusions: Nil

Learning approach:

Contact hours:
- Lecture: 15 hours
- Tutorials: 12 hours
- Practicals: 9 hours
- Self-directed study: 6 hours
Subtotal: 42 hours

Assessment:

Coursework (100%)
- Presentation: 40%
- Written assignment: 60%

Objectives:

On completion of the module, the student will be able to:
1. understand the nature of psychosocial stress and its implications for working with people with disabilities
2. understand the background and theories of complimentary and alternative therapies
3. understand the concepts and master basic skills on selected complimentary and alternative therapies
4. realize possible applications to people with physical and psychiatric disabilities
5. critically review complimentary and alternative therapies from a scientific and research point of view

Keyword syllabus: (Indicative Content)

1. Review of psychosocial stress and its management
2. Background and theories of complimentary and alternative therapies
3. Concepts and techniques of
   - Qigong and Tai Chi
   - transcendental meditation
   - yoga
   - massage and aromatherapy
• creative relaxation
4. Applications to rehabilitation
5. Critical reviews

Indicative reading list and references:


SUBJECT DESCRIPTION FORM

Subject title: Theories and Practice of Counseling for Rehabilitation and Health Professionals
Subject Code: RS588

Credit value: 3

Responsible staff and department:
Dr Andrew M.H. Siu (RS)

Pre-requisites: Nil

Recommended background knowledge: Nil

Mutual exclusions: Nil

Learning approaches:

Contact hours:
- Lecture: 18 hours
- Practical: 12 hours
- Tutorial: 6 hours
- Seminars: 6 hours
Total: 42 hours

Small group teaching will be conducted using interactive lecture and practice formats. Role playing and practice sessions will be conducted to facilitate learning of various counselling techniques.

Assessment:

- Written assignment (Case Study): 30%
- Quiz: 30%
- Audio or video tape of counseling session: 40%

Objectives:

The overall aim of this subject is to provide a critical review of major theories and practices of contemporary therapeutic systems and their treatment effectiveness with intent to help students appreciate evidence-based practice and based upon which to consolidate their personal style of counselling.

Upon satisfactory completion of this subject, students should be able to:

1. Appraise and critique theoretical constructs and relevance of various counselling theories to the practice of counselling with people with chronic illness and disabilities;
2. Establish evidence-based practice through a synthesis of research findings on the effectiveness of counselling and psychotherapy in treating persons with chronic illness and disabilities;
3. Consolidate one’s own counselling style in view of personal values and belief;
4. Master counselling skills and techniques of major theories and practices; and
5. Practice with adherence to ethical principles.
Keyword syllabus:

Counselling Theories
- Psychodynamic & Adlerian
- Behavioural: Behaviour Therapy, Cognitive-behavioural Therapy, Rational Emotive Therapy, Reality Therapy.
- Humanistic: Person-centred Therapy, Gestalt Therapy
- Family: Family systems therapy, Satir Model

Counseling Practice
- Counselling for persons with chronic illness, physical disabilities, psychiatric disabilities, developmental disabilities.
- Career counseling
- Family counseling
- Sexual counseling
- Chinese culture and counseling practice
- Ethical issues in counselling practice
- Evidence-based practice in counselling

Counselling Techniques
- Basic counseling skills (active listening, interviewing, action planning, challenging, handling resistance)
- Cognitive restructuring and confrontation
- Motivational counselling, Influencing skills
- Handling grief and loss

Textbook


References


曾文星 編著《文化與心理治療》，香港：中文大學出版社。

黃惠惠《助人歷程與技巧》增訂版，台北：張老師文化，1998 年。
## Subject Title:
Socio-Political Context of Education and Rehabilitation for People with Disability

## Subject Code:
RS589

## Credit Value:
3

## Responsible Staff & Departments:
Dr Matthew Yau (RS)

## Pre-requisites:
Nil

## Recommended Background Knowledge:
At least one year experience in working with people with developmental disabilities prior to applying for this subject.

## Exclusions:
RS536 Rehabilitation for People with Developmental Disabilities - Social & Political Context

## Learning Approach:

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturer</td>
<td>12 hours</td>
</tr>
<tr>
<td>Seminar/tutorial</td>
<td>30 hours</td>
</tr>
<tr>
<td>Sub-total:</td>
<td>42 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Study Hours</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Study</td>
<td>40 hours</td>
</tr>
<tr>
<td>Tutorials/Seminars prep</td>
<td>30 hours</td>
</tr>
<tr>
<td>Essay</td>
<td>30 hours</td>
</tr>
<tr>
<td>Sub-total:</td>
<td>100 hours</td>
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## Assessment (types & weighting):

<table>
<thead>
<tr>
<th>Coursework (100%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Written assignment</td>
<td>70%</td>
</tr>
<tr>
<td>Group seminar presentation</td>
<td>30%</td>
</tr>
</tbody>
</table>

## Objectives:

On completion of the subject the students should be able to:
1. identify the prevailing societal attitude towards people with developmental disabilities in Hong Kong
2. analyse the factors which contribute to the prevailing societal attitude towards people with developmental disabilities
3. evaluate the barriers to education and rehabilitation of people with developmental disabilities
4. critically examine legal issues related to the rights of people with developmental disabilities
5. describe the international and local developments of the education and rehabilitation policy and services for people with developmental disabilities
6. critically analyse local policies in education and rehabilitation of people with developmental disabilities
7. evaluate the effectiveness of local services for people with developmental disabilities
Syllabus:

1. Concepts of Disabilities and Developmental Disabilities
2. Social Attitudes towards people with Developmental Disabilities in Hong Kong
   - sociological and cultural factors
3. People with developmental disabilities and the family
   - relationship between people with developmental disabilities and the family
   - strategies in working with family: needs assessment, support group, empowerment and family education and counselling
4. Legislation for people with developmental disabilities
   - citizen rights and right of people with developmental disabilities
   - criminal responsibility and issues related to marriage and sex
5. Education and rehabilitation policies and services for people with Developmental Disabilities in Hong Kong
   - concepts of habilitation and rehabilitation
   - barriers to education and rehabilitation of people with developmental disabilities
   - developments in education and rehabilitation services internationally and locally
   - emerging patterns of education and services for people with developmental disabilities
   - policy analysis and evaluation of services
   - empowerment and advocacy for people with developmental disabilities
   - the missing link: sexuality, intimacy and community integration

Reading List:
**SUBJECT DESCRIPTION FORM**

<table>
<thead>
<tr>
<th><strong>Subject title:</strong></th>
<th>Sensory and Motor Intervention for People with Developmental Disabilities</th>
<th><strong>Subject Code:</strong> RS593</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Credit value:</strong></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Responsible staff &amp; department:</strong></td>
<td>Dr Dora Poon (RS)</td>
<td></td>
</tr>
<tr>
<td><strong>Pre-requisites:</strong></td>
<td>Nil</td>
<td></td>
</tr>
</tbody>
</table>

**Recommended background knowledge:**

At least one year experience in working with people with developmental disabilities prior to applying for this subject.

**Exclusions:** RS516 Management of Sensorimotor Problems of People with Developmental Disabilities

**Learning approach:**

Contact Hours:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>12</td>
</tr>
<tr>
<td>Seminar/tutorial</td>
<td>18</td>
</tr>
<tr>
<td>Practical</td>
<td>12</td>
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<td><strong>Sub-total:</strong></td>
<td><strong>42</strong></td>
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Independent Study Hours:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar presentation</td>
<td>20</td>
</tr>
<tr>
<td>Assignments and reports</td>
<td>40</td>
</tr>
<tr>
<td>Reading/ self-study</td>
<td>45</td>
</tr>
<tr>
<td><strong>Sub-total:</strong></td>
<td><strong>105</strong></td>
</tr>
</tbody>
</table>

**Assessment (types & weighting):**

Portfolio Assessment

A student-centred assessment: students will develop and justify their own assessment portfolio based on fulfilling the subject objectives. Lecturers will initially work very closely with students to clarify the objectives and expectations of the subject. Types of items that could be included in their portfolio include: a case study, critical review of an article, test critique, written assignment, oral presentation, web page, reflective journals etc.

**Objectives:**

The overall aim of this subject is to provide the student with the opportunity to integrate scientific knowledge and research evidence into their clinical practice. The focus will be on understanding theoretical frameworks and perspectives in relation to research and clinical practice, to encourage hypothesis testing in the clinical setting and to critically analyse the relevant literature. The theme is ‘using scientific evidence to improve clinical practice’.

Upon satisfactory completion of this subject, student will be able to:
1. Interpret theories of sensori-motor development, learning and control in relation to the development of children and adults with developmental disabilities and demonstrate an understanding of the research methodologies.
2. Integrate knowledge of standardized measures of development, their purpose, and psychometric properties to select, implement and interpret an appropriate measure for specific populations, settings and objectives.
3. Design, implement and evaluate relevant, evidence-based programs to enhance or maintain infant and child’s sensory and motor performance.
4. Extract, critically analyse and apply information from relevant research articles in this subject area.
5. Apply select technologies eg gait analysis, splinting, special seating, adaptive equipment devices to people with developmental disabilities.

Keyword syllabus:

1. Evidence-based approach to the following:
2. Theories of motor development, motor learning, skill acquisition, motor control and sensory integration.
4. Critically review and administer standardized instruments.
5. Management of special populations such as musculoskeletal, neurological, and developmental disabilities.
6. Advances in technology and adaptive equipment.
7. Discussion of select research articles throughout.

Indicative reading list and references:


Bethesda, Md.: American Occupational Therapy Association, Chapter 14: Critiquing Assessment by J M Polgar


Select reference articles.
SUBJECT DESCRIPTION FORM

Subject Title: Recent advances in rehabilitation for people with developmental disabilities

Subject Code: RS594

Credit Value: 3

Responsible Staff & Department: Dr Karen Liu (RS)

Pre-requisite: Nil

Recommended background knowledge:
At least one year experience in working with people with developmental disabilities prior to applying for this subject.

Exclusion: Nil

Learning Approach:
Interactive including forums and on-line teaching and learning

Contact Hours:
- Lecture: 12 hours
- Seminar/tutorial: 30 hours
Sub-total: 42 hours

Independent Study Hours:
- Reading: 50 hours
- Preparation for written assignment: 30 hours
- Preparation of case discussion, seminar: 30 hours
Sub-total: 110 hours

Assessment:

Portfolio Assessment

A student-centred assessment: students will develop and justify their own assessment portfolio based on fulfilling the subject objectives. Lecturers will initially work very closely with students to clarify the objectives and expectations of the subject. Types of items that could be included in their portfolio include: a case study, critical review of an article, test critique, written assignment, web page, reflective journals etc.

A written report and an oral presentation will be developed based on this work.

Coursework (100%)
- Report: 70%
- Oral presentation: 30%

Objectives:
The overall aim of this subject is to provide the student with the opportunity to integrate scientific knowledge and research evidence into their clinical practice. The focus will be on understanding theoretical frameworks and perspectives in relation to research and clinical practice, to encourage hypothesis testing in the clinical setting, to critically analyse the relevant literature and to put evidence based information into clinical practice. The theme is ‘using scientific evidence to improve clinical practice’.

On completion of the module, the student will be able to:

1. Interpret various theories of development, learning and meta-cognition in relation to rehabilitation management of people with developmental disabilities;
2. Demonstrate an understanding of the research methodologies in developmental disabilities rehabilitation;
3. Integrate knowledge of standardized measures of function, their purpose, and psychometric properties to select, implement and interpret an appropriate measure for specific client groups, populations, settings and objectives;
4. Design, implement and evaluate relevant, evidence-based programs to enhance or maintain function;
5. Extract, critically analyse and apply information from relevant research articles in this subject area; and
6. Apply select treatment and/or technologies to developmental disabilities rehabilitation

Syllabus:

Evidence-based approach to the following:
1. Theories of development, learning and meta-cognition.
2. Current development in developmental disabilities rehabilitation, e.g. IT training, multimedia-assisted handwriting training, TEACCH, multi-sensory stimulation, therapeutic listening, social story.
3. Critically review and administer standardized instruments.
4. Rehabilitation management of populations such as specific learning difficulties, autism, developmental coordination disorder, attention deficit hyperactivity disorder, and intellectual disability.
5. Sexuality and relationships in adults with intellectual disabilities.
6. Pre-vocational and vocational training.
7. Advances in technology and adaptive equipment.
Discussion of selected research articles throughout.

Reading list:


**SUBJECT DESCRIPTION FORM**

| **Subject Title:** | Contemporary Physiotherapeutic Approaches in Neurological Rehabilitation  
(Previous: RS525 Contemporary Physiotherapeutic Approaches in the Management of Adult Neurological Disorders) |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Subject Code:</strong></td>
<td>RS597</td>
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</table>

| **Credit Value:** | 3 |
| **Date of submission:** | Apr 07 |

| **Responsible Staff & Department:** | Dr Marco Pang (RS)  
Dr Stephanie Au Yeung (RS)  
Dr Margaret Mak (RS)  
Dr Shamay Ng (RS) |

| **Pre-requisites:** | Nil |

| **Recommended Background Knowledge:** | One year of clinical experience in physiotherapy management of neurological patient. |

| **Exclusions:** | This subject is not available to students who do not hold a recognised Physiotherapy professional qualification. |

| **Learning Approach:** |

<table>
<thead>
<tr>
<th>Contact Hours:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
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<tr>
<td>Seminars/tutorials/practicals</td>
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</table>

Sub-total: 42 hours

<table>
<thead>
<tr>
<th>Independent Study Hours:</th>
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</thead>
<tbody>
<tr>
<td>Self-study</td>
</tr>
<tr>
<td>Preparation for seminars</td>
</tr>
<tr>
<td>Preparation for case study presentation</td>
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<tr>
<td>Assignment</td>
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</table>

Sub-total: 100 hours

| **Assessment (types & weighting):** |

<table>
<thead>
<tr>
<th>Course Work (100%)</th>
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<tbody>
<tr>
<td>Written assignment (2000 words, excluding references)</td>
</tr>
<tr>
<td>Case study presentation</td>
</tr>
<tr>
<td>Active participation</td>
</tr>
</tbody>
</table>
Objectives:

On completion of the subject, the student will be able to:
1. Describe motor control theories and motor learning principles as well as their clinical applications.
2. Discuss the relevance of neural plasticity in rehabilitation for patients with neurological dysfunctions.
3. Describe the neurophysiological mechanisms underlying movement disorders in neurological pathologies.
4. Discuss how the nervous system controls gait and balance.
5. Discuss the current evidence for different physiotherapy treatment methods of dysfunctions in balance, gait, upper extremity function, cardiopulmonary problems, and musculoskeletal problems for individuals with brain injury.
6. Discuss the current evidence for physiotherapy management of Parkinson’s disease.
7. Discuss the psychosocial issues, quality of life, community reintegration and related factors in the neurological population.
8. Explain the role of the physiotherapist in community rehabilitation and primary health care for the neurological population.
9. Describe the evidence for innovative treatment in neurorehabilitation.
10. Critically review current research in the physiotherapy management of neurological conditions.
11. Identify the common outcome measures used in neurorehabilitation.
12. Apply the related theoretical and scientific knowledge in clinical setting.

Syllabus:

1. Motor control theories and clinical applications.
3. Neural plasticity and rehabilitation.
4. Update on the theory and evidence-based treatment approaches in neurological rehabilitation.
5. Dysfunctions of the other major body systems after neurological insult and their evidence-based management.
6. Issues related to psychosocial function, quality of life and community reintegration in the neurological population.
7. Evidence-based innovative treatment in neurorehabilitation.
8. Health promotion and disease prevention, community rehabilitation for the neurological population.

Reading list


SUBJECT DESCRIPTION FORMS

SCHOOL OF NURSING
**SUBJECT DESCRIPTION FORM**

<table>
<thead>
<tr>
<th>Subject Title:</th>
<th>Consultation in Health Care</th>
<th>Subject Code: SN503</th>
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</thead>
<tbody>
<tr>
<td>Credit Value:</td>
<td>3</td>
<td>Date of Submission: Oct 98</td>
</tr>
<tr>
<td></td>
<td></td>
<td>revised: May 2003</td>
</tr>
<tr>
<td>Responsible Staff &amp; Department:</td>
<td>Prof. Thomas K.S. Wong (FHSS)</td>
<td>Prof. Joanne Chung (SN)</td>
</tr>
<tr>
<td>Pre-requisites:</td>
<td>Nil</td>
<td>Recommended Background Knowledge:</td>
</tr>
<tr>
<td>Exclusions:</td>
<td>Nil</td>
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<tr>
<td>Learning Approach:</td>
<td>Contact hours:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lectures</td>
<td>21 hours</td>
</tr>
<tr>
<td></td>
<td>Case Study Presentation</td>
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<tr>
<td></td>
<td>Seminars</td>
<td>7 hours</td>
</tr>
<tr>
<td></td>
<td>Sub-total: 42 hours</td>
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<tr>
<td></td>
<td>Independent study hours:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-study</td>
<td>40 hours</td>
</tr>
<tr>
<td></td>
<td>Course work (seminar preparation / assignments)</td>
<td>60 hours</td>
</tr>
<tr>
<td></td>
<td>Sub-total: 100 hours</td>
<td></td>
</tr>
<tr>
<td>Assessment (types &amp; weighting):</td>
<td>Course Work (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Review of a case study</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Case studies on both internal and external consultancy will be given to students for review.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Report on a simulated consultancy project</td>
<td>60%</td>
</tr>
</tbody>
</table>

Students will work in groups of three. They will take turn to assume the role of a consultant, a client and an observer. The client will develop a vignette and initiate the consulting process, the consultant will manage the project and the observer will monitor the process. All parties will participate in the evaluation of the consultancy when disengagement takes place.

**Objectives:**

This subject aims to develop students’ understanding of the process of consultation in health care setting and further nurture their competency in case management. Students will have an opportunity to:

1. Examine different models of consultancy roles.
2. Analyze the consulting process.
3. Contrast internal consultation with external consultation.
4. Explore the role of a consultant as a change agent.
5. Design, implement and evaluate a simulated consultancy project.

Syllabus:

1. Consultant, client and the consulting process
   1.1 Models of consultancy roles
   1.2 Learning typology, expertise and consulting process
   1.3 Intervention styles
   1.4 Consulting skills
2. Internal and external consultation
   2.1 Data collection and analysis
   2.2 Diagnosis and decision making
   2.3 Implementation and management of change
   2.4 Disengagement and continuation
   2.5 Evaluation of the consulting assignment
3. Project management
   3.1 Project planning and proposal writing
   3.2 Contracts and letters of agreement
   3.3 Resource management
   3.4 Critical path
   3.5 Progress monitoring and control
   3.6 Risk management
   3.7 Human factors issues
4. Professionalism, confidentiality and ethical considerations

References:


SUBJECT DESCRIPTION FORM

Subject Title: Health Informatics and Information Systems
(reitled from Health Informatics)  Subject Code: SN5110

Credit Value: 3  Date of Submission: March 92
(Revised Feb 2004, Dec 2005, Apr 2008)

Responsible Staff & Departments: Dr Meyrick Chow (SN)
Dr Eric Tam (HTI)

Pre-requisites: Nil

Recommended Background Knowledge:
Students should have an understanding of computer operation, i.e. they should be able to operate a personal computer or an intelligent terminal of a local area network.

Exclusions: Nil

Learning Approach:

Contact Hours:

- Lectures 14 hours
- Laboratory 14 hours
- Case study / tutorial 12 hours
Total: 40 hours

Independent Study Hours:

- Practice 30 hours
- Reading 30 hours
- Project 40 hours
Total: 100 hours

Assessment:

Continuous Assessment (100%)

Laboratory Report 40%
- Usability study on an application software used in health care

Project 60%
- Functional specification for a small computer application in health care

Learning Outcomes:

Upon completion of the subject, students will be able to:

1. Explain the essential concepts in Health Informatics.
2. Describe the roles of healthcare professionals in the development of health care information systems.
3. Analyze end-user requirements and participate in the design, development and implementation of health care information systems.
4. Evaluate the usability and functionality of computer applications in health care.
5. Apply standards for information infrastructures.
6. Analyze social and organizational issues in system implementation.

Syllabus:

1. Essential concepts in Health Informatics
   - Database management system e.g. medical records.
   - Spreadsheet and financial management e.g. departmental budgeting.
   - Expert system for clinical decision making.
   - Computer assisted instruction e.g. using Hypermedia in health education and rehabilitative programmes.
   - Image and signal processing e.g. electrocardiographic data processing.
   - Information sharing e.g. electronic links for data transfer and laser card for health record.
   - Patient-computer interfacing.
   - Computer-based rehabilitation.

2. The role of a health care professional in the development of a health care information system.

3. System design methods for health care information systems e.g. Structured Systems Analysis and Design Methodology (SSADM), Socio-technical System Design.

4. Human factors in Hospital Information System (HIS).

5. System implementation - social and organizational issues.

Reading List:


SUBJECT DESCRIPTION FORM

Subject Title : School Health Concerns and Promotion
Subject Code: SN517

Credit Value : 3
Date of Submission : May 1997
(revised November, 2005)

Responsible staff & Department : Dr Cynthia Wu (SN)

Pre-requisites : Nil

Exclusions : Nil

Learning Approach :
Contact hours :
Lecture           14 hours
Seminars/tutorial          28 hours
Sub-total : 42 hours

Assessment (types & weighting) :
Course Work (100%)
School health project (40%)
Intervention plan of school health promotion

Project paper (60%)
Effectiveness study of school health intervention

Objectives :
Students will be able to
1. relate concepts and philosophy of school health nursing in promoting health of children
2. delineate contemporary school health problems
3. select appropriate strategies of school health interventions to high risk youth, children with special health care needs and their families.
4. evaluate current school health services and resources.
5. compare local and global school health practices in promoting school health
6. discuss future needs and implications of school nursing development.
7. translate school nursing strategies into primary health care delivery model

Syllabus :
1. School nursing role and function
   1.1 Primary health care of school children
   1.2 School nursing impact on children health
   1.3 Healthy school environment: Standards of care

2. School health issue and concern
   2.1 Basic health and safety needs at school
   2.2 Health risk taking behaviours including problems on diet, sex, smoking, drug and physical activity
   2.3 Health risk aggregates including new immigrants and dysfunctional families
   2.4 Ethical, confidentiality issues and children’s right

3. School nursing intervention
3.1 School health education and promotion strategies among health risk groups
3.2 Multidisciplinary role interaction and collaboration
3.3 Matching level of services and available resources to needs

4. School nursing development
   4.1 Community school health partnership
   4.2 Alternative inquiry into school health practice
   4.3 Implications to school nursing future trends

Reference text:

Reading list:


SUBJECT DESCRIPTION FORM

Subject Title: Quality Management of Nursing Services in Health Care

Subject Code: SN518

Credit Value: 3

Date of Submission: Oct 98

Responsible Staff & Department: Dr Esther Mok (SN)

Pre-requisites: Nil

Recommended Background Knowledge: Nil

Exclusions: Nil

Learning Approach:

Contact hours
Lectures 18 hours
Seminar/Tutorial 24 hours
Sub-total: 42 hours

Independent study hours
Self-study 50 hours
Course works (seminar preparation/assignments) 50 hours
Sub-total: 100 hours

Assessment (types & weighting):

Coursework (100%)

Seminar (40%)
Students are required to prepare and host a class seminar presentation with central focuses on any issues related to health services planning and its impacts on the functions of effective management;

Assignment (60%)
Written assignment on justifying critically the appropriateness usage of different health-related information for different aspects of health services planning and their impacts on nursing management practices. Evaluation of the effectiveness of health services planning with particular application of case management.

Objectives:

Students will have an opportunity to:
1. To discuss critically the impacts of health services planning on the functions of effective management in health care.
2. To appraise the factors influencing the process of health services planning and their impacts on management practices.
3. To develop a knowledge base pertaining to the information utilisation as contributory factors for effective quality management and formulation of health services planning.
4. To evaluate critically the usefulness of various information and indicators for health services planning and the functions of cost-effective management through the different models of analyses.
5. To advance an evidence-based justification on management decisions through the process of health care planning with an appropriate usage of information.

**Syllabus:**

1. The different models and approaches of health services planning; and their implications in health care system with particular focuses on functions of an effective quality management.
2. The evolving concepts of quality management and their way of practices in translating the ideology into a cogent reality in health care services.
3. Problems and constraints encountered with health services planning.
4. Factors enhancing an effectiveness in health services planning.
5. Application of different models of analyses e.g. ‘SWOT’ analyses, etc.
6. Contributory factors for the functions of quality management and its dimensions in continuous quality improvement.
7. Evaluation of the functional values of various information such as clinical, management audits, outcome measures, quality and performance indicators, etc. through the variance analysis in the context of case management and critical paths.
8. Appraise critically the needs and demand of information utilisation as an evidence-based practice in decisions for health services planning and cost-effective management.

**Reading List:**


Hong Kong Hospital Authority. *Annual Plan 1997/98*. HK:Public Affairs Division of Hospital Authority.

Hong Kong Hospital Authority. *Annual Report 1995/96*. HK:Public Affairs Division of Hospital Authority.


Periodicals:

Health Services Management Res.
Hospital and Health Services Administration
International Nursing Review
Nursing Economics
Nursing Forum
Top Health Information Management
SUBJECT DESCRIPTION FORM

Subject Title: Ethics and Law in Clinical Practice
Subject Code: SN5180
Credit Value: 3
Date of Submission: Nov 2007
Originating Staff & Department: Prof. Samantha Pang (SN)

Pre-requisites: Nil
Recommended Background Knowledge: Nil
Exclusion: Nil

Learning Approach:
Contact hours:
 Lecture  14 hours
 Seminar  28 hours
Total : 42 hours

Assessment:
Continuous assessment (100%
 Reflective journal 30%
 Quiz 30%
 Discussion paper 40%

Learning Outcomes:
After completing the subject, the student will be able to:
1. Reflect on the ethical self in the context of professional practice
2. Become acquainted with the principal issues in clinical ethics and law
3. Critically appraise the legal and ethical concerns of health professions
4. Demonstrate the ability to deliberate, analyse, articulate, and critique the ethical and legal arguments in dealing with controversial issues in healthcare
5. Engage in discourse with peers with regard to ethical justifications and legal considerations in resolving clinical quandaries
Syllabus:

1. Sources of ethics and law as applied to clinical practice: biomedical ethics, professional codes, Hong Kong legal system, law of tort, ordinances related to healthcare, law of information protection

2. Analysis of legal and ethical issues in the clinical context
   - Negligence and malpractice
   - Vicarious liability
   - Assault, battery, informed consent
   - Mental incapacitation (MIP), substitute decision making, advance directives
   - Privacy, confidentiality and data protection
   - Distributive justice and resources for health
   - Telehealth
   - Public health
   - Patient documentation and incident report

3. Ethical and legal thinking for making clinical decisions

4. Approaches to resolving clinical quandaries such as issues in relation to genetic testing, reproductive technology, clinical trial, organ transplant and end-of-life care

5. Clinical ethics committee

6. Legal consultation

7. Advocacy and the role of health professions in fostering ethical and legal practice

Indicative Reading List:


Journals:
American Journal of Law and Medicine
Bioethics
Hastings Center Report
Journal of Clinical Ethics
Journal of Medical Ethics
Journal of Law, Medicine & Ethics
Nursing Ethics
SUBJECT DESCRIPTION FORM

Subject title: Care of Older Persons with Cognitive Impairment

Subject Code: SN523

Credit value: 3

Responsible Staff and Department: Dr Claudia K.Y. Lai (SN)

Pre-requisite: Nil

Recommended Background Knowledge:

Preferably students would have taken a course related to the study of older persons.

Exclusions: Nil

Learning Approach:

Contact hours:
- Lectures/Tutorials 12 hours
- Seminars 30 hours
Sub-total : 42 hours

Assessment:

Course Work 100% (Seminar 35 % & Paper 65%)

This module examines various pertinent care issues in the care of older people with cognitive impairment. Cognitive impairment may arise as a result of, for example, infections and traumatic injuries, psychiatric problems such as alcoholism and depression, cardiovascular problems such as stroke, and neurodegenerative disorders such as dementia and Parkinsonism. Professionals from various disciplines need to develop a knowledge base when work with these individuals. Students will be facilitated to look for answers in meeting with various challenges in care. Students are required to lead a seminar that focuses on any policy issue faced by older persons suffering from cognitive impairment (relating to any of the aforementioned health problems), and/or policy issues faced by their caregivers. Any topic in relation to the syllabus may be chosen. The objective of this assignment is to facilitate the student to develop a critical understanding on issues of care for this particular group of client population.

Students are also required to submit a paper that addresses any aspect of clinical care for older persons with cognitive impairment. Students should focus on the clinical aspect of care in their practicum and through working on this paper. In doing so, students are expected to be able to cultivate advanced practice skills in relation to their own area of interest.

Students are encouraged to be creative and self-directed in structuring their individual learning experience. Visiting clinical fields of their particular interest, initiating minor projects, developing tools or techniques that are to be tried out in their own practice environment are some learning activities that students can employ to enrich their learning and mastery of advanced practice skills. The knowledge and experience thus gained could be integrated into their seminar presentations and final written papers, thereby enriching the overall learning experience of all of the students as a group.
Objectives:

Upon completion of this module, student will be able to:
1. develop a knowledge base pertinent to the care of older adults with cognitive impairment, in relation to student’s own area of interest
2. to formulate own conceptual framework in the care of this particular group of client population and their families
3. develop an in-depth understanding of the lived experience of older persons suffering from cognitive impairment, and the lived experience of their caregivers going through the caregiving trajectory
4. critically appraise policy issues faced by this particular group of client population and their families in the local context
5. synthesize evidence-based practice in accordance with the basic premises of primary health care, through critical analysis and application of research

Keyword syllabus:
The Primary Health Care model will form the conceptual framework in the coverage of module contents.
1. The epidemiology of dementia, cognitive impairment and related disorders
2. The unique lived experience of older persons suffering from cognitive impairment, and the lived experience of their caregivers
3. Theoretical and conceptual frameworks in practice development
4. The role of the advance practitioner in interdisciplinary care for older persons with cognitive impairment and their families
5. Partnership in care - empowering individuals and families
6. Nursing management, with particular emphasis on environmental and technological considerations; communication, and agitated behaviors
7. Community resources and intersectoral collaboration in service planning and delivery
8. Policy issues in care, e.g., integration versus segregation in care, service planning and development, equity and resource allocation, advocacy for the cognitively impaired (Policies to be explored and critiqued will be structured in tune with students’ interest.)

Indicative reading list and references:


Some Useful Web Resources

Alzheimer Association (US)  
http://www.alz.org/

Alzheimer Disease International  
http://www.alz.co.uk/

Alzheimer’s Disease Research Update – National Institute on Aging (US)  
http://www.alzheimers.org/nianews/nianews.html

Alzheimer Research Forum (US)  
http://www.alzforum.org/
Alzheimer Scotland - Action on Dementia
http://www.alzscot.org/

Dementia Services Development Centre (UK)
http://www.stir.ac.uk/Departments/HumanSciences/AppSocSci/DS/
International Psychogeriatric Association
http://ipa-online.org
**SUBJECT DESCRIPTION FORM**

<table>
<thead>
<tr>
<th><strong>Subject Title:</strong></th>
<th>Cancer Nursing</th>
<th><strong>Subject Code:</strong></th>
<th>SN527</th>
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<tr>
<td><strong>Credit Value:</strong></td>
<td>3</td>
<td><strong>Date of Submission:</strong></td>
<td>Oct. 99</td>
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<tr>
<td><strong>Responsible Staff &amp; Department:</strong></td>
<td>Dr Esther Mok (SN)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pre-requisites:</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exclusions:</strong></td>
<td>This subject is not available to students who do not hold professional qualifications in nursing.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Learning Approach:**

- **Contact hours :**
  - Lectures/Seminars/Tutorials: 42 hours

- **Independent study hours :**
  - Self-study: 38 hours
  - Assignments: 34 hours
  - Seminar presentation: 28 hours
  - Sub-total: 100 hours

**Assessment (types & weighting):**

- Course Work (100%)
  - Case study: 40%
  - Seminar paper: 60%

**Objectives:**

Students will have an opportunity to:

1. Critically analyse the pertinent concepts related to cancer nursing.
2. Explore the psychosocial responses and needs of patients with cancer.
3. Appraise the impact of cancer on the care of the families/significant others.
4. Critically examine the principles of symptom management, treatment modalities and management of emergency conditions.
5. Develop a critical and constructive approach to the researching of current literature in the areas of cancer nursing.
6. Evaluate the concepts of advanced nursing practice in the care of patients with cancer.
7. Incorporate and appraise concepts of primary health care in cancer nursing.
Syllabus:

1. Cancer as a disease
   1.1 cancer biology
   1.2 epidemiological principles for nursing practice
2. Conceptual themes in cancer nursing
   2.1 ethics and cancer care
   2.2 cancer and the family
   2.3 psychosocial responses and needs
   2.4 stress and coping with cancer
   2.5 grief and bereavement
   2.6 communication and education
   2.7 counselling
   2.8 pain management
3. Concept of primary health care in cancer nursing
   3.1 primary intervention
   3.2 secondary intervention
   3.3 tertiary intervention
4. Nursing principles and management applied in major treatment modalities and symptoms
5. Delivery systems for cancer care
   5.1 rehabilitation
   5.2 ambulatory care
   5.3 home care
   5.4 palliative care and hospice care

Reading List:


Hong Kong Cancer Registry. (1993). Cancer incidence and mortality in Hong Kong. Hong Kong: Hospital Authority.


Ma, L.C., Chan, L.W., Chi, I. And Sham, S.T. (1990). A study of the social support of cancer patients receiving chemotherapy in Hong Kong. Hong Kong: Centre for Hong Kong Studies, Chinese University of Hong Kong.


Periodicals:

Cancer
Cancer Nursing
Journal of Nursing Care
Psycho-social Oncology
Journal of Pain and Symptom Management
Journal of Clinical Oncology
Hong Kong Medical Journal
Hong Kong Practitioner
The Hong Kong Nursing Journal
N.B. Resources on individual clinical nursing specialty to be identified by students.
# Subject Description Form

**Subject Title:** Health Education and Promotion  
**Subject Code:** SN530

**Credit Value:** 3  
**Date of Submission:** July 2002

**Responsible Staff & Department:** Dr Susan CHOW (SN)

**Pre-requisites:** Nil

**Recommended Background Knowledge:** Nil

**Exclusions:** Nil

## Learning Approach

<table>
<thead>
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<th>Contact hours:</th>
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<td>Reading and literature review</td>
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<td>Seminar / project</td>
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## Assessment (type & weighting):

- Continuous assessment 100%

## Aims

To introduce concepts and practice in health, develop critical awareness of health education and health promotion programme(s) within the local context, and increase confidence and competence in health education practice.

## Objectives

At the end of the subject students will be able to:

2. Explore concepts of health and illness and how these relate to health behaviour.
3. Explore the various aims of health education and the philosophical positions.
4. Research health education needs using variety of methods.
5. Consider the ethical issues in health education.
6. Discuss the range of health education and health promotion approaches, their advantages and disadvantages.
7. Evaluate health education efforts using qualitative and quantitative methods.
8. Understand and use health education methods appropriately.
9. Identify the place of health education in own area of practice.
10. Explore the interdisciplinary approach of health education.
Syllabus:

1. Theories of health education, compared and contrasted. Examples: preventive models of health education, education models of health education, social changes models of health education.
2. Definitions of health, health education and health promotion; differences in aims and objectives; WHO definition; local definitions.
3. Sociological theory related to health, illness and disease, locus of control, lay beliefs about health and illness prevention; the Health Belief Model; holistic health.
4. Ideas of professional and lay health education.
5. The philosophy of ethics: the ethics of health education.
6. Research methods related specifically to health education, eg. epidemiological data, surveys, questionnaires, interview techniques: individual group.
7. Evaluation methods in health education; outcome evaluation, eg quantitative data.
8. Exploration of a variety of health education methods, eg mass media approaches, small group work techniques, individual counselling, community development approaches, public policy making, peer evaluation, role modelling.
9. Identifying the contribution made to health education by the range of health and other professionals. Benefits and barriers to interdisciplinary team work in health education.

Reading list:

Useful websites:
http://www.who.int/hpr/ (Health Promotion Department, WHO)
http://www.monash.edu.au/health/ (Monash Health Promotion Unit, Monash University)
http://www.hc-sc.gc.ca/hppb/hpo/index.htm (Health Promotion On-line, Canada)
http://www.hebs.scot.nhs.uk/ (Health Education Board, Scotland)
http://www.hst.org.za/hlink/equity.asp (Health System Trust)

Journal list
Health Education Journal
Health Education Research
Health Promotion International
Journal of community health nursing
Journal of Advanced Nursing
SUBJECT DESCRIPTION FORM

<table>
<thead>
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<th>Subject Title:</th>
<th>Inquiry into Nursing</th>
<th>Subject Code:</th>
<th>SN531</th>
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<td>Jan 97</td>
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<td>Responsible Staff &amp; Department:</td>
<td></td>
<td></td>
<td>Prof. Frances Wong (SN)</td>
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<tr>
<td>Pre-requisites:</td>
<td>Nil</td>
<td></td>
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Exclusions:
This subject is not available to students who do not hold professional qualifications in nursing.

Learning Approach:

<table>
<thead>
<tr>
<th>Contact hours</th>
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<td>Seminar discussions</td>
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<table>
<thead>
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<tr>
<td>Assignment preparation</td>
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Assessment (types & weighting):
Course Work (100%)

There will be two components of the assessment. One is the in-depth study of a selected concept in nursing. The other is the seminar discussion of a range of concepts identified by the class.

- **Concept clarification and validation** 70%
  Students are recommended to adopt a dialogical approach of theory and practice in this piece of work. Each one of the students is required to identify a key concept at their area of expertise. They need to firstly write down their understanding on the concept from their current experience. The citation of specific clinical incident is commended. Then they are required to read up on the literature related to the concept and make modifications on their original views. Students are now required to validate their analysis of the selected concept in a clinical situation, and make modifications of the previous piece of work. Students are required to document their thought process in the format of a journal. Up to now, students have completed one dialogical cycle of the conceptual analysis. At the end of the semester, students are required to at least complete one dialogical cycle. If time allows, students can go through more than one cycle.

- **Seminar** 30%
  Students will take turn to present their work on their analysis of the selected concept. Students are expected to engage in intellectual dialogue and debate. The overall performance will take into account the clarity of the presentation, and the competence of the students to address questions from the peer.
Objectives:
Upon completion of this subject, students will be able to:
1. Critically reflect on the current practice of nursing.
2. Identify salient concepts related to one’s own area of practice and carry out a dialogical analysis on a selected concept integrating theory and practice.
3. Demonstrate perspective change in viewing the discipline and practice of nursing.

Syllabus:
1. Ontological and epistemological considerations of nursing knowledge and its development
   - positivism
   - interaction
   - systems theory
   - feminism
   - hermeneutics and critical theory
2. Major strategies in theory development
   - theory-practice-theory strategy
   - practice-theory strategy
   - research-theory strategy
   - theory-research-theory strategy
   - practice-theory-research-theory strategy
3. The domain of nursing and the shift in paradigm
   - the nursing client
   - the transitional and transactional environment
   - health
   - nursing therapeutics

Reading List:

Advances in Nursing Science
Journal of Advanced Nursing
Nursing Research
Nursing Science Quarterly

- 221 -
<table>
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<th>Subject Title:</th>
<th>Concepts of Advanced Nursing Practice</th>
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<tr>
<td>Credit Value :</td>
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<td>Date of Submission: May 97</td>
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<tr>
<td>Responsible Staff &amp; Department:</td>
<td>Prof. Frances Wong (SN)</td>
<td></td>
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<td>Pre-requisites:</td>
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<td>Recommended Background Knowledge:</td>
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**Exclusions:**

This subject is not available to students who do not hold professional qualifications in nursing.

**Learning Approach:**

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**Assessment (types & weighting):**

**Course Work (100%)**

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<th>Written Papers</th>
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<td>- Select an area of advanced nursing practice utilizing research findings taking into account the development in the international scene and consider its applicability in the local context.</td>
<td>(40%)</td>
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<tr>
<td>- Formulate case specific standards of care in the area of practice, and plan the necessary evaluative strategies.</td>
<td>(60%)</td>
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**Objectives:**

Upon completion of this subject, students will be able to:

1. Identify the role demands and responsibilities of advanced practice based on research findings and the current trend of development in the international scene.
2. Analyse the key concepts in the roles of advanced nursing practice.
3. Employ reflective strategies in examining nursing practice.
4. Critically examine the personal, political and cultural perspectives that influenced and shaped nursing and nursing practice.
5. Formulate standards of care, set the evaluation criteria for the identified area of advanced practice.
Syllabus:

1. Multiple role demands and integration in advanced practice

2. Sources of knowledge for advanced practice
   - theory based nursing practice and experience
   - knowledge transfer and application strategies
   - reflection in nursing practice
   - evaluation and utilization of research findings and relevant policy documents in nursing practice

3. Concepts of advanced practice
   - specialization: evolution, trends and issues
   - multi-cultural perspectives in nursing
   - dimension and boundaries in the scope of practice
   - collaboration and consultation
   - continuous quality improvement in Practice

Indicative Reading List:


Royal College of Nursing (1990). Quality Patient Care: the dynamic standard setting system. London: RCN.


SUBJECT DESCRIPTION FORM

Subject Title: Role Development and Advanced Nursing Practice*  
*with focus on specific client group

Subject Code: SN533

Credit Value: 3  
Date of Submission: Oct 92  
(revised July 96)

Responsible Staff & Department: Prof. Frances Wong (SN)

Pre-requisite: SN532 "Concepts of Advanced Nursing Practice"

Recommended Background Knowledge: Nil

Exclusions:
This subject is not available to students who do not hold professional qualifications in Nursing.

Learning Approach:
This subject adopts the experiential and contractual learning approach in integrating the advanced nurse practitioner’s role with a selected functional role. Students undertake a leader’s position together with the responsible lecturer, will consider the changing system and situational demands, develop their own learning objectives which are consistent with subject objectives. The written contract should address individually defined professional and personal goals, the supporting resources and activities to facilitate the achievement of established objectives, and how the learning experience to be evaluated. Students are free to identify and negotiate with an experienced clinical practitioner whenever an experience of quality learning can be accommodated.

Contact Hours:
- Lectures/Seminars/Tutorials 40 hours
- Integrated clinical practicum 100 hours

Assessment (types & weighting):

Course Work 100%
Generally, the lecturer assumes responsibility for assigning credit marks together with the student. However, it is noted that due to the characteristics of contractual learning, the credit marks may be adjusted according to individual student learning needs.

1. Clinical advisor's report/student self evaluation on practicum 10%
2. Reflective journals, analytical critique 10%
3. Intermediate written report on contract learning 30%
4. Final written report on contract learning (integrated clinical practicum) 50%

Total: 100%
Objectives:

Upon completion of this subject, students, within their chosen clinical practice area, will be able to:

1. define and implement the various functional roles of advanced nursing practice.
2. adapt the various roles to the demands of situational and health care system changes.
3. incorporate and demonstrate leadership and management concepts and skills in the functional roles.
4. adopt, apply and evaluate a nurse practice model appropriate to the clinical role.
5. apply related advanced theoretical nursing knowledge to patient

Reading List:


---

N.B. Resources on individual clinical nursing speciality to be identified by students.
SUBJECT DESCRIPTION FORM

Subject Title : Health Needs of the Community
Subject Code: SN534

Credit Value : 3
Date of Submission: Sept 2002
Revised February 2004

Responsible Staff & Department: Prof. Alice Yuen Loke (SN)

Pre-requisites : Nil

Exclusions : Nil

Learning Approach :

Contact hours:
   Lectures 30 hours
   Seminars / Tutorials 12 hours

Assessment (types & weighting) :
Course work (100%)

Seminar :
   Diagnosing Community Health Needs:
   Identify an aggregate of health concern, and utilize community assessment tools in diagnosing their
   community health needs.

Written Assignment:
   Meeting Community Health Needs:
   Design community programme in meeting the health needs of the defined community.

Objectives :

Students will have an opportunity to:
1. Understand the determinants of health in a community and acknowledge the community as client
2. Identify the needs of a community aggregate of interest based on available statistics and public
   communications.
3. Integrate and utilize selected community assessment tool(s) to identify the health needs of the community.
4. Design programme with appropriate strategies in meeting the health needs of the defined community.
Syllabus:

1. Community as client
   1.1 community characteristics
   1.2 community bonds and dynamics
   1.3 determinants of health
   1.4 characteristics of the aggregates

2. Community assessment:
   2.1 systematic approaches to primary health and community profile
   2.2 use of epidemiology in community assessment
   2.3 community assessment tools

3. Meeting the health needs of community / aggregates
   3.1 strategies in meeting health needs and planning
   3.2 collaboration with multidisciplinary health professionals
   3.3 community resources and services
   3.4 evaluate community efforts in meeting needs

Reading List:


### SUBJECT DESCRIPTION FORM

**Subject Title**: Clinical Pharmacology  
**Subject Code**: SN572

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<th>Nov 2005</th>
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**Responsible staff & Department**  
Dr Warren Tsang (Subject Lecturer)  
Ms Sandra Pun (SN) (Subject Coordinator)

**Pre-requisite**  
baccalaureate degree in nursing or allied health profession

**Co-requisite**  
Nil

#### Teaching Pattern

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<tr>
<th>Lecture</th>
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</thead>
<tbody>
<tr>
<td>Seminar</td>
<td>14 hours</td>
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</tbody>
</table>

#### Assessment (types & weighting)

- **Continuous Assessment**:
  - Seminar Presentation: 30%
  - Seminar Paper: 40%
  - Test: 30%

#### Objectives

- Pharmacology is the science of studying the effect of drugs on living organisms. Drugs can resemble a double-edged sword in that they can both help and harm the patient. It is an integrative discipline for health curricula. This subject builds upon the knowledge and experience of the students in their clinical practice, and relating these to the pharmacological basis of therapeutics and nursing care delivery. It aims to enable students to:

  1. Acquire essential knowledge in principle of pharmacology  
  2. Identify specific nursing implications in drug therapy and application of knowledge in clinical situations and stimulate critical thinking  
  3. Identify contemporary issues in pharmacology globally and in Hong Kong, and role of the nurse in drug research

#### Syllabus

1. Principles of pharmacology: pharmaceutics, pharmacokinetics and pharmacodynamics; adverse reactions and drug-drug interactions  
2. Application of Nursing Process in drug therapy  
   2.1 The role of nurse in drug administration  
   2.2 Nutrition and electrolytes  
   2.3 Neurologic and neuromuscular agents  
   2.4 Antiinflammatory and antiinfective agents  
   2.5 Antineoplastic agents  
   2.6 Respiratory agents  
   2.7 Cardiovascular agents
2.8 Gastrointestinal agents
2.9 Eye, ear and skin agents
2.10 Endocrine agents
2.11 Reproductive and gender-related agents
2.12 Emergency agents
2.13 Drug therapy in children and the older adult
2.14 Analgesics
2.15 Local and general anaesthetics
2.16 Sedatives and hypnotics
2.17 Antidepressants and antipsychotics

3. Contemporary issues in pharmacology
3.1 The legal and ethical issues related to drug administration
3.2 Importance of patient safety and prevention of medication errors
3.3 Infectious diseases and related drug therapy (e.g. Avian Flu and anti-viral drugs)
3.4 The drug approval process, resources, and cultural considerations
3.5 Drug abuse
3.6 The role of the nurse in drug research and clinical trial
3.7 Forensic classification of drugs in Hong Kong

Reading list:


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**AV computer disk:**
Basic nursing pharmacology (computer file) (1996), Chapel Hill: Health Sciences Consortium

**Journal:**
British journal of clinical pharmacology
British journal of pharmacology

**Useful web sites:**
http://www.pharmacology.com
http://mosby.com
Integrated Medical Curriculum at http://www.ime.gsm.com
Clinical Pharmacology 2000 at http://www.cp.gsm.com
RXLIST – The Internet Drug Index http://rxlist.com
SUBJECT DESCRIPTION FORM

Subject Title: Primary Care Problems of Adults I  Subject Code: SN581

Credit Value: 3  Date of Submission: Jan 2006

Level: 5

Responsible staff & Department: Dr Chiang Chung-seung (Subject Lecturer)
Mrs Sarah Kong (SN) (Subject Coordinator)

Pre-requisites: Nil

Recommended Background Knowledge: Nil

Learning Approach:
Lectures and class discussion on selected topics.

Contact hours:
Lectures 42 hours

Assessment:
Examination (100%)
Mid Term Exam 50%
Final Exam 50%

Course Description
This subject aims to gain the problem-solving and clinical strategies necessary for primary care practice as advanced practice nurse. Course content will focus on both the methodologies used to diagnose and treat common primary care problems as well as the educational and counseling components of care. Elements of chronic care management and the approach to care will be introduced and discussed.

Objectives:
Upon completion of this course, the student will be able to:

1. Describe the role of advanced practice nurse in the care of primary problems of adults.
2. Utilize the principles and concepts of primary care preventive services in a clinical setting.
3. Describe the etiology, pathophysiology, sign, and symptoms of common health problems.
4. Identify the common differential diagnoses associated with each health problem.
5. Propose appropriate laboratory studies and interpret laboratory results for cost-effective evaluation of common health problems.
6. Select appropriate treatment modalities and nursing management for the diagnosed problem incorporating a holistic, culturally sensitive approach.

7. Counsel the patient regarding certain health conditions in the context of his/her family, home, work and community environments.

8. Develop appropriate plans for follow-up care based on the clients identified physiological and psychosocial needs.

9. Utilize current research to plan and evaluate management strategies.

10. Utilize principles of chronic disease management as appropriate to the common health problems presented.

Syllabus:

1. Introduction to Primary Care
   - Concepts & primary care and preventive services
   - Principles of chronic disease management
   - Role of advanced practice nurse in primary care

2. Etiology, pathophysiology, signs, symptoms, differential diagnosis, appropriate laboratory studies, treatment and nursing care of common primary care problems of adults:
   - cardiovascular disorders such as hypertension, obesity, syncope, angina pectoris, ischemic heart disease, acute myocardial infarction, heart failure, cardiac arrhythmia and ECG interpretation;
   - endocrine disorders such as thyroid diseases and diabetes mellitus;
   - gastrointestinal disorders such as peptic ulcer and gastrointestinal malignancies;
   - chronic disabling conditions such as pain, rheumatic arthritis and SLE;
   - contemporary primary care problems and related management

Required Text and Readings

Journal article readings are required in addition to the pertinent text chapters for each class. These assigned articles are identified on the individual bibliography for each class.


Reading Lists


Journals:

American Journal of Nursing
Asian Journal of Nursing Studies
British Medical Journal
Journal of Advanced Nursing
Journal of the American College of Cardiology
Journal of the American Medical Association
Lancet

Useful Websites:

http://www.icn.ch/
http://www.nursingsociety.org/
http://www.nursingworld.org/aan/
SUBJECT DESCRIPTION FORM

Subject Title : Primary Care Problems of Adults II  
Subject Code: SN582

Credit Value : 3  
Date of Submission: March, 2004
Updated: February 2006

Level : 5

Responsible staff & Department : Dr Chiang Chung-seung (Subject Lecturer)
Mrs Sarah Kong (SN) (Subject Coordinator)

Inclusions : Required for all adult nurse practitioner students. Open to others with permission of the subject lecturer.

Learning Approach:
Lectures, case study analysis, and class discussion on selected topics.

Contact hours:
Lectures 36 hours
Seminar / tutorials 6 hours

Assessment:
Continuous assessment (100%)
Tests 85%
Seminar presentation 15%

Course Description
A continuation of Primary Care Problem of Adults I. This subject structured to enable students to gain the problem-solving and clinical strategies necessary for primary care practice as nurse practitioners. Course content will focus on both the methodologies used to diagnose and treat common primary care problems as well as the educational and counselling components of care.
Objectives:

Upon completion of this course, the student will be able to:

1. Explore the role of the advance practise nurse in screening, diagnosing, and treating clients with common adult health problems.
2. Incorporate primary health care services and preventive health care teaching as appropriate for the client’s problem, cultural/ethnic background, and abilities.
3. Describe the etiology, pathophysiology, and presenting signs and symptoms of each disorder.
4. Identify the common differential diagnoses associated with each health problem.
5. Identify the laboratory analyses and diagnostic imaging appropriate for evaluating the client.
6. Select appropriate treatment modalities and nursing management for the diagnosed problem incorporating a holistic, culturally sensitive approach.
7. Counsel the patient regarding certain health conditions in the context of his/her family, home, work and community environments.
8. Develop appropriate plans for follow-up care based on the clients identified physiological and psychosocial needs.
9. Utilize current research to plan and evaluate management strategies.

Syllabus:

1. Role of advanced practice nurse in caring clients with common adult health problem.
2. Etiology, pathophysiology, signs, symptoms, differential diagnosis, laboratory studies, treatment and nursing care of common primary care problems:
   - respiratory disorders such as COPD, asthma, respiratory tract infection, bronchiectasis and sleep apnoea;
   - neurological problems such as stroke and dementia;
   - genitourinary problems such as nephropathy, renal failure, and haemodialysis;
   - women health related issues such as breast cancer, menopause, urinary incontinence, gynecological disorders, gynecological malignancies and childbearing related disorders;
   - mental health disorders such as psychosis, neurosis, depression and substance abuse;
   - psychosocial and behavioural factors affecting health conditions such as violence, psychosomatic illnesses and anxiety;
   - contemporary health issues such as communicable diseases and environmental health concerns.

Required Text and Readings

Journal article readings are required in addition to the pertinent text chapters for each class. These assigned articles are identified on the individual bibliography for each class


Reading List:


Journals:

American Journal of Nursing
Asian Journal of Nursing Studies
British Medical Journal (BMJ)
Journal of Advanced Nursing
Journal of the American College of Cardiology (JAMA)
Lancet

Useful Websites:

http://www.icn.ch/
http://www.nursingsociety.org/
http://www.nursingworld.org/aan/
SUBJECT DESCRIPTION FORMS

INSTITUTE OF TEXTILES AND CLOTHING
SUBJECT DESCRIPTION FORM

Subject title: Personal Protective Equipments in Infection Control
Subject Code: ITC576

Credit value: 3
Submission Date: Jan 2008
(Revised: May 2008)

Responsible staff and Department:
Prof. Li Yi (ITC)
Guo Yueping (ITC)

Pre-requisite: Nil

Recommended background knowledge: Nil

Exclusions: Nil

Learning Approach:

Contact Hours
Lecture
Seminar/Laboratory tutorial

Independent Study Hours:
Reading / Self-study
Seminar preparation
Individual written assignment
Group project

Total: 42 hours

Total: 100 hours

Assessment:

Continuous Assessment (100%):
Individual seminar presentation
Individual written assignment
Group project presentation
Group project report
Written tests

Learning Outcomes:

Upon completion of the subject, students will be able to:

1. Demonstrate understanding of the transmission pathways of infectious diseases and how to use Personal Protective Equipments (PPE) in infection control.
2. Identify the critical issues of using personal protection equipments in infection control.
3. Evaluate PPE critically in terms of usability and performances with the knowledge of testing relevant methods and standards.
4. Analyze and select PPE for specific purposes by applying the scientific knowledge and principles of design and engineering of PPE.
Syllabus:

1. **PPE in Infection Control**
   - Infectious diseases
   - Respiratory protective devices, protective clothing and PPE ensemble

2. **Protective efficiency**
   - Spreading of pathogenic organism in PPE
   - PPE for prevention of pathogenic organism’s transmission
   - The filter classification system of respirators
   - The protective efficiency of PPE

3. **The physiological effects of wearing PPE**
   - Resistance to breathing, dead air space, and effects on physical performance and respiratory function
   - Heat stress and cardiovascular stress
   - The autonomic nervous system and hormones
   - The oxidative stress

4. **Psychological impact of wearing PPE**
   - Subjective ratings of sensation of humidity, hotness and thermal comfort
   - The preferences of subjects for different types of PPE

5. **Fabric physical properties**
   - Fabric water repellence, resistance to liquid water penetration, structure and density and PPE barrier properties
   - Air permeability, water vapour permeability, moisture management properties and thermal conductance
   - Weight and thickness of the protective clothing materials

6. **Guidelines for front-line health care workers in choosing and using PPE**
   - Overall evaluation in PPE
   - Guidelines in choosing and using correct PPE in the right context

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**Reading list and references:**

**On-line resources:**
Centre for Disease Control and Prevention (http://www.cdc.gov/)
World Health Organization (http://www.who.int/csr/don/en/)

**Journal:**
- *Infection Control and Hospital Epidemiology*
- *American Journal of Infection Control*
- *Ergonomics*
- *European Journal of Applied Physiology*
- *American Journal of Industrial Medicine*

**Essential and supplementary reading list:**

## SUBJECT DESCRIPTION FORM

### DISSERTATION

**Faculty of Health and Social Sciences**
- MSc HC (IC)  
  HSS 5901

**Department of Health Technology and Informatics**
- MSc HC (BI)  
  HTI 5607
- MSc HC (HT)  
  HTI 5152
- MSc HC (MR)  
  HTI 5715

**Department of Rehabilitation Sciences**
- MSc HC (OT)  
  RS 590
- MSc HC (PT)  
  RS 591
- MSc HC (DD)  
  RS 592

**School of Nursing**
- MSc HC (NR)  
  SN 590
- MSc HC  
  SN 592
SUBJECT DESCRIPTION FORM

Subject Title: Dissertation
Subject Code: HSS/HTI/RS/SN 59XX/5XXX/59X

Credit Value: 9
Date of submission: Dec 94
Updated: June 2004
April 2005
March 2006

Responsible Staff & Departments: Award Dissertation Committee of each award

Pre-requisite:

- All awards: RS517 “Research Methods & Data Analysis”
- HT, PT, OT, RDD awards: RS517 “Research Methods & Data Analysis” + RS550 “Research Proposal Writing” (for HT award, RS550 could be replaced by HTI5153 “Independent Study in Biomedical Engineering”)

Objectives:
To enable students to

1. make integrative linkages between theoretical concepts and practical/clinical experience;
2. pursue an in-depth examination of a selected topic area of interest in health care, and relevant to the student’s own work situation;
3. develop critical thinking and analytic evaluation skills through planning and implementing a research project, and evaluating the outcome in a systematic way and to a professional standard;
4. demonstrate an understanding of relevant literature in the topic area selected;
5. demonstrate an ability to set the topic in its wider context, to sustain argument, and to present conclusions related to practice implications in health care practices in Hong Kong;
6. develop and deepen their interest and awareness in on-going research in health care areas of their own interest by sensitizing themselves to their dual role as researchers and health care practitioners.

Learning Approach:

Contact Hours:

1. Tutorials 18 hours
   [tutorials will be arranged to further enhance knowledge & understanding of various research designs and methodologies]

2. Students are expected to consult with their dissertation supervisor(s) regularly on: 24 hours
   [or as necessary]
   (a) selecting project topic
   (b) planning the project
   (c) preparation of proposal
   (d) managing the project
   (e) preparation of progress presentations and dissertation report.

3. Progress Report Presentation & Seminars 18 hours
   [including student’s own presentation and attendance of progress report seminars, if any, scheduled during the students’ dissertation registration period].
   Sub-total: 60 hours

Independent study hours:

- Literature Review
- Research Design
- Data Collection
- Analyzing and Interpreting Data
- Preparation of Proposal & Report
Sub-total: 360 hours

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Students will be assigned academic supervisor(s) based on staff’s specialist subject area, research background and interest. Professional supervisor(s) may be appointed to advise and guide the student if the research topic is clinically or work related.

The role of supervisor(s):
- advise the student on suitable research topic and scope;
- advise the student on the planning of an appropriate course of research action;
- meet with the student at regular intervals to discuss and guide the progress of work;
- monitor and ensure that the student is engaged on a feasible project which might be expected to produce sufficient results within the normal dissertation registration period;
- advise the student of the aims, scope and presentation of the report and on any publication likely to arise from the work, and mutually agree on a schedule of progress report presentation;
- review and comment critically on the drafts of the major sections of the report as they are prepared, and of the completed report before it is submitted.

The role of students:
- identify an area for study, explore this area in depth, collect and analyze data, and write a report;
- present three progress reports at scheduled presentation seminars;
- actively participate and share experience in at least 80% of the scheduled progress report seminars, interact with other students and staff in discussion on issues arising from the progress report seminars;
- to seek advice and meet with the supervisor(s) regularly;
- be self-motivated, set and monitor own goals and progress;
- work independently according to the planned research project time-table and framework;
- ensure the completion of the dissertation within the normal dissertation registration period (i.e three semesters from the initial dissertation registration);
- to follow the rules and guides for Dissertation stipulated by the PolyU.

Assessment (types & weighting):

As stipulated in the Regulations of Postgraduate Schemes under the Credit-based System and the Dissertation Handbook for Postgraduate Schemes, the components are:

| (i)     | Progress             | 20% |
| (ii)    | Oral Examination     | 30% |
| (iii)   | Dissertation Report  | 50% |

Total: 100%

The assessment panel will jointly allocate a grade guided by the above weightings which may vary depending on the nature of the project. Individual awards may modify key items and the recommended weightings according to the needs of each award.

The dissertation must reflect sufficient evidence of independent work to justify the award at the Master’s level, and, preferably be job and profession related. It must be a topic related to the programme area of study in which the student is enrolled. As there is no single universal definition of what constitutes a Master’s dissertation, the Dissertation Assessment Panel has the responsibility to decide whether the dissertation reaches the necessary level.

The dissertation must satisfy the Dissertation Assessment Panel in the following:
- adequate knowledge of the chosen research topic;
- understanding of the issues and developments in the research topic;
- mastery of research procedures and design, techniques of data collection;
- mastery of appropriate analytical procedures and appropriate interpretation; and
- evidence of scientific validity.

Syllabus:

The dissertation carries a subject weighting equivalent to three standard taught subjects, and thus represents approximately 420 hours of student effort. Normally the student is expected to complete his dissertation within three semesters. The maximum duration of Dissertation registration is 4 semesters.

There is no set syllabus for the dissertation. The student may select, plan and conduct a research project relating to any area in health care, subject to the availability of supervisors and their research interests and background. The research area should be in line with the student’s overall design of his/her chosen programme of study and choice of subjects.
Example research areas are:

a. Technology
   - acoustics and vibration in orthopaedics and rehabilitation;
   - biomechanics in musculoskeletal rehabilitation;
   - computer-based rehabilitation of persons with physical disabilities;
   - human movement analysis;
   - instrumentation in rehabilitation;
   - mutation detection technology
   - neuromuscular biomechanics;
   - prosthetics and orthotics;
   - radiodiagnostic equipment and technology;
   - technology in pressure therapy and sore prevention

b. Education
   - clinical education
   - clinical laboratory management;
   - conceptions of teaching and learning;
   - evaluation of health care professions’ education programme;
   - nursing leadership; leadership in policy making & change;
   - reflective learning; professional development;
   - student learning approaches

c. Clinical
   - application of ergonomics principles;
   - clinical biomechanics of lumbar spine;
   - clinical electrophysiology;
   - clinical trials in musculoskeletal disorders;
   - community rehabilitation programmes;
   - computerized tomography;
   - conductive education;
   - critical care nursing;
   - geriatric rehabilitation;
   - hand functions and assessment;
   - human occupational performance deficit (occupational sciences);
   - hypertrophic scar formation;
   - immunoassay development;
   - mechanisms of renal stone formation;
   - medical microbiology;
   - motor development of children; assessment and intervention;
   - mutational analysis of genetic diseases;
   - myoelectric signals and mechanical parameters in muscle performance;
   - occupational therapy, physiotherapy intervention for persons with neurological dysfunction;
   - occupational therapy intervention and evaluation in psychosocial rehabilitation;
   - oxidant and antioxidant balance;
   - polymerase chain reaction;
   - psychometric and programme evaluation;
   - quality of life of (a) adults with mental handicap; (b) elderly persons;
   - radiation dosimetry; radiography; radionuclide imaging;
   - scientific basis of physio-therapeutic techniques; sports physiotherapy;
   - tissue repair;
   - ultrasonography;
   - vascular biology

d. Infection Control
   - SARS, TB, Avian flu
   - study of personal protective equipment
   - infection control practices, e.g. handwashing

NOTE: Students of the Infection Control award (ICM) should carry out a project directly related to infection control and practice related issues.

Process: There are several stages in the preparation of the Dissertation:
(i) Preparatory stage:

The Chairman/Chairperson of the Award Dissertation Committee will arrange a Dissertation seminar at the beginning of each semester for students registered for the Dissertation. Students will be briefed on the structure and general operational guidelines of the dissertation. A list of staff research interests and possible topics will be distributed to the students. Students are encouraged to approach possible supervisors for advice prior to submitting a brief initial proposal (200 words) of their intended area of research. Based on the initial proposal, suitable supervisor(s) will be assigned as soon as possible.

(ii) Approval of the topic by the supervisor(s):

After the supervisor(s) is assigned, the student should contact his supervisor(s) as soon as possible to finalize the topic and scope of the research project.

(iii) Approval of the dissertation proposal by the Award Dissertation Committee:

- In consultation with the dissertation supervisor(s), the student works out a dissertation proposal (Form AS 125) which must show evidence of sound background knowledge and state in specific terms:
  a. literature review, definition of the theoretical concepts to be used, and the basis for the research problem with reference to other such research;
  b. specific aims and objectives;
  c. methodology of the study, i.e. the ways in which data are to be collected, analyzed and reported;
  d. a list of reference;
  e. a research action schedule.
- The student should refer to the Dissertation Handbook, and the Regulations of Postgraduate Schemes under the Credit-based System for the procedures and format of submission of the dissertation proposal for approval by the Award Dissertation Committee.
- Once a dissertation proposal is approved, the student shall proceed at once to carry out the work. The maximum number of dissertation proposals which a student may submit is two.
- Students should be aware that approval to commence a dissertation is by no means automatic. There may be cases where a student is not permitted to proceed with a dissertation and such students will be required to leave the Scheme on completion of the requirements for a Postgraduate Diploma award.

(iv) Approval of the completed draft dissertation report by the supervisor(s):

- The student must monitor his/her own progress throughout the preparation of the dissertation. He/she should seek advice from his/her supervisor(s) whenever necessary. A progress report (Form AS 126) should be submitted to the Dissertation Coordinator via his/her academic supervisor at least once every semester to ensure smooth progress of the dissertation.
- The student will give one or two presentations on the progress of the research project before viva examination.
- These presentations have multi-purposes and are designed to:
  a. help the student to work within the normal time-frame allowed for the dissertation;
  b. help the student to fine tune the project. Through the discussions during the presentation, drawing on research experience from other dissertation supervisors and other students who may have experience in the subject area, the student may gain further insight into the project;
  c. help the student to develop presentation and communication skills in preparation for the oral examination of the dissertation.
- The student should submit:
  a. the drafts of the major sections of the report to the dissertation supervisor(s) for advice and comments as they are prepared.
  b. the completed report to the dissertation supervisor(s) for approval.
  c. the Dissertation Submission Form (Form AS 127) with Section I completed.

(v) Completion and submission of the formal Dissertation Report to the Dissertation Assessment Panel:

- The dissertation supervisor(s) will assess the continuous effort and performance of the student during the preparation, implementation of the research project and on the progress report presentations.
The dissertation supervisor will send copies of the approved report to the members of the Dissertation Assessment Panel, and make arrangements with the Dissertation Assessment Panel and the student for the oral examination.

(vi) **Oral Examination**

- The Dissertation Assessment Panel will hold a *viva voce* examination for approximately forty-five minutes. The student will be required to make a presentation of the research project which lasts for around twenty minutes.

- The assessment for the oral examination will take into consideration
  
  a. the student’s knowledge and understanding of the research problem, analysis and interpretation of the research finding;
  
  b. the student’s ability to answer queries;
  
  c. the student’s presentation and communication skills.

(vii) **Dissertation Report**

- Each Dissertation Assessment Panel member assesses the report independently and after conducting the oral examination, the Dissertation Assessment Panel members will jointly allocate a *Grade*.
- In assessing the report, the panel members will adopt the following assessment guidelines. The dissertation is expected to show evidence of:

  a. an ordered, critical and reasoned exposition of knowledge gained through the student’s independent effort;
  
  b. extensive critical literature review and gathering of relevant information;
  
  c. an ability to make critical use of published work and source materials and relate to students’ area of research in health care;
  
  d. critical examination and appropriate application of theory and concepts to practical/clinical work;
  
  e. competence in independent work or experimentation;
  
  f. an understanding of appropriate research techniques;
  
  g. an appreciation of the relationship of the selected topic to the wider field of knowledge in health care;
  
  h. a certain degree of original investigation or the testing of ideas.
  
  i. being worthy, in part, of publication.
  
  j. achieving a high level of written presentation of the report (written in fluent, succinct English, suitably illustrated and appropriately organized and referenced).

(viii) **Final Dissertation Report**

On receiving the supervisor(s)’ report on the outcome of dissertation assessment, the student should submit the final dissertation report to the Academic Supervisor.

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**Reading List:**


And relevant articles from journals in appropriate areas.