

A USER MANUAL FOR COURSE CHAIRS and COURSE COMMITTEES

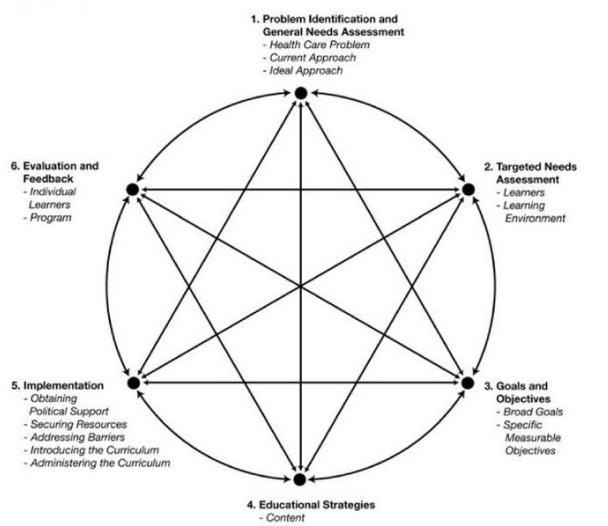
1. Introduction

1.1. Why This Document?

The primary goals of this help manual are to assist course chairs and committees towards achieving consistency in the operation of UME courses and to promote better curriculum integration both horizontally (occurring in the same curricular phase) and vertically (occurring in different phases and years) of instruction. The guide focuses on areas that a course chair and committee need to address in running a course and provides some operational advice.

1.2. A Broad View

There is a lot of detail in this document so, before digging too deep, a “big picture” view of what a medical education course does might be helpful. Kern’s 6-step model of curriculum development is shown on the right (the figure is referenced [HERE](#) along with other resources for medical curriculum development). Our courses need to be attentive to steps 3-6 in this model which focus on specific objectives, educational strategies, implementation, assessment of learners and evaluation of overall course function. The Instructional Design Committee is a source of peer help and assistance for course design and operation.



1.3. Our Program Goals and Competencies

The broad goal of our MD Program (Kern's Step 3) is to graduate physicians who “will possess the knowledge, skills, and attitudes basic to all physicians such that they may satisfactorily proceed to further training in any area of the profession”. To achieve that, Program objectives have been developed around 7 CanMEDS core competencies: 1) medical expert; 2) communicator; 3) collaborator; 4) manager; 5) health advocate; 6) scholar; and 7) professional. The detailed list of Program competencies can be found on the Schulich website [HERE](#):

2. Our Curriculum

2.1. Curriculum Structure

Your first challenge will be to ensure that your course’s learning experiences fit into the overall curriculum in a logical way, ultimately contributing to the students’ achievement of the curricular goals and attainment of the core Program competencies. To this broad end, each course should be mindful of where it lies in the curriculum, what came before and what will come later. Below is a schematic of our 4-year curriculum. More information can be found [HERE](#):

- ➔ Each course in our curriculum has a presence on Western’s learning management system called Online Western Learning (OWL), listed by course number. Committees and course instructors can access all course materials for your own course and for other courses by logging into [OWL](#) using the generic login ID (available from UME).
 - **PLEASE DO NOT DISTRIBUTE THESE CREDENTIALS OUTSIDE THE SCHOOL**
- ➔ A schematic of our curriculum along the full names of all courses is in **APPENDIX 1**

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- ➔ A fundamental question for each course is: “how will our course provide instruction that addresses curricular goals and core competencies (1.3)?” and, specifically for pre-clerkship courses, “how will our course prepare students for the year 3 clerkship and beyond?”

3. Course Design and Organization

3.1. Your Course Committee

- ➔ Each course must have an operational course committee, hereafter “the committee”. For breadth of input and assistance with course organization duties, each course committee should have members with clinical and basic science educational experience, a family physician, a medical student, a Windsor Course Coordinator, course faculty from London and Windsor sites and members of UME support staff. Use your course instructors to populate your course committee. Courses can also benefit from input by residents and senior medical students.
- ➔ The committee should meet at least three times per academic year, for example, two organizational meetings before course operation and a review meeting afterwards;

3.2. Your Course Goals and Objectives

- ➔ The committee should be familiar with and address any issues in the final reports of the Objectives Committee (March 2012) and the Assessment Committee (April 2012);
- ➔ Courses should focus on their broad goals as well as have a list of detailed instructional and learning objectives;
- ➔ Your Course Goals:
 - Will aid the committee in prioritizing its instruction;
 - Should be broad expectations as to what students will be able to do on completion of the course;
 - Should relate to any “must haves” and “must dos” that the course feels are essential for students;
 - Should align with overall Program goals (1.3);
 - Should include some goals relating to non-medical-expert roles;
 - Should guide and prioritize course and session instruction, described [HERE](#);
 - Should be assessed and the assessments reviewed annually;
- ➔ Your Course Objectives:
 - These are usually more specific than Course Goals and are focused to specific instruction, learning or cognition. More information is [HERE](#);
 - Is the number appropriate for the total course instructional time?
 - Are the objectives set to an appropriate and reasonable level in terms of the educational stage of the student?
 - Are they worded so that they can be taught and assessed?
 - Objectives should be blueprinted to course assessments and reviewed annually;
 - Course objectives that are not regularly assessed should be reviewed, re-written or deleted from the course list;
 - More details on objectives are in **APPENDIX 2**

3.3. The Context of Your Course

- ➔ It can be very challenging to integrate course instruction with other parts of the curriculum. Your course should be aware that, besides attending teaching sessions in your course, students will also be participating in Clinical Methods (MED5139 and MED5246) and in other courses – see the schematic in **APPENDIX 1**;

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- ➔ Specific references in your course instruction to instruction outside your course can assist students in “putting it all together”;
- ➔ In the pre-clerkship, references to clerkship experiences and clinical student learning will improve student preparation for clerkship;

3.4. Your Course Content

- ➔ The committee should plan course content carefully in alignment with its goals and objectives (3.2);
- ➔ The course must include a discussion of the all course assessment on the first day of the course;
- ➔ Consider an introductory lecture to review course content, schedule, tools, learning modalities, changes to course from last year and why;
- ➔ Consider a “basics” section at start: anatomy, embryology, histology and basic pathology (introduce unique terminology like salpingitis...), physiology, pharmacology;
- ➔ Consider orienting content around timing of exams: “softer” lecture content week prior to exam, having the course exam on a Monday, with no lectures on the Friday prior;
- ➔ Consider themes for each week: “Basics week”; “COPD week”, “Gynecological oncology week” etc;
- ➔ Consider identifying critical or core objectives for each week related to your “Must haves” (3.2); tie these to review sessions / review podcasts; use as base for most of examination questions; limit these to 5-6 objectives per week;
- ➔ Remember to keep objectives simple and appropriate to the undifferentiated physician;
- ➔ Integrate your content and your teaching modalities (3.5): lectures, small group sessions, review sessions, podcast reviews, tutorials;

3.5. Your Teaching Modalities

- ➔ Strategize and vary learning modalities to address students’ different learning needs and enhance repetition of material for longer term retention;
- ➔ Consider / prioritize use of lectures for “must know” course goals (3.2);
- ➔ Use the “flipped classroom” process occasionally, described [HERE](#):
- ➔ Don’t use lectures for everything. Complement “must know” lectures with:
 - Facilitated small group sessions:
 - case based
 - problem solving approach
 - Large group sessions:
 - case based
 - problem solving approach
 - 2-3 lecturers as a team collaboration to present clinical imaging and pathology (this is not TBL!)
 - Team Based Learning (TBL). Some courses use this and can provide advice. More information is [HERE](#);
 - Review sessions;
 - pre exam to provide “typical” types of questions
 - after exam to review questions poorly answered. This process can identify ambiguous questions to be deleted from the exam score and updated / rewritten for future exams;
 - Weekly podcast reviews;
 - Reinforce core / “must know” objectives and content
 - Repetition of material enhances longer term retention
 - PowerPoint slides and voice with some visual of speaker
 - use core / “must know” objectives for content

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- review main points of week's theme
- choose frequent lecturers
- Independent Learning Modules:
 - Must have objectives that are clear
 - Indicate to student how long it takes to complete
 - Should be interactive – not just click through
 - Problem solving approach most useful
 - Work with [**Schulich Strategic Technology Commons \(STC\)**](#) to develop online learning modules
 - Indicate whether (case) material is mandatory and examinable
- PCCIA:
 - Each course has agreed to a PCCIA theme
 - Align your PCCIA theme with your course content – do not orphan PCCIA!
 - Do not repeat specific PCCIA content in lectures or other modalities
 - Base PCCIA on weekly themes to enhance (review) content
 - Link your PCCIA assignment to your PCCIA theme

4. Course Operation

4.1. Your Course Schedule and Operation

- ➔ Use as few lecturers as possible:
 - Students value familiarity and consistency of approach, particularly for face-to-face instruction;
 - Students form bonds easier with fewer rather than more lecturers;
 - Fewer lecturers minimizes unplanned repetition;
 - For the “one off” lectures in your course, question whether your course really needs a unique expert lecturer on topic X. Does the topic align with core objectives and course “must knows”? Is it appropriate for pre-clerkship?
- ➔ Consider subcommittee meetings with faculty to develop content
- ➔ Ensure that both London and Windsor Program faculty are included in your planning and operation:
 - Ensure that your course committee has a Windsor Program Coordinator
 - Have some lecturers videoconference from the Windsor Program
 - Consider travelling to Windsor to lecture from there
 - Have course coordinators at both sites available in class periodically to address concerns
 - Have Windsor Program faculty participate in review sessions and assignment tutorials
- ➔ Ensure that each instructor in your course is directed to the School’s list of [**“How Do I’s**](#) related to teaching, pedagogy and assessment and, in particular, to the UME-approved guidelines on [**Classroom Teaching**](#) and, if appropriate, [**Small Group Facilitation**](#);
- ➔ Maintain communication with your instructors: agree on a mechanism for faculty reminder about lecture / small group / tutorial:
 - mandate adherence to UME deadlines
 - secretary and faculty email list
 - phone call / email to course instructors one week prior to their deadline / lecture
- ➔ Audit lectures as much as you can: involve the course committee in this:
 - To examine flow of content
 - To assess for repetition of content
 - To review content level appropriate for undifferentiated physician
 - To provide feedback to instructors about lecture content

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- ➔ Liaise with Clinical Clerkship Rotation Directors (contact becky.bannerman@schulich.uwo.ca for names / contacts):
 - To determine where material is best taught or reinforced (Years 1, 2, 3, 4)
 - To gauge content appropriate to undifferentiated physician level
- ➔ Attend meetings of the **Pre-clerkship & Integration Committee (PIC)** regularly:
 - To stay attuned to matters of common interest to courses
 - To hear BCOE reports on other courses
 - To discuss with other course coordinators placement of common course content
- ➔ Show appreciation for instructor participation
 - follow-up letter / small token of thanks (chocolate works well)
 - follow-up lunch to share course outcomes and obtain faculty feedback
 - ensure that instructors get course and individual evaluations after the course
- ➔ Involve BCOE and class representatives from London and Windsor as much as possible:
 - meet with them at start and end of your course
 - highlight improvements / changes to course
 - obtain formal and informal feedback on course
 - include in regular course committee meetings
 - review course schedule
- ➔ Review your course evaluations from BCOE and UME
- ➔ Receive input from / consult with the Instructional Design Committee (IDC) in order to address feedback and improve your course

4.2. Student Assessment in Your Course

- ➔ Design and assign content for course assessments: mid-course test? final exam?
- ➔ Set course assignment date to be after mid-course test and before final exam
- ➔ Consider preparing all student assessments by committee. Even if a variety of instructors provides questions, their review and oversight by your committee will increase quality;
- ➔ Consider alternative assessment methods:
 - Seek input from instructors on targeted questions to optimize time
 - Select specific instructors to create questions that address gaps
 - Use multiple choice questions, short-answer questions, key feature problems
- ➔ Ensure a robust blueprinting process for all course assessment:
 - blueprint will ensure that course objectives and associated instruction are tested in correct proportions
 - addresses all course objectives, especially “must know” objectives;
 - content covered by various instruction modalities;
 - the amount of instructional time used for all modalities;
 - the assessment blueprint is a two-way table which designates the objectives / content to be covered by assessments and the number / types of questions associated with each topic
- ➔ For the course assignment:
 - Challenge students to put some aspect of their learning into practice, for example:
 - an evidence based approach to new or controversial topic;
 - a handout for primary care clinics (or patients) that summarizes current approaches to treatments / management;
 - a brief summary (say 5 slides or a paragraph) that would prepare a clerk for a clinical situation;

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- for assignments, have a tutorial to address goals, approaches and student concerns;
- Ask UME for examples of assignments in other courses
- ➔ Consider a Team Based Learning quiz. Place this early in the course;
- ➔ Note that PCCIA assessment is a separate component of each course mark and includes components of student self, group and individual assessment by the facilitator;
 - course committees do not oversee this assessment
- ➔ For exams, decide the types and number of questions according to your course assessment blueprint;
- ➔ Further detailed information on assessment questions is in **APPENDIX 3**;

5. Your Process

5.1. Review what came before

- ➔ Annually review and incorporate into your committee process:
 - Previous UME reports of the Objective Committee and the Assessment Committee for particular recommendations for your course and for general comments on other courses;
 - Any feedback from the Instructional Design Committee (IDC) and the Quality Committee (QC);
 - Any curriculum directives from the Curriculum Committee
 - The UME annual report;
 - Previous course schedules;
- ➔ Analyze student evaluations / feedback from:
 - UME Evaluation Unit (QC)
 - BCOE
 - small group discussions (pathology does separate evaluations)
- ➔ Examine exam outcomes (overall marks, performance of questions)
- ➔ Detailed metrics are available from UME on all questions used in exams and should be reviewed to edit or delete poor questions from your question bank
- ➔ Minutes of previous course committee meeting to ensure that issues were addressed
- ➔ Comments received from course instructors
- ➔ Previous course chair's comments (if you are a new chair)
- ➔ Any coordinator feedback from other courses

5.2. Decide strategy, priority design and implementation

- ➔ Have major course goals / objectives been identified and is the course committee aligned to these?
- ➔ Is the course objectives list reasonable, manageable, teachable and assessable?
- ➔ Are your course goals and objectives aligned with clerkship and MCC objectives?
- ➔ Are there issues of course organization to address?
- ➔ Can some lecture learning content be given in a more interactive way to promote active learning?
- ➔ Are there liaisons / collaborations with other courses that need to be addressed or developed?
- ➔ Are there problem areas of instruction, retirements etc to be dealt with?
- ➔ Are there resources in UME or IDC that could assist the course going forward?
- ➔ Have organizational timelines for the current iteration of the course been set?

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- ➔ Is it possible to delegate particular areas of course operation, for example independent learning, assessment etc., to a few members of the course committee or a subcommittee?

5.3. Seek Assistance for Your Course

- ➔ UME staff are a valuable resources for information about courses
- ➔ Each course has been assigned UME support staff who are vital to course operation for:
 - Scheduling meetings;
 - Maintaining course contact lists of instructors;
 - Drafting and maintaining the draft schedule for the current iteration of the course;
 - Ensuring that UME deadlines for course materials are planned for and achieved;
 - Liaising with other courses, committees and student representatives;
 - Making various materials available to the course committee for course planning and operation, including past schedules, teaching materials, UME document and guidelines;
- ➔ Specific detailed UME support in the areas of curriculum, assessment and evaluation from specialist staff is also available to courses on request
- ➔ Information, advice and help from the IDC committee are also available. Please consult the IDC chair.

Four-Year Curriculum

YEAR	Professional Portfolio I							
	Introduction to Medicine	Blood	Infection & Immunity	Skin	Heart & Circulation	Respiration & Airways	Genitourinary System	PL
YEAR 1	Medical Ethics & Humanities I	Epidemiology				Population Health		
Patient-Centered Clinical Methods I								
YEAR 2	Digestion & Nutrition	Endocrine & Metabolism	Reproduction	KTFM	Musculoskeletal System	EC	Neurosciences Eye & Ear	Psychiatry & Behaviour
	Health Care Systems		Medical Ethics & Humanities II			Independent Learning		
Patient-Centered Clinical Methods II								
YEAR 3*	Intro	Family Medicine	Paediatrics	Obstetrics & Gynecology	Psychiatry	Internal Medicine	Surgery	
Professional Portfolio III								
YEAR 4	Electives			Integration & Transition	Residency Matching	Integration & Transition	ACLS	Graduation

PL = Physician as Leader

KTFM = Key Topics in Family Medicine

EC = Emergency Care

*Students take clerkship rotations in different orders

Residency Matching = Canadian Residency Matching Service Period

ACLS = Advanced Cardiovascular Life Support

First Year Courses

- MED5115, Introduction to Medicine
 MED5121, Blood
 MED5116, Infection & Immunity
 MED5117S, Skin
 MED5120, Heart & Circulation
 MED5119, Respiration & Airways
 MED5104, Genitourinary System
 MED5222T, Physician as Leader
 MED5105S, Population Health
 MED5107, Epidemiology (Year 1)
 MED5130, Medical Ethics & Humanities (Years 1 & 2)
 MED5139, Patient Centred Clinical Methods (Year 1)
 MED5140, Professional Portfolio (Years 1 & 2)

MED5210, Key Topics in Family Medicine
 MED5130, Medical Ethics & Humanities (Years 1 & 2)
 MED5140, Professional Portfolio (Years 1 & 2)
 MED5246, Patient Centred Clinical Methods (Year 2)

Third Year Course

MED5475, Integrated Clerkship

Fourth Year Course

MED5402, Integration and Transition

Second Year Courses

- MED5203, Digestive System & Nutrition
 MED5202, Endocrine and Metabolism
 MED5205, Reproduction
 MED5218, Musculoskeletal System
 MED5208, Emergency Care
 MED5206, Neurosciences, Eye & Ear
 MED5207, Psychiatry & the Behavioural Sciences
 MED5209, Health Care Systems

Objectives

- According to Mager (1984), an objective consists of:
 - the description of performance: what the learner is able to do
 - the specific condition under the performance is expected to occur
 - the quality or level of performance that will be acceptable
- Objectives can be roughly set out as “content-centered” (encouraging students to understand and remember) and “learner-centered” (fostering learning and thinking);
- Blooms Taxonomy is a cognitive-based schema to classify learning expectations with various levels of complexity from basic understanding (knowledge, comprehension) to higher levels of integration and use (analysis, synthesis, evaluation);
- ABCDs of Writing Objectives (Kern et al 1998)
 - Audience: The who. "The student will be able to..."
 - Behavior: What a learner is expected to be able to do or the product or result of the doing. The behavior or product should be observable
 - Condition: The important conditions under which the performance is to occur.
 - Degree: The criterion of acceptable performance. How well the learner must perform in order for the performance to be considered acceptable
- Read more on objectives and their importance for guiding instruction and assessment [HERE](#);
- For instance, at the end of a course related to infectious diseases you could have such a blueprint for “HIV infection/disease” as a specific topic: “HIV infection/disease”
 (Objectives of the course and the time spent on each part is not provided in this example. Based on the time spent in the course, the instructor can put the weight on each part of the assessment. For example, if 2 specific sessions were specified for the clinical manifestation and differential diagnosis, we have to include more questions related to that part of the content.)

Bloom's Taxonomy	Cognitive	Affective	Psychomotor	Assessment choice
Classification	knowledge	-	-	MCQ
Structure	Knowledge, Application	-	-	MCQ
Replication	Knowledge	-	-	MCQ
Clinical manifestation, and differential diagnosis	Knowledge, Application, Synthesis, Evaluation	-	-	SAQ, KFP, Long case
Diagnosis	Knowledge, Application	-	Microscopic examination of infected lymphocytes and opportunistic infections	SAQ, KFP, Lab assignment, checklist
Treatment	Comprehension, Analysis	-	-	SAQ, KFP, Open-ended question
Prevention	Synthesis	Receiving, responding, valuing	-	TBL, Assignment, Peer- evaluated group project, portfolio, questionnaire

MCQ, Multiple Choice Question; SAQ, Short Answer Question; KFP, Key Feature Problem
 References:

Kern, D.E., Thomas, P.A., Howard, D.M., & Bass, E.B. (1998). Curriculum Development for Medical Education: A Six-Step Approach. Johns Hopkins University Press: Baltimore, Maryland.
 Mager, R. F. (1984). Preparing Instructional Objectives (2nd edition). Lake Publishing Company: Belmont, California.

Assessment

- All courses should consult with the UME Assessment Unit who can provide assistance and advice on planning and design of course assessments
- Be aware that assessment, formative and summative, drives learning, yet is often the portion of instruction that is left as a last part of education planning and execution;
- Far too often planning around course assessment is dominated by expedience. “Can we expect the instructors to mark short answer questions?” “What is practically possible?” “What takes the least amount of work?”
- Make sure to review the final report of the Assessment Committee in regard to your course assessments and those of other courses;
- UME offers financial support for marking, so courses should not feel that automatically-marked MCQs are the only option (see below)
- Besides the medical expert competency, our curriculum focuses on six non-medical expert competencies (see 1.1). Be aware of and use tools to address these non-medical-expert competencies in your course. Consult documents from the RCPSC, for example:

An Introductory Guide to Assessment Methods for the CanMEDS Competencies Educational Design: A CanMEDS Guide for the Health Professions

- Design of MCQs is very important. Students are very adept in applying strategies to answer flawed questions! Try to have your entire course committee or a subcommittee review all course MCQs. Excellent background information and guidelines are available from the **National Board of Medical Examiners** and these and other design issues are addressed **HERE**. Some brief points are:
 - Vary the Bloom’s Taxonomy level so that not all questions are just testing understanding / comprehension
 - Use a long(er) question stem and short(er) question options in MCQs
 - Keep question options (correct answer and distractors) a similar length
 - Research has shown that more than three options in MCQs does not improve question validity and reliability
 - If a question is confusing or unclear to you and your committee colleagues, it will certainly be so to students
 - Examine the metrics of questions post-exam and discard / rework questions for the future
- Include some other question formats in your assessments:
 - Extended match questions: the student pick several choices from a list
 - Key feature problems: these are short clinical cases or scenarios which are followed by questions
 - Script concordance tests: these assess clinical reasoning and interpretation of medical information under conditions of uncertainty
 - Short-answer questions: these are open-ended questions that require students to generate an answer of no more than one or two words
 - Essay questions: these require longer answers where students will process, summarize, evaluate or apply information to new situations
 - Modified essay questions: usually consists of a case followed by a series of questions.
 - Lab assignment, for example in the anatomy laboratory
- Much additional information, resources and assistance is available from members of the Instructional Design Committee. Please ask!