



RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM
(Revised November 2003)

PLEASE NOTE:

1. All sections of this form **must** be completed. This form should be **signed** by the department chair or graduate advisor.
2. A *Recommendation for Change in Graduate Curriculum* form must be completed for **all** course changes.
3. A departmental representative will be required to attend the Faculty Curriculum & Policy Committee at which this recommendation for change in graduate curriculum is to be discussed.

Department	Medical Sciences				
Course Title	Clinical Topics in Nephrology and Renal Disease				
Course Number	MS768	COURSE CREDIT			
		Full Course	<input type="checkbox"/>	Half Course	<input checked="" type="checkbox"/>
Instructor(s)	Dr. Richard Austin (Medicine); Dr. Alistair Ingram (Medicine)				
Prerequisite(s)	Undergraduate course in biochemistry, cell biology and/or animal physiology, and permission of instructor				
NATURE OF RECOMMENDATION (please check appropriate box)					
New Course	Date the new course is to be offered: September 2010				
	Was the new course offered on Dean's approval? <input type="checkbox"/> Date: _____				

CONTENT/RATIONALE (Give a brief description, i.e. outline the topics or major sub-topics, and indicate the principal texts to be used. In the Faculty of Science, please indicate whether the course is an Inquiry course.)

The course will be offered at St. Joseph's Hospital in the Division of Nephrology. It currently contains 12 X 3 hr sessions that will cover a wide range of topics relevant to kidney structure and function as well as the pathophysiology of renal disease. The course will be an interactive forum between faculty members, students and course co-ordinators that will consist of faculty presentations, student presentations and discussion sessions to highlight relevant and important aspects of each session. The course will emphasize the underlying pathophysiological aspects of renal function and disease as observed in a clinical setting.

Kidney structure and function

1. Renal anatomy and Renal Physiology I
 - normal renal anatomy and histology
 - overview of developmental biology, of the nephron and the behaviour of renal cells in culture
 - renal circulation and microcirculation, glomerular function and ultrafiltration
 - fundamentals of the renin angiotensin system
2. Renal Physiology II and Measurement of Renal Function
 - water excretion, diuretics and vasopressin, acid excretion and ammonium, potassium excretion
 - measurement of renal function and pitfalls

Hypertension

1. The pathophysiology and societal burden of hypertension
 - what is essential hypertension?
 - the pathophysiology of renovascular hypertension, insight into hypertension from genetic diseases
 - the societal burden of hypertension
2. Investigation and treatment of hypertension
 - appropriate investigation of hypertension, drugs used to treat hypertension and how they work
 - does hypertension cause renal disease?

Diabetes

1. An in-depth look at diabetic nephropathy
 - pathology and staging, pathophysiology, clinical presentation
2. Experimental and clinical diabetic nephropathy
 - animal models of diabetic nephropathy and their shortcomings
 - a historical overview of studies of treatment of diabetic nephropathy in animals and humans
 - a survey of potential new therapies
 - the burden of diabetic nephropathy in clinical practice

Chronic renal failure

1. Progression of chronic renal failure
 - glomerular hyperfiltration, mechanisms of fibrosis
 - current clinical and experimental strategies to delay progression
2. Metabolic consequences of chronic renal failure
 - pathophysiology and treatment of renal anemia, renal bone disease and acid retention
3. Vascular calcification in chronic renal failure
 - cellular mechanisms and animal models, prevalence and relationship to cardiovascular disease
 - detection of vascular calcification, treatment strategies- both accepted and experimental

Genetic renal diseases

1. Polycystic kidney disease and genetic glomerulopathies
 - pathophysiology and the ciliopathies, clinical presentation
 - animal models and new therapeutic approaches
 - genetic FSGS and the podocyte
 - genetic disorders of basement membrane function and collagen

An overview of renal transplantation

1. Renal transplantation
 - the transplant immune response, crossmatch and rejection
 - mechanisms of action of currently used immunosuppressive drugs

An overview of dialysis

1. Dialysis
 - hemodialysis- theory, technique and measurements of adequacy
 - peritoneal dialysis- theory, technique and measurements of adequacy

BRIEF DESCRIPTION FOR CALENDAR (maximum 6 lines) *(Provide a brief description to be included in the Graduate Calendar)*

The goal of this course is to provide students with an understanding of kidney structure/function as well as the clinical consequences of renal disease and the biological mechanisms that determine the pathogenesis of this condition. Initial focus will be on kidney structure, physiology and function, including renal anatomy, renal circulation and microcirculation, and fluid filtration. The focus will then switch to hypertension, diabetes, chronic renal failure and genetic renal diseases. The final focus will provide an overview on renal transplantation and dialysis. Sessions will comprise faculty presentations, interactive student sessions and student presentations.

Change in Course Description		Change to Full Course		Change to Half Course	
Change to Quarter Course		600-Level Course (Undergraduate course for graduate credit) *see #4 page 2			
<input type="checkbox"/> Change in Course Title		Old Course Title: <i>(If the course is being renamed, provide the old title)</i>			
<input type="checkbox"/> Course Cancellation <i>(Provide the reason for course cancellation)</i>					
<input checked="" type="checkbox"/> Other <i>(explanation)</i> New course					

1. Statement of Purpose (How does the course fit into the department's program?):

The purpose of this graduate course is to provide a comprehensive overview of the clinical, biological and pathophysiological aspects of kidney function under both normal and disease states. The course fits into the department's program because it highlights a translational approach (from basic science to clinical applications) in understanding the pathophysiological aspects of kidney structure and function.

2. Expected Enrolment:

We are expecting enrolment of 8-10 graduate students from the Medical Sciences Program. The course will also be open to graduate students in Biochemistry and Biology. A maximum of 12 graduate students would be allowed. A minimum of 6 graduate students would be needed to run the course.

3. Method of Presentation of Course Material:

Each 3 hr session will consist of a faculty seminar (1 hr), 2 student presentations (2 X 45 min=1.5 hr) and a general discussion period (0.5 hr) that summarizes the key points raised by the guest faculty member/course co-ordinators. Course material for each session will be provided to the students one week prior to that session. Students will be required to obtain all assigned class papers/review articles as well as papers for student presentations one week prior to each session.

Recommended textbook: Comprehensive Clinical Nephrology 3rd Edition, J. Feehally, J. Floege, R.J. Johnson.

4. Method of Evaluation: *(Indicate the Extra Work to be required of graduate students in a 600-level course, i.e. exams, essays, etc.)*

Methods of evaluation will consist of: submission of a CIHR style grant application (30%) and oral presentation/defence (15%) of the grant proposal, student presentations of assigned papers (30%) and student participation (25%) which includes: class discussion/questions related to the faculty

seminar, assigned papers for student presentations, round table discussions, and the summarization of key points for each session. Students will be expected to provide written feedback and critique of each student presentation for each session (evaluation forms will be provided for each session). In terms of the CIHR grant application, faculty will provide a minimum of two clinically-related problems that could be considered as a relevant research topic for a grant application. Students will have an opportunity of choosing one of these specific clinically-based problems from the list and will be responsible for developing a grant proposal that spans both clinical and basic science aspects of the topic.

5. To prevent overlap, is a course in the same or a related area being given in another department? If so, please attach to this form any relevant correspondence with the other department(s).

There is currently no other graduate course offered that has similar or identical content. This is a unique graduate course offered in Medical Sciences that presents kidney structure/function and underlying mechanisms of renal disease from a clinical perspective.

6. If the proposed course is to be cross-listed in another department, please attach to this form relevant correspondence with the department.

This course will not be cross-listed in another department. However, graduate students in the Departments of Biology or Biochemistry will have the opportunity of enrolling in the course.

7. If the course is intended primarily for students outside your department, do you have the support of the department/program concerned?

not applicable

If the School of Graduate Studies has any questions regarding this change, who should be contacted?

Name: Richard Austin

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Ext. 35175

**Department Chair or
Graduate Advisor (Signature)**

Date:

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.