General Reading and Homework Suggestions

Reading/Review Before any Lecture:

Time management is critical when preparing for the MCAT. No one knows you better than you know yourself, so use an honest self-assessment before each lecture and *read only what you need*. If you know a subject well, then simply skim the sections in the text and try the multiple-choice questions in the reading section. This should be enough to get you ready for lecture. Read and/or skim the corresponding sections of the study books, taking notes on any topics that are not familiar. Generate a list of questions on concepts that come to mind during reading. Emphasize the topic checklists and goal lists on the first two pages of every section before you begin that section of the book.

Following Lectures:

The most important thing you can do to prepare for the MCAT is practice passages. Part of *doing a passage* is grading yourself, repeating questions you may have missed the first time, and then reviewing as many answer explanations as time allows. **LEARN from your MISTAKES by analyzing them**. We recommend that you break each section into three segments, working on short-term memory, long-term memory, and speed. You must be fast to do well on the MCAT.

Homework Phase I (within an hour or two of the end of lecture):

Do some of the passages (the suggested passages will be listed later in this document) using a pencil. Write a detailed explanation of how you eliminated wrong answers and/or zeroed in on the best answer. Once you have completed the passages, grade each question using the answer key following the last question (using the answer letters at the start of each answer explanation at the end of the corresponding chapters), marking incorrect questions using blue ink. Repeat any questions you got incorrect using blue ink. Grade them once again using the answer key, marking incorrect questions using red ink. Read the detailed answer and using red ink, write out how you should have answered the questions. This is very time consuming, but it presents a color-coded view of what you know well (pencil only), what you need to review a little (pencil and blue ink), and what you need to restudy (pencil, blue ink, and red ink). DO NOT worry about your timing on these first passages!

Homework Phase II (within a week of the end of lecture):

Time yourself on these passages with great accuracy, creating as realistic a testing environment as possible. Grade yourself using the answer key. Review any incorrect answers and questions that caused any uncertainty. Record the number of *content* errors, *careless* errors, and *question interpretation* errors you made. This will tell you where you need to improve most.

Homework Phase III (about a month or two before the MCAT, when you have free time):

Most of these passages listed in phase III cover both the subject in the corresponding section as well as some outside material. These are meant to test you at your ability to integrate multiple concepts. Time yourself, but even if you don't finish on time, keep going while noting the overtime issue. These passages should serve as a review of sorts.

Reading List and Homework Schedule General Chemistry Lectures

Stoichiometry, Solutions, and Solubility Lecture

Reading/Review Before Lecture:

Pages 3 - 30 of General Chemistry I (Stoichiometry and Solutions--Section I in General Chemistry)
Pages 184 - 198 of General Chemistry I (Solubility--Section III in General Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Beer's Law passage and Solubility Study passage from the In-Class Passages collection
2) Section I passages: 1, 2, 3, 6, 7, and 8; Section III passages: 7, 8, and 9

Homework Phase 2: Within a week of the end of lecture: Allot 51 Minutes for 6 passages and 39 questions

1) Dumas Experiment passage from the In-Class Passages collection
2) Section I passages: 4, 5, and 9; Section III passages 10 and 11

Homework Phase 3: Before the MCAT when you have free time:

1) Solute Concentration passage from the In-Class Passages collection
2) Section I passages 10, 11, 12, and Questions 87 - 100; Section III Questions 97, 98, and 100

Periodic Trends and Electron Energetics Lecture

Reading/Review Before Lecture:

Pages 83 - 118 of General Chemistry I (Atomic Structure--Section II in General Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Ionization passage from the In-Class Passages collection
2) Section II passages: 4, 5, 7, 8, and 9

Homework Phase 2: Within a week of the end of lecture: Allot 34 Minutes for 4 passages and 26 questions

1) Photoelectric Effect passage and Trifluorobromide passage from the In-Class Passages collection
2) Section II passages: 3 and 11

Homework Phase 3: Before the MCAT when you have free time:

1) Periodic Trends passage from the In-Class Passages collection
2) Section II passages 6, 10, 12, and Questions 96 - 100

Classical Experiments and Nuclear Chemistry Lecture

Reading/Review Before Lecture:

Pages 69 - 82 and 119 - 124 of General Chemistry I (Atomic Structure--Section II in General Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Isotopic Abundance passage from the In-Class Passages collection
2) Section II passages: 1 and 12

Homework Phase 2: Within a week of the end of lecture: Allot 35 Minutes for 4 passages and 27 questions

1) Ionized Balls passage and the Stable Nuclei passage from the In-Class Passages collection
2) Section II passages: 2 and 13

Homework Phase 3: Before the MCAT when you have free time:

1) X-ray Imaging passage from the In-Class Passages collection
2) Section II passage 14

Equilibrium and Kinetics Lecture

Reading/Review Before Lecture:

Pages 165 - 183 of General Chemistry I (Equilibrium--Section III in General Chemistry)
Pages 203 - 226 of General Chemistry II (Kinetics--Section IX in General Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Equilibrium passage from the In-Class Passages collection
2) Section III passages: 1, 2, and 6; Section IX passages: 1, 3, 4, 7, and 10

Homework Phase 2: Within a week of the end of lecture: Allot 72 Minutes for 8 passages and 56 questions

1) Nature of K_{eq} passage and Typical Rate Data passage from the In-Class Passages collection
2) Section III passages: 3, 4, and 5; Section IX passages 2, 5, and 6

Homework Phase 3: Before the MCAT when you have free time:

1) Catalyst Impact passage from the In-Class Passages collection
2) Section III passages 12, 13, 14, and Questions 99; Section IX passages 8, 9, and Questions 73 - 80

Acids, Bases, and pH Lecture

Reading/Review Before Lecture:

Pages 237-253 and 261-264 of General Chemistry I (Acids and Bases--Section IV in General Chemistry)
Pages 296-301 of General Chemistry I (Buffers and Titration--Section V in General Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Acid Definitions passage and Buffer passage from the In-Class Passages collection
2) Section IV passages: 1, 3, 5, 7, and 9

Homework Phase 2: Within a week of the end of lecture: Allot 44 Minutes for 5 passages and 34 questions

1) Acid Rain passage from the In-Class Passages collection
2) Section IV passages: 2, 4, 6, and 8

Homework Phase 3: Before the MCAT when you have free time:

1) Oxyacid/Haloacid passage from the In-Class Passages collection
2) Section IV passages 10, 11, 12, 13, and Questions 92 - 100

Titration Curves and Indicators Lecture

Reading/Review Before Lecture:

Pages 254-260 of General Chemistry I (Acids and Bases--Section IV in General Chemistry)
Pages 295, and 302-316 of General Chemistry I (Buffers and Titration--Section V in General Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Simple Titrations passage from the In-Class Passages collection
2) Section V passages: 1, 4, 7, 8, and 11

Homework Phase 2: Within a week of the end of lecture: Allot 71 Minutes for 8 passages and 55 questions

1) Titration Table passage and Polyprotic Titration passage from the In-Class Passages collection
2) Section V passages: 2, 3, 5, 6, 9, and 14

Homework Phase 3: Before the MCAT when you have free time:

1) Indicator passage from the In-Class Passages collection
2) Section V passages 10, 12, 13, and 15

Gases and Gas Laws Lecture

Reading/Review Before Lecture:

Pages 3 - 28 of General Chemistry II (Gases and Gas Laws--Section VI in General Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Expanding Gas passage and Ventilator passage from the In-Class Passages collection
2) Section VI passages: 1, 3, 4, and 7

Homework Phase 2: Within a week of the end of lecture: Allot 45 Minutes for 5 passages and 35 questions

1) Scuba Diving passage from the In-Class Passages collection
2) Section VI passages: 2, 5, 6, and 9

Homework Phase 3: Before the MCAT when you have free time:

1) Dry Box passage from the In-Class Passages collection
2) Section VI passages: 8, 10, 11, 12, 13, and Questions 94 - 100

Phases and Phase Changes Lecture

Reading/Review Before Lecture:

Pages 65 - 94 of General Chemistry II (Phases and Phase Changes --Section VII in General Chem)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Phase Diagrams passage and Desalination passage from the In-Class Passages collection
2) Section VII passages: 1, 4, 5, and 9

Homework Phase 2: Within a week of the end of lecture: Allot 56 Minutes for 6 passages and 44 questions

1) Supercritical Fluid passage from the In-Class Passages collection
2) Section VII passages: 2, 3, 6, 7, and 10

Homework Phase 3: Before the MCAT when you have free time:

1) Raoult's Law passage from the In-Class Passages collection
2) Section VII passages 8, 11, 12, and 13, and Questions 93 - 100

Thermochemistry and Thermodynamics Lecture

Reading/Review Before Lecture:

Pages 133 - 164 of General Chemistry II (Thermochemistry and Thermodynamics--Section VIII in Gen Chem)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Food Energetics passage and Thermodynamic Laws passage from the In-Class Passages collection
2) Section VIII passages: 1, 2, 3, 6, and 11

Homework Phase 2: Within a week of the end of lecture: Allot 46 Minutes for 5 passages and 36 questions

1) Energetics passage from the In-Class Passages collection
2) Section VIII passages: 4, 5, 9, and 10

Homework Phase 3: Before the MCAT when you have free time:

1) Thermodynamics passage from the In-Class Passages collection
2) Section VIII passages 7, 8, 12, 13, and Questions 93 - 100

Redox Chemistry and Electrochemical Cells Lecture

Reading/Review Before Lecture:

Based on Pages 257 - 280 of General Chemistry II (Redox Chemistry and Cells--Section X in General Chem)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Time vs. EMF passage and Electrolysis passage from the In-Class Passages collection
2) Section X passages: 2, 3, 12, and 13

Homework Phase 2: Within a week of the end of lecture: Allot 52 Minutes for 6 passages and 40 questions

1) Electrochemical Cell passage from the In-Class Passages collection
2) Section X passages: 1, 4, 7, 8, and 11

Homework Phase 3: Before the MCAT when you have free time:

1) Galvanizing passage from the In-Class Passages collection
2) Section X passages 5, 6, 9, 10, 14, and Questions 94 - 100

Reading List and Homework Schedule Physics Lectures

Translational Motion Lecture

Reading/Review Before Lecture:

Pages 3 - 32 of Physics I (Translational Motion--Section I in Physics)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Light Clock passage and Field Goal passage from the In-Class Passages collection
2) Section I passages: 1, 4, and 7

Homework Phase 2: Within a week of the end of lecture: Allot 43 Minutes for 5 passages and 33 questions

1) Pitching Machine passage from the In-Class Passages collection
2) Section I passages: 2, 5, 6, and 9

Homework Phase 3: Before the MCAT when you have free time:

1) Projectile Motion passage and Golf Club Analysis passage from the In-Class Passages collection
2) Section I passages 3, 8, and 10

Forces and Circular Motion Lecture

Reading/Review Before Lecture:

Pages 65 - 99 of Book I (Forces and Circular Motion--Section II in Physics)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Gravitational Force passage and Incline and Pulley passage from the In-Class Passages collection
2) Section II passages: 1, 2, and 7

Homework Phase 2: Within a week of the end of lecture: Allot 46 Minutes for 5 passages and 36 questions

1) Circular Motion passage and Pulley Systems passage from the In-Class Passages collection
2) Section II passages: 4, 6, and 8

Homework Phase 3: Before the MCAT when you have free time:

1) Threshold Angle passage from the In-Class Passages collection
2) Section II passages 3, 5, 9, and 10

Work and Energy Lecture

Reading/Review Before Lecture:

Pages 135 **-** 150 of Physics I (Work and Energy--Section III in Physics)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Thrill Ride passage and Rainfall Generator passage from the In-Class Passages collection
2) Section III passages: 1, 5, and 9

Homework Phase 2: Within a week of the end of lecture: Allot 45 Minutes for 5 passages and 35 questions

1) Energy Generation passage and Moving Box passage from the In-Class Passages collection
2) Section III passages: 3, 6, and 8

Homework Phase 3: Before the MCAT when you have free time:

1) Rollercoaster Energetics passage from the In-Class Passages collection
2) Section III passages 2, 4, 7, and 10

Momentum and Torque Lecture

Reading/Review Before Lecture:

Pages 187 - 200 of Physics I (Equilibrium and Momentum--Section IV in Physics)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Bullet and Momentum passage and Levers and Cranes passage from the In-Class Passages collection
2) Section IV passages: 1, 2, and 9

Homework Phase 2: Within a week of the end of lecture: Allot 43 Minutes for 5 passages and 33 questions

1) Ice Skating passage and Crane Operation passage from the In-Class Passages collection
2) Section IV passages: 3, 6, and 8

Homework Phase 3: Before the MCAT when you have free time:

1) Clay Ball Experiment passage from the In-Class Passages collection
2) Section IV passages 4, 5, 7, and 10

Periodic Motion and Waves Lecture

Reading/Review Before Lecture:

Pages 233 - 247 of Physics I (Periodic Motion and Waves--Section V in Physics)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Pendulum Experiment passage and Standing Wave passage from the In-Class Passages collection
2) Section V passages: 1, 4, and 7

Homework Phase 2: Within a week of the end of lecture: Allot 45 Minutes for 5 passages and 35 questions

1) Dual Springs passage from the In-Class Passages collection
2) Section V passages: 2, 5, 6, and 9

Homework Phase 3: Before the MCAT when you have free time:

1) Determining g passage and Deep Ocean Waves passage from the In-Class Passages collection
2) Section V passages 3, 8, and 10

Sound and Doppler Effect Lecture

Reading/Review Before Lecture:

Pages 3 - 18 of Physics II (Sound--Section VI in Physics)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Sound Detection passage and Doppler Effect passage from the In-Class Passages collection
2) Section VI passages: 1, 5, and 7

Homework Phase 2: Within a week of the end of lecture: Allot 44 Minutes for 5 passages and 34 questions

1) Bat Echolocation passage and Sound Resonance passage from the In-Class Passages collection
2) Section VI passages: 2, 4, and 9

Homework Phase 3: Before the MCAT when you have free time:

1) Organ Pipes passage from the In-Class Passages collection
2) Section VI passages 3, 6, 9, and 10

Fluids and Solids Lecture

Reading/Review Before Lecture:

Pages 51 - 72 of Physics II (Fluids and Solids--Section VII in Physics)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Balloons and Dirigibles passage and Blood Flow passage from the In-Class Passages collection
2) Section VII passages: 1, 6, and 10

Homework Phase 2: Within a week of the end of lecture: Allot 44 Minutes for 5 passages and 34 questions

1) Buoyancy Balance passage from the In-Class Passages collection
2) Section VII passages: 2, 4, 8, and 9

Homework Phase 3: Before the MCAT when you have free time:

1) Cannula passage and Toilets and Siphons passage from the In-Class Passages collection
2) Section VII passages 3, 5, and 7

Electrostatics and Electromagnetism Lecture

Reading/Review Before Lecture:

Pages 109 - 128 of Physics II (Electrostatics and Electromagnetism--Section VIII in Physics)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Hydrogen Atom passage and Mass Spectrometer passage from the In-Class Passages collection
2) Section VIII passages: 1, 4, and 7

Homework Phase 2: Within a week of the end of lecture: Allot 44 Minutes for 5 passages and 34 questions

1) Faraday's Law passage from the In-Class Passages collection
2) Section VIII passages: 2, 5, 6, and 9

Homework Phase 3: Before the MCAT when you have free time:

1) Lenz's Law passage and Proton NMR passage from the In-Class Passages collection
2) Section VIII passages 3, 8, and 10

Electric Circuits Lecture

Based on Pages 163 - 186 of Physics II (Electric Circuits--Section IX in Physics)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Resistors and Heating passage and Series vs. Parallel passage from the In-Class Passages collection
2) Section IX passages: 3, 6, and 8

Homework Phase 2: Within a week of the end of lecture: Allot 45 Minutes for 5 passages and 35 questions

1) Resistor Alignment passage from the In-Class Passages collection
2) Section IX passages: 2, 5, 7, and 9

Homework Phase 3: Before the MCAT when you have free time:

1) Circuit Experiment passage and Wheatstone Bridge passage from the In-Class Passages collection
2) Section IX passages 1, 4, and 10

Light and Optics Lecture

Reading/Review Before Lecture:

Pages 221 - 246 of Physics II (Light and Optics--Section X in Physics)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Colored Light Test passage and Different Lenses passage from the In-Class Passages collection
2) Section X passages: 1, 4, and 5

Homework Phase 2: Within a week of the end of lecture: Allot 45 Minutes for 5 passages and 35 questions

1) Critical Angle passage and Functioning of the Eye passage from the In-Class Passages collection
2) Section X passages: 2, 6, and 8

Homework Phase 3: Before the MCAT when you have free time:

1) Fiber Optics passage from the In-Class Passages collection
2) Section X passages 3, 7, 9, and 10

Organic Chemistry Lectures

Organic Structure Lecture

Reading/Review Before Lecture:

Pages 3 - 54 of Organic Chemistry I (Structure, Bonding, and Reactivity--Section I in Organic Chemistry)
Pages 92 - 117 of Organic Chemistry I (Structure Elucidation--Section II in Organic Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Fused Rings passage and Typical Molecules passage from the In-Class Passages collection
2) Section I passages: 1, 2, 3, 6, 7, and 8; Section II passage: 1

Homework Phase 2: Within a week of the end of lecture: Allot 43 Minutes for 5 passages and 33 questions

1) Physical Properties passage from the In-Class Passages collection
2) Section I passages: 4, 5, and 9; Section II passage 2

Homework Phase 3: Before the MCAT when you have free time:

1) Natural Fatty Acids passage from the In-Class Passages collection
2) Section I passages 10, 11, 12, 13, and Questions 92 - 100; Section II passage 3

IR, UV, and ^{1}HNMR Spectroscopy Lecture

Reading/Review Before Lecture:

Pages 118 - 144 of Organic Chemistry I (IR, UV-Visible, and NMR Spectroscopy--Section II in O Chemistry)
Pages 262 of Organic Chemistry II (Chemical Tests --Section VIII in Organic Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Spectroscopy Data passage and Spectroscopy passage from the In-Class Passages collection
2) Section II passages: 5, 9, and 12

Homework Phase 2: Within a week of the end of lecture: Allot 35 Minutes for 4 passages and 27 questions

1) Product Analysis passage from the In-Class Passages collection
2) Section II passages: 4, 6, 7, and 13

Homework Phase 3: Before the MCAT when you have free time:

1) Structure Elucidation passage from the In-Class Passages collection
2) Section II passages: 8, 10, 11, and 14 and Section VIII passage: 12

Stereochemistry and Nucleophilic Substitution Lecture

Reading/Review Before Lecture:

Pages 183 - 218 of Organic Chemistry I (Stereochemistry--Section III in Organic Chemistry)
Pages 91 - 118 of Organic Chemistry II (Carbohydrates--Section VI in Organic Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

Section III passages: 1, 3, 5, 6, and 7; Section VI passages: 1, 3, 5, 6, and 12

Homework Phase 2: Within a week of the end of lecture: Allot 89 Minutes for 10 passages and 69 questions

Section III passages: 2, 4, 8, 9, 10, and 11; Section VI passages 2, 7, 11, and 13

Homework Phase 3: Before the MCAT when you have free time:

1) All four passages from the In-Class Passages collection
2) Section III passages 12, 13 & Questions 92-100; Section VI passage 4, 8, 9, 10 & Questions 92-99

Elimination, Hydrocarbons, and Terpenes Lecture

Reading/Review Before Lecture:

Pages 257 - 286 of Organic Chemistry I (Hydrocarbon Reactions--Section IV in Organic Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Diels-Alder passage from the In-Class Passages collection
2) Section IV passages: 1, 3, 7, 10, and 13

Homework Phase 2: Within a week of the end of lecture: Allot 51 Minutes for 6 passages and 39 questions

1) Alkane Elucidation passage and Pheromones passage from the In-Class Passages collection
2) Section IV passages: 4, 6, 8, and 12

Homework Phase 3: Before the MCAT when you have free time:

1) 1,2- versus 1,4-Addition passage from the In-Class Passages collection
2) Section IV passages 2, 5, 9, 11, 14, and Questions 93 - 100

Carbonyl Chemistry Lecture

Reading/Review Before Lecture:

Pages 3 - 48 of Organic Chemistry II (Carbonyl Chemistry--Section V in Organic Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Glycolysis passage from the In-Class Passages collection
2) Section V passages: 1, 4, 5, 10, and 11

Homework Phase 2: Within a week of the end of lecture: Allot 52 Minutes for 6 passages and 40 questions

1) Fatty Acid passage and Carbonyl passage from the In-Class Passages collection
2) Section V passages: 2, 6, 9, and 13

Homework Phase 3: Before the MCAT when you have free time:

1) Malonic Ester passage from the In-Class Passages collection
2) Section V passages: 3, 7, 8, 12, 14, and Questions 95-100

Amino Acids and Proteins Lecture

Reading/Review Before Lecture:

Pages 159 - 202 of Organic Chemistry II (Nitrogen-Containing Compounds--Section VII in O Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Hofmann Rearrangement passage from the In-Class Passages collection
2) Organic Chemistry Section VII passages: 1, 5, 8, and 12

Homework Phase 2: Within a week of the end of lecture: Allot 54 Minutes for 6 passages and 42 questions

1) Affinity Columns passage and the Electrophoresis passage from the In-Class Passages collection
2) Organic Chemistry Section VII passages: 2, 4, 9, and 11

Homework Phase 3: Before the MCAT when you have free time:

1) Sequencing passage from the In-Class Passages collection
2) Organic Chemistry Section VII passages: 3, 6, 7, 10, 13, and Questions 97 - 100

Organic Chemistry Lab Techniques Lecture

Reading/Review Before Lecture:

Pages 241 - 266 of Organic Chemistry II (Laboratory Techniques--Section VIII in Organic Chemistry)

Homework Phase 1: Within an hour or two of the end of lecture:

1) Enantiomer Isolation passage from the In-Class Passages collection
2) Section VIII passages: 1, 4, 6, and 10

Homework Phase 2: Within a week of the end of lecture: Allot 54 Minutes for 6 passages and 42 questions

1) Chemical Tests passage and Distillation Experiment passage from the In-Class Passages collection
2) Section VIII passages: 2, 7, 9, and 11

Homework Phase 3: Before the MCAT when you have free time:

1) Chromatography passage from the In-Class Passages collection
2) Section VIII passages: 3, 5, 8, 13, and Questions 94 - 100