

SELECTED MODERN CURRICULA AND TRAINING PROGRAM REQUIREMENTS FOR TRAINING IN CLINICAL CHEMISTRY AND MEDICAL BIOCHEMISTRY

Updated January 2010

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Introduction

Syllabuses of study and curriculum requirements in clinical chemistry and in medical specialties of laboratory medicine from a number of professional associations and accrediting / licensing bodies have been compiled in this document. The intent of this article is to assist individuals to gain insight into modern curricula by providing examples from a number of countries, and to provide this information electronically for easy access. It is not the intent of this article to offer an evaluation of these curricula.

These curricula and training program outlines are intended to assist teachers and educators who wish to compare their curriculum requirements to those of other countries. Teachers in clinical chemistry and in medical specialties of laboratory medicine may find this information helpful in curriculum revision, and in the review of their own programs or for purposes of benchmarking.

The training requirements outlined in these curricula and programs are targeted mainly at the postdoctoral (post-PhD) and medical residency (post-MD) levels of training; as such, they may be directly relevant to similar programs in other countries. The subjects, however, are relevant to all levels of training in clinical chemistry and laboratory medicine, and so should be useful in the review of curricula for Baccalaureate or Masters Degree programs. In using this information, the latter programs may wish to adjust the depth or level of learning associated with each topic.

These curricula may assist students and residents in clinical chemistry and medical biochemistry / chemical pathology who wish to assess their knowledge against the requirements of the programs that are outlined here.

Canada – Training in Clinical Chemistry – CACB Syllabus

The Canadian Society of Clinical Chemist (CSCC) (<http://www.cscce.ca>) is the National Society in Canada.

The Canadian Academy of Clinical Biochemists (CACB) is the body within the CSCC that is responsible for certification of clinical chemists in Canada. It is the group of clinical chemists who have passed their Certification exams and become Fellows. The Syllabus of Study for Postdoctoral Training in Clinical Chemistry in Canada was developed by the CACB. This Syllabus outlines the educational requirements for the two-year training programs in clinical chemistry. Requirements for entry include a Ph.D. in Biochemistry or a related science (e.g., Biology, Chemistry, Immunology, Nutrition, Pharmacology, Physiology). At the completion of the training program, candidates are eligible to take the Certification examinations of the CACB.

The CACB Syllabus is available in English and French at:

<http://www.cscce.ca/index.php/publisher/articleview/frmArticleID/31/>

The English and French versions are embedded here.



CACB Syllabus
2005.pdf



CACB Syllabus 2005
francais.pdf

Canada – Training in Medical Biochemistry – Royal College of Physicians and Surgeons of Canada Objectives of Training and Specialty Training Requirements in Medical Biochemistry

Requirements for training in the medical specialties of medical biochemistry, medical microbiology and hematology have been set out by The Royal College of Physicians and Surgeons of Canada (RCPSC) (<http://rcpsc.medical.org>). Training entails a four or five-year postgraduate or residency program in medical biochemistry.

Go to <http://rcpsc.medical.org/information/index.php>; then select Specialty.

Medical Biochemistry requirements are outlined at <http://rcpsc.medical.org/information/index.php?specialty=225&submit=Select> Click on [Objectives of Training and Specialty Training Requirements](#) to see Objectives of Training and Specialty Training Requirements in Medical Biochemistry 2000.

The document is embedded here.



RCPSC Objectives of
Training in Medical Biochemistry 2000

Medical Microbiology requirements are outlined at <http://rcpsc.medical.org/information/index.php?specialty=227&submit=Select> Click on [Objectives of Training](#) to see Objectives of Training in Medical Microbiology 2005.

The document is embedded here.



RCPSC Objectives of
Training in Medical Microbiology 2005

Hematology requirements are outlined at <http://rcpsc.medical.org/information/index.php?specialty=430&submit=Select> Click on [Objectives of Training](#) to see Objectives of Training in Hematology 2009

The document is embedded here.



RCPSC Objectives of
Training in Hematology 2009

UK – Training in Clinical Chemistry – ACB Grade A Training Manual and Higher Specialist Training

The Association of Clinical Biochemists (ACB) (<http://www.acb.org.uk>) has some information on training under <http://www.acb.org.uk/training/issues.asp>. It has in the past prepared training documents for two levels of training of clinical biochemists: Grade A Training Manual, and Higher Specialist Training; it also has a document on Training in Paediatric Clinical Biochemistry. These documents were formerly, but are no longer, available electronically.

In addition, scientists may apply to take the MRCPPath examinations of the Royal College of Pathology.

UK – Training in Chemical Pathology – Royal College of Pathology MRCPPath

The membership examinations The Royal College of Pathology (RCP) (<http://www.rcpath.org>) are open to individuals who have followed approved training programmes. Entry to MRCPPath is by a degree in medicine, 1st or 2nd class honours degree in an appropriate science subject, or equivalent qualification in dental surgery or veterinary medicine. Completion of Part 1 leads to the award of a Diploma in the subject. Diplomates are entitled to use the designation DipRCPPath. Completion of Part 2 leads to the award of MRCPPath.

The RCP Curriculum for Specialty Training in Chemical Pathology 2007 is available at: <http://www.rcpath.org/index.asp?PageID=114>

The Curriculum for specialty training in chemical pathology January 2007 (with minor amendments made July 2008) is available at http://www.rcpath.org/resources/pdf/q043_chempathcurriculum_aug08.pdf

The RCP Curriculum for Specialty Training in Chemical Pathology 2007 is embedded here.



RCP Curriculum for
Specialty Training in C

Europe – Training in Clinical Chemistry – EC4 Syllabus

The EC4 European Syllabus describes the minimum scientific contents of the professional knowledge and training of clinical chemists across Europe, recognizing that there will be differences among the countries of the European Community and each member state organizes laboratory medicine within in its own national health care system.

This Syllabus describes some core elements of training in clinical chemistry. In addition training may include knowledge of haematology, microbiology, biochemistry, parasitology and immunology. Level of training: Training as a clinical chemist must involve dedicated post-graduate study of at least four years, following a complete and appropriate university education of at least four years.

The EC4 European Syllabus for Post-Graduate Training in Clinical Chemistry and Laboratory Medicine: version 3 – 2005 is available at www.e-c4.org/downloads/CCLM-Syllabus-2006.pdf.

It was published in Clin Chem Lab Med 2006;44(1):110–120.

The Syllabus is embedded here.



EC4 European
Syllabus for Post-Gra

Europe – Training in Medical Biopathology – UEMS Fellowship of the European Board of Medical Biopathology

UEMS Medical Biopathology, the European Union association for medical specialist doctors in laboratory medicine, has training in four subspecialties: Chemical Biopathology, Haematology, Microbiology, and Polyvalent Medical Biopathology. (Polyvalent Medical Biopathology includes Haematologic Biopathology, Microbiological Biopathology, Chemical Biopathology, and Immunological Biopathology.)

The training programs in each of these subspecialty areas are outlined in the document, Fellowship of the European Board of Medical Biopathology, available at: <http://nc.ibk.liu.se/uems/board/board.htm>

The Fellowship of the European Board of Medical Biopathology document is embedded here.



Fellowship of the
European Board of M

Australasia – Training in Clinical Chemistry – Australasian Association of Clinical Biochemists Board of Examiners Syllabus

Membership and Fellowship in the Australasian Association of Clinical Biochemists (AACB) (<http://www.aacb.asn.au>) are on the basis of examination papers. The Education Committee is responsible for the preparation of educational material such as the study guide for the Association's examinations.

The [New Revised Curriculum 2007](#) (AACB Curriculum 2007) is found on the web page (right –hand side) at <http://www.aacb.asn.au/web/Education/Examinations>.

The AACB Curriculum 2007 is embedded here.



AACB Curriculum
2007.pdf

Australasia – Training in Chemical Pathology – Royal College of Pathologists of Australasia Trainee Handbook

The Royal College of Pathologist of Australasia (RCPA) (<http://rcpa.edu.au/Home.htm>) offers training in Chemical Pathology.

The RCPA Trainee Handbook describes training requirements for the specialty of Chemical Pathology. It is available at [http://www.rcpa.edu.au/static/File/Asset_library/public_documents/Training/General Information/Trainee Handbook - latest - October 2008.pdf](http://www.rcpa.edu.au/static/File/Asset_library/public_documents/Training/General_Information/Trainee_Handbook_-_latest_-_October_2008.pdf)

The RCPA Trainee Handbook is embedded here.



RCPA Trainee
Handbook.pdf

Summary

In summary, syllabuses and training program requirements from eight different bodies involved in setting training requirements for programs in clinical chemistry and medical laboratory specialties have been described in brief. This information may be helpful to teachers in other programs around the world whose teachers are undertaking review of their programs / developing new programs.