

## PREPARING FOR THE 2015 MCAT

The 2015 MCAT exam has taken most of the content of prior MCAT exams, placed more emphasis on some topics, and added a few new sections. The following web site will provide you with a very thorough overview of the 2015 MCAT exam:

<https://www.aamc.org/students/applying/mcat/map/mcat2015knowledgemapconcepts2/368590/bb1.html>

Here is a list of the topics in each section of the 2015 MCAT:

### **I. Biological and Biochemical Foundations of Living Systems Section**

#### Foundational Concept 1:

Content Category 1A: *Structure and function of proteins and their constituent amino acids*

Content Category 1B: *Transmission of genetic information from the gene to the protein*

Content Category 1C: *Transmission of heritable information from generation to generation and the processes that increase genetic diversity*

Content Category 1D: *Principles of bioenergetics and fuel molecule metabolism*

#### Foundational Concept 2:

Content Category 2A: *Assemblies of molecules, cells, and groups of cells within single cellular and multicellular organisms*

Content Category 2B: *The structure, growth, physiology, and genetics of prokaryotes and viruses*

Content Category 2C: *Processes of cell division, differentiation, and specialization*

#### Foundational Concept 3

Content Category 3A: *Structure and functions of the nervous and endocrine systems and ways in which these systems coordinate the organ systems*

Content Category 3B: *Structure and integrative functions of the main organ systems*

### **II. Chemical and Physical Foundations of Biological Systems Section**

#### Foundational Concept 4

Content Category 4A: *Translational motion, forces, work, energy, and equilibrium in living systems*

Content Category 4B: *Importance of fluids for the circulation of blood, gas movement, and gas exchange*

Content Category 4C: *Electrochemistry and electrical circuits and their elements*

Content Category 4D: *How light and sound interact with matter*

Content Category 4E: *Atoms, nuclear decay, electronic structure, and atomic chemical behavior*

#### Foundational Concept 5

Content Category 5A: *Unique nature of water and its solutions*

Content Category 5B: *Nature of molecules and intermolecular interactions*

Content Category 5C: *Separation and purification methods*

[Content Category 5D: Structure, function, and reactivity of biologically-relevant molecules](#)

[Content Category 5E: Principles of chemical thermodynamics and kinetics](#)

### **III. Psychological, Social, and Biological Foundations of Behavior Section**

#### [Foundational Concept 6](#)

[Content Category 6A: Sensing the environment](#)

[Content Category 6B: Making sense of the environment](#)

[Content Category 6C: Responding to the world](#)

#### [Foundational Concept 7](#)

[Content Category 7A: Individual influences on behavior](#)

[Content Category 7B: Social processes that influence human behavior](#)

[Content Category 7C: Attitude and behavior change](#)

#### [Foundational Concept 8](#)

[Content Category 8A: Self-identity](#)

[Content Category 8B: Social thinking](#)

[Content Category 8C: Social thinking](#)

#### [Foundational Concept 9](#)

[Content Category 9A: Understanding social structure](#)

[Content Category 9B: Demographic characteristics and processes](#)

#### [Foundational Concept 10](#)

[Content Category 10A: Social inequality](#)

### **IV: Scientific Inquiry & Reasoning Skills**

[Skill 1: Knowledge of Scientific Principles](#)

[Skill 2: Scientific Reasoning and Problem-solving](#)

[Skill 3: Reasoning about the Design and Execution of Research](#)

[Skill 4: Data-based Statistical Reasoning](#)

[General Mathematical Concepts and Techniques](#)

### **V: Critical Analysis and Reasoning Skills Section**

[Skill 1: Foundations of Comprehension](#)

[Skill 2: Reasoning Within the Text](#)

[Skill 3: Reasoning Beyond the Text](#)

[Passage Types](#)

[Periodic Table of Elements PDF](#)

AMCAS recommends the following courses for the 2015 MCAT:

Introductory Biology	2 semesters
Biochemistry	1 semester
General Chemistry	2 semesters
Organic Chemistry	2 semesters
General Physics	2 semesters
Intro to Psychology	1 semester
Intro to Sociology	1 semester

Here is how these semester-long courses translate into DU quarter-hour courses. I will also include a list of courses that I recommend you take.

**I. Introductory Biology (2 semesters)**

- BIOL 1010 Physiological Processes + lab
- BIOL 1011 Evolution, Heredity and Biodiversity + lab
- BIOL 2120 Cell Structure and Function + lab

**Additional courses that you should consider:**

- BIOL 2510 General Genetics
- BIOL 3800 Human Molecular Biology or CHEM 3813 Biochem III – Nucleic Acids (both courses will cover eukaryote gene expression and discuss standard molecular biology lab techniques)
- BIOL 3250 Human Physiology and/or
- BIOL 3650 Endocrinology and BIOL 3640 Introductory Neurobiology (BIOL 3640 will also be helpful on the Social Science section of the MCAT)

**Additional courses that cover topics covered on the 2015 MCAT and in the first year of medical school:**

- BIOL 3670 Molecular Immunology
- BIOL 3910 Viruses and Infectious Diseases
- BIOL 3610 Developmental Biology
- BIOL 3642 Neuropharmacology

You will find it challenging to fit in all of these courses. Hence, you will find that there are some topics that could appear on the MCAT that you will need to read about on your own time. Allow at least 4 months to prepare for the MCAT so that you can read up on topics that you could not take in a formal course setting.

**II. Biochemistry (1 semester)**

- CHEM 3811 Biochem I – Proteins
- CHEM 3812 Biochem II – Membranes/Metabolic Pathways

**III. General Chemistry (2 semesters)**

- CHEM 1010 General Chemistry + lab
- CHEM 2011 Analysis of Equilibrium + lab
- CHEM 2130 Chemistry of the elements + lab

**IV. Organic Chemistry (2 semesters)**

- CHEM 2451 Organic Chemistry I + lab
- CHEM 2452 Organic Chemistry II + lab
- CHEM 2453 Organic Chemistry III + lab

**V. General Physics ( 2 semesters)**

- PHYS 1111 General Physics I + lab
- PHYS 1112 General Physics II + lab
- PHYS 1113 General Physics III + lab

**IV. Social Sciences Courses**

- SOCS 1710 Foundations of Psychology
- SOCS 1810 Foundations of Sociology
- For this section of the MCAT, a course in statistics such as PSYC 2300 (Introduction to Statistics) or BIOL 2090 (Biometry) would be beneficial.

As you can see the MCAT covers a broad spectrum of topics. This is the type of exam that requires careful preparation. Allow yourself an adequate period of time to review for this exam. I would recommend that you get a copy of:

“The Official Guide to the MCAT Exam (MCAT2015) 4<sup>th</sup> edition ([www.aamc.org/mcat2015](http://www.aamc.org/mcat2015))

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