



## CAMBRIDGE COACHING

### Sample MCAT Comprehensive Syllabus 25 2-hour sessions

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This syllabus provides a full, in-depth overview of all major topics covered on the MCAT. It is split into 25 x 2-hour sessions, each covering a different set of topics. While 50 hours is a lot of time, it's not nearly enough to master the MCAT. Therefore, the syllabus is meant to guide student work, rather than to encompass the whole of it. For each 2 hour session, students are expected to spend 6-8 hours engaging the material on their own. The bulk of this time will be spent with one of three types of resources: 1) Khan Academy videos, 2) reading material, or 3) practice questions. Student should begin with the Khan Academy videos, complementing these with reading material where reinforcement might be helpful. Finally, students should aim to complete all assigned practice questions. The tutor will work with the student to clarify challenging concepts, work through practice questions, and teach and reinforce proper exam techniques.

#### Required Resources

- AAMC Practice exam
- Princeton Review (Practice Exams, Biology Review, Psychology and Sociology Review)
- Berkeley Review (General Chemistry Review, Organic Chemistry Review, Physics Review, Biology Review)
- ExamCrackers 101 Passages in MCAT Verbal Reasoning;

#### Before the First Session

- Read through the syllabus
- Take the three practice passages each from the Khan Academy's Physical Sciences, Biological Sciences, and Behavioral Sciences passages, which are freely available online at <http://www.khanacademy.org/test-prep/mcat>
- Consider your MCAT goals, past experiences, and potential challenges, and come ready to discuss these with your tutor



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### Sample Sessions

Every MCAT student's aptitude and learning style is different, so the focus and pacing of sessions will be set according to student data on problem sets and practice tests. However, the sample sessions below map out the typical progression of a tutoring relationship, including in-session content coverage and related homework assignments.

#### Introduction Session

- Program Overview
- Discussion of MCAT history/goals
- Diagnostic Review
- Biological Sciences: MCAT Hormones
- Verbal: Cambridge Coaching Verbal Protocols

#### Session 1

##### Reading

- Biochemistry and Cellular Respiration: PR Bio p. 15-56 + BR Bio section 7 questions 1-11, 44-65, and section 8 passages
- BR Physics "Translational Motion" + passages
- 7 Analysis and Reasoning Passages

##### Khan Academy Videos

- [Principles of bioenergetics, overview of metabolism, carbohydrate metabolism, Krebs cycle/oxidative phosphorylation](#)
- [Vectors and scalars, Newton's Laws and equilibrium, speed and velocity, acceleration](#)

#### Session 2

##### Reading

- Molecular Biology: PR Bio p. 57-98 + BR Bio section 9 passages
- Microbiology: PR Bio p. 99-134
- PR Organic Chemistry "Structure Elucidation" + passages

##### Khan Academy Videos

- [Amino acids and proteins, enzyme structure and function, enzyme kinetics, DNA](#)
- [Dot structures, stereochemistry, covalent bonds](#)

#### Session 3

##### Reading

- Eukaryotic Cell: PR Bio p. 135-178 + BR Bio section 6 passages, and section 7 questions 12-43, 66-100
- BR General Chemistry "Stoichiometry" + passages
- 7 Analysis and Reasoning Passages

##### Khan Academy Videos

- [Cell membranes, cell-cell interaction, transport across a cell membrane](#)
- [Stoichiometry](#)



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### Session 4

#### Readings

- BR Physics "Forces, Circular Motion, and Gravitation" + passages
- Genetics and Evolution: PR Bio p. 179-226 + BR Bio sections 10 passages
- BR Organic Chemistry "Molecular Structure" + passages

#### Khan Academy Videos

- [Force of tension, normal forces](#)
- [Gene control, Genetic mutations, mendelian genetics, evolution and population dynamics](#)

### Session 5

#### Readings

- Nervous and Endocrine System: PR Bio p. 227-274, BR Bio section 1 questions 1-87, section 5 questions 41-100
- BR Physics "Periodic Motion and Waves" + passages
- 7 Analysis and Reasoning Passages

#### Khan Academy Videos

- [Nervous system, Neural cells, neuron membrane potentials, neuronal synapses, biosignaling, endocrine system](#)

### Session 6

#### Readings

- BR Organic Chemistry "Hydrocarbon Reactions" + passages
- Circulatory, Lymphatic, and Immune system: PR Bio p. 275-314 + BR Bio Section 2 questions 1-72, section 5 questions 1-40
- 7 Analysis and Reasoning Passages

#### Khan Academy Videos

- [Aldehydes and Ketones,](#)
- [Circulatory system, hematologic system, lymphatic system, immune system](#)



## CAMBRIDGE COACHING

### Session 7

#### Readings

- BR Organic Chemistry "Carbon-yls and Alcohols" + passages
- PR Behavioral Sciences Psychology and Sociology Strategy for the MCAT
- PR Behavioral Science: Biological Foundations of Behavior

#### Khan Academy Videos

- [Alcohols and phenols](#), [carboxylic acids](#), [alpha-carbon chemistry](#)
- [Behavior and genetics](#), Biological basis of behavior ([nervous system](#), [endocrine system](#))

### Session 8

#### Readings

- Excretory and Digestive system: PR Bio p. 315-352 + BR Bio section 3 passages
- BR General Chemistry "Phases & Phase Changes" + passages
- 7 Analysis and Reasoning Passages

#### Khan Academy Videos

- [Renal system](#), [regulation of blood pressure](#), [gastrointestinal system](#)

### Session 9

#### Readings

- BR Physics "Work and Energy" + passages
- Interacting with the environment
- BR Physics "Electrostatics and Electromagnetism" + passages

#### Khan Academy Videos

- [Work and Energy](#)
- [Sensory Perception](#), [Sight](#), [Sound](#), [Somatosensation](#), [Taste](#)



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### Session 10

#### Readings

- Personality, Motivation, Attitudes, and Psychological Disorders
- BR General Chemistry "Acids & Bases" + passages
- 7 Analysis and Reasoning Passages

#### Khan Academy Videos

- [Drug Dependence](#), [Emotion](#), [Stress](#), [Language](#), [Theories of Personality](#), [Motivation and Attitudes](#)

### Session 11

#### Readings

- Muscular and skeletal systems: PR Bio p. 353-382 + BR Bio section 1 questions 88-100
- Statistics and research methods
- 7 Analysis and Reasoning Passages

#### Khan Academy Videos

- [Muscular System](#), [Skeletal System](#)

### Session 12

#### Readings

- BR Organic Chemistry "Carbohydrates" + passages
- BR General Chemistry "Atomic Theory" + passages
- BR Physics "Momentum and Torque" + passages

#### Khan Academy Videos

- [Carbohydrates](#)
- [Atomic Nucleus](#)
- [Forces on Inclined Planes](#)



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### Session 13

#### Readings

- Learning, Memory and Behavior
- Practice exam

#### Khan Academy Videos

- [Cognition, Attention and Language, Sleep and Consciousness, Memory](#)

### Session 14

#### Readings

- BR General Chemistry "Atomic Theory" + passages
- BR General Chemistry "Equilibrium" + passages
- BR Organic Chemistry "Carbohydrates" + passages

#### Khan Academy Videos

- [Atomic Nucleus](#)
- [Carbohydrates](#)

### Session 15

#### Readings

- BR Physics "Electricity and Electric Circuits" + passages
- Learning, Memory and Behavior

#### Khan Academy Videos

- [Capacitors](#)
- [Cognition, Attention and Language, Sleep and Consciousness, Memory](#)

### Session 16

#### Readings

- Respiratory system and skin: PR Bio p. 383-406 + BR Bio section 2 questions 73-100
- Practice Exam

#### Khan Academy Videos

- [Respiratory System, Integumentary System](#)



## CAMBRIDGE COACHING

### Session 17

#### Readings

- Self-identity and group identity
- BR Physics "Sound and Doppler Effect" + passages
- BR Organic Chemistry "Nitrogen Compounds" + passages

#### Khan Academy Videos

- [Social Psychology, Normative and Non-normative Behavior, Self-Identity](#)
- [Sound](#)

### Session 18

#### Readings

- Social structure
- Practice Exam

#### Khan Academy Videos

- [Social Behavior](#)
- [Social Interaction](#)
- [Demographics](#)

### Session 19

#### Readings

- BR Organic Chemistry "Organic Chemistry Laboratory Techniques" + passages
- BR Physics "Fluids and Solids" + passages
- Reproductive System: PR Bio p. 407-444 + BR Bio section 4 passages

#### Khan Academy Videos

- [Separations and Purifications](#)
- [Fluids at Rest, Fluids in motion,](#)

### Session 20

#### Readings

- BR General Chemistry "Gases" + passages
- Practice exam

#### Khan Academy Videos

- [Kinetic molecular theory of gases, Gas phase](#)



## CAMBRIDGE COACHING

### Session 21

#### Readings

- BR General Chemistry "Gases" + passages
- BR General Chemistry "Buffers and Titrations" + passages

#### Khan Academy Videos

- [Kinetic molecular theory of gases, Gas phase](#)
- [Electrostatics](#)

### Session 22

#### Readings

- Molecular Techniques: PR Bio p. 445-462
- Practice Exam

#### Khan Academy Videos

None

### Session 23

#### Readings

- BR General Chemistry "Thermochemistry" and "Kinetics" + passages
- PR Physics "Light and Optics" + passages

#### Khan Academy Videos

- [Principles of bioenergetics](#)
- [Light and electromagnetic radiation, Thin lenses, spherical mirrors, reflection and refraction](#)

### Session 24

#### Readings

- BR General Chemistry "Electrochemistry" + passages
- Practice exam

#### Khan Academy Videos

- [Periodic table, Redox reactions](#)