SPPH 681B - 2015
Knowledge Based Medicine

TIME AND PLACE:	Term 1, September 2016 Thursday 1 pm – 4 pm
LOCATION:	Room SPPH B138 School of Population and Public Health 2206 East Mall
INSTRUCTOR:	K.S. Joseph MD, PhD Professor School of Population and Public Health Department of Obstetrics & Gynaecology University of British Columbia and the Children's and Women's Hospital of British Columbia Tel: 604-875-2000 ext 4811 E-mail: ksjoseph@cfri.ca
CO-INSTRUCTOR	Sarka Lisonkova MD, PhD Assistant Professor Department of Obstetrics & Gynaecology University of British Columbia and the Children's and Women's Hospital of British Columbia Tel: 604-875-2000 ext 4793 E-mail: slisonkova@cfri.ca
OFFICE HOURS:	By Appointment
PRE-REQUISITES:	Basic knowledge of epidemiology and biostatistics

COURSE PHILOSOPHY
The classroom provides a forum where reason and evidence are presented by the instructor in order to enable students to reach an understanding on any particular topic. Although the inferences that students reach need not mirror those of the instructor, the requirement to support one's position with logic, reason and evidence is an important aspect of the course philosophy. Students in any class comprise a heterogeneous group in terms of learning abilities and learning needs. Topics will be presented at a basic level before proceeding to a second level re-examination of the issues. It is expected that students will carefully read provided course material ahead of each session.

COURSE OBJECTIVES
The objectives of the course are to help students gain an understanding of
1. The form of knowledge required for the scientific practice of medicine.
2. How epidemiologic research can add to the knowledge base of scientific medicine.

TEACHING GOALS AND STRATEGIES:
Students learn best when they are engaged through a process that is both instructive and intellectually entertaining. The course strategy for achieving this will involve the discussion of thought provoking ideas, with illustrations and pertinent examples from the contemporary literature. This strategy also includes challenging, though not necessarily time consuming, assignments.

COURSE DESCRIPTION:
This course is intended for
  a) *medical residents, fellows and junior faculty who wish to pursue a career in applied medical (epidemiologic) research.*
  b) *Students of epidemiologic research who wish to work in a clinical department.*

Evidence-based medicine, the current standard for normative and scientific medical practice arose as an alternative to experience-based medical practice. In recent years, the fundamental premise of evidence-based medicine has been challenged, and knowledge-based medicine has been proposed as a more appropriate basis for the scientific practice of medicine. Indeed, medicine appears to be the only modern discipline which embraces empirical evidence, whereas most others are science-based (from Latin scientia, meaning "knowledge"). These two alternative approaches are contrasted in Miettinen's recent book 'Toward scientific medicine' (Springer, 2014). In evidence-based medicine, the physician synthesizes the evidence in the literature in order to set gnostic probabilities, whereas in knowledge-based medicine the physician deploys intersubjective knowledge, theoretical and substantive, in setting gnostic probabilities.

The content of the course will generally follow the writings of Professor Miettinen, as presented in his recent texts. Students will be exposed to a coherent worldview that defines the various areas of medical endevour including preventive medicine, public health, community medicine and clinical medicine. Students will also be introduced to the role of epidemiologic methods in medical research for supporting the knowledge-based practice of medicine at both the clinical and community levels. Sessions will focus on diagnostic, etiognostic and prognostic research, with a stress on the distinction between object design and methods design. For example, in connection with clinical diagnosis, object design will cover issues related to domain specification and the form of the object (e.g., should the end result be sensitivity/specificity of the test or a prevalence function for obtaining the probability of a disease). Methods design will consider topics such as source population, need for representativeness vs efficiency, validity, model fitting and model reduction.

STUDENT EVALUATION:

Grading	Pass/Fail
Assignments	40%
End of term examination	60%

COURSE SUMMARY

Week	Topic(s)
1	• Research for supporting the knowledge base of medical practice
2	• Epidemiologic concepts and terms
3	• Diagnosis (Bayesian concepts)
4	• Diagnosis (diagnostic probability functions)
5	• Etiognosis
6	• Etiognosis (continued)
7	• Confounding by indication and confounding by contraindication
8	• Prognosis (causal prognosis)
9	• Prognosis (non-causal prognosis; prognostic probability functions)
10	• Screening for disease
11	• Gnosis in community medicine
12	• Inference
13	• Final examination

COURSE ASSIGNMENTS AND DUE DATE – All assignments are to be submitted electronically to the Instructor via email by the due dates/times

IMPORTANT NOTES with regards to late assignments and plagiarism
Students are expected to know what constitutes plagiarism, that plagiarism is a form of academic misconduct, and that such misconduct is subject to penalty. Please review the Student Discipline section of the UBC Calendar, available on-line at
http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,959