Marianopolis Plan for Success

SCIENCE

A GUIDE FOR STUDENTS BY STUDENTS

Marianopolis College
Mathematics and Science Departments

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Acknowledgements

This is one of the many projects that Marianopolis College has initiated under its Plan for Success to foster greater student achievement. It is evidence of our commitment to our students and their success.

Because we are a student-centered college, it is only natural that such a handbook should be written by students for other students. We are very grateful for the hard work and commitment displayed by Alan Doucet, Gayle Levine and Scott Pedvis, members of the Class of 2003 and authors of the first edition in that same year. We also thank Alyssa Power '08 and Alessandro Power '09, who updated this version for Science students.

Several current and former faculty and staff members were involved in this project, including Mary Allen, Christian Corno, Charlene Milne and Brian Webb. We are grateful to all who helped with this project in all its various stages.

We hope that this handbook will be helpful to many current and future students.

Laura Paris
Learning Resources Centre

Introduction

Welcome to Marianopolis College! You are one of many lucky students attending this wonderful institution. For the next two years, you will have an opportunity to have a tremendous learning experience, both inside and outside the classroom. You will likely find that Marianopolis will be a significant change from high school. Here, you have more freedom and independence. However, more is expected from you in terms of quality of work and personal maturity.

As a Science student, whether in Health or Pure and Applied, you will be taking courses falling in four broad categories: Biology, Chemistry, Mathematics and Physics. While these four disciplines differ considerably, they are fundamentally interrelated. Therefore, success in one field can lead to success in the others. If you put in the effort, we know that you will succeed academically, make new friends and participate in activities that will enrich your Marianopolis experience.

When assignments and papers are piled high and you think you will never be able to pass one more midterm, don't panic. We have all been there. Hopefully, our insights and advice in the following pages will assist you in avoiding this situation. They have been drawn from our own experiences at Marianopolis and from the several helpful study guides and handouts cited in the bibliography.

The first step to academic success at Marianopolis is to read this handbook, which has been written for new students by graduates of your program. In the following pages, we have outlined tips and strategies to facilitate your transition from high school to CEGEP.

No matter how strong a student you may be, this handbook can help you. While these tips are no substitute for your own hard work, we hope they will save you time and make your life easier.

Good luck and have a wonderful experience at the College!
Sincerely,

Alan Doucet, Gayle Levine and Scott Pedvis
Class of 2003

Top Ten Tips

1) Attendance. Go to class! There are many reasons why skipping class may be detrimental to your academic performance. Some reasons are:

- Certain topics may not be covered in your textbooks and may only be covered in class.
- By being in class, you can pick up on what the teacher feels is important and what will likely be on tests or exams. Coming to class will save you time in the long run.
- The class notes will make more sense to you if you take them yourself rather than copying a friend's. In addition, notes in your own handwriting serve to prompt memory.
- You may be considered in poor academic standing if you exceed a certain number of absences. This you don't need!
- Most teachers notice who comes to class and who does not, even if they don't take attendance. Don't expect your teacher to bend over backwards later in the term if you have not been attending class or have been disruptive.
- Participation in the class discussions, debates and interaction is an important part of the learning experience. If you are not there, you cannot participate.

Before class

- Re-read your notes to refresh your memory. This is especially important because most teachers will not review the material of the previous class and will expect you to be familiar with the subject matter.

When you are in class

- Try to be attentive and take good notes (check out Tip #4)
- Should you happen to become bored, there are several steps you can take to alleviate this.

  Try to focus on your note-taking. Force yourself to take more notes rather than fewer notes and don't just copy what is on the board.

  Remind yourself that, if nothing else, you still need this information to pass the course.

  Sit at the front of the class. It's often easier to concentrate there.

  If all else fails, sit up straight and try and fool your brain into thinking you are interested. (Prof. Skerry)

  Turn off your cell phone and don't chatter to your classmates. Do not wander out and back in during the class. You don't want the teacher to remember you for the wrong reasons!

If you have to miss class for whatever reason, be sure to:

- Inform the teacher in advance, if possible.
- Get the notes you missed from a reliable source or sources.
- Re-read these notes and try to understand the material.
- Check to see if any assignments, projects or handouts were distributed during the class.
- See your teacher with any uncertainties or questions you may have. But don't expect to get your own private lecture. And whatever you do, don't begin with, "Did I miss anything important today?"

Remember that in CEGEP, skipping tests for unacceptable reasons (and you know what they are) is not grounds for a re-write. Make-ups are not automatic. Teachers will give a zero if you do not have a valid explanation for why you missed the test or if you ignored the protocol for informing them. If your reason for missing is foreseeable, and in your opinion valid, speak to your teacher beforehand and make sure he or she accepts your reason. It will help if you are in good standing, i.e., your attendance and behaviour have been excellent.

2) Organization

One of the most important keys to success is getting yourself organized. So **plan ahead**. The pace of life at Marianopolis changes very quickly. If you know that a test or assignment is approaching, do everything in your power to reduce the amount of work you will have to do at the last minute.

- **Always write down dates for assignments, tests, papers, meetings, projects and deadlines in your Agenda.** The Agenda is given to you free, so use it! It contains all kinds of useful and important information about college life and it indicates holidays, upcoming events and other important dates, such as teacher-student days. It's an important resource so keep it close by.
- **Make yourself a to-do list at the beginning of every week** and cross off the items as you accomplish them.
- **Prioritize your work**. An assignment worth 20 marks requires more time and effort than one worth 5.
- **Do something every day**. Don't let a single day go by without doing something school-related. If you get stuck or bored with one project, go on to another.
- **Use your breaks wisely**! Study, see teachers or do research during your breaks. The Library offers quiet space to do work and you can use the computers in the computer labs, Library and TLT to work on papers.
- **Do something to get started** the day an assignment, project or essay is assigned, even if it is a small bit, like writing an outline or starting the research. Getting the ball rolling is the first step! If you are stuck, see your teacher.
- **Attempt to establish a routine**. Although sometimes difficult, a routine can keep you on track and focused.
- **Break down tasks into small mini-tasks.** For example, don't write "study for Biology" in your Agenda. Instead, write "read ch. 6 of the Biology textbook and

study the Protein Exportation System." This will make the work seem more manageable.
- **Make time for yourself**. An important part of CEGEP is socializing, meeting people, making new friends and having fun. However, be sure to leave yourself some down time for relaxation, hobbies and sleep. Getting yourself organized will allow you to do all these things and get those good grades, too. It is possible!

3) Office hours

- All teachers should have their office hours posted on their doors and in their course outlines.
- If you know that you need to meet a teacher and your schedule does not coincide with the posted office hours, contact him or her in class to arrange a meeting.
- Take advantage of office hours. Drop by whenever you need to for some help or advice. Part of your teacher's job is to assist you in succeeding at Marianopolis.
- Don't be intimidated by the idea of speaking with your teachers. There is no reason to be embarrassed if you are having difficulty in a particular subject. Regardless of how well you are doing in a course, if you put in an effort, teachers will be more than willing to help you. Meeting with them during their office hours is one way to show you are interested and want to do well. They are there to help you but the first step is yours.
- During the December and May exam periods, teachers' office hours will change. Make sure you are aware of their new times.
- Some teachers may be willing to answer short questions by Omnivox. Check with the teacher.

When seeing a teacher during office hours, be sure to come prepared. This means:

- Come with notes and questions.
- Give the teacher enough time to help you. If the office hours end at 1:30, don't show up at 1:28 with 11 questions.
- Don't arrive expecting the teacher to explain the whole course to you, especially if your attendance record is less than adequate.
- Avoid saying, "I don't understand anything!" Be focused and polite.

The majority of teachers share offices. If you do not feel comfortable meeting in front of your teacher's office-mate, ask him or her to arrange a more private meeting at the College.

4) Note-taking

In class:

- Make sure you are prepared to take notes for every class. Have paper and pens with you.

- Have a separate binder or notebook for each subject. Or, at the very least, each subject should have its own section in a notebook. Often, one Science course will require multiple copybooks.
- Mark off any terms or concepts that a teacher emphasizes. Some teachers will actually say, "This is important" or "This is a typical final exam question," so make sure you write down what they say.
- Use abbreviations in your notes (for example, use MVT as an abbreviation for The Mean Value Theorem, Def^{n} for definition and Sol^{n} for solution).
- Look for "signal" words from the teacher, such as "the three main reasons why," "her most important findings were," "you need to know this," "be aware of this" and "this concept is important."
- Often, in the last few minutes of a class, teachers will summarize what they have discussed. Instead of packing up your books to be the first one to leave, ensure that you have taken notes on everything the teacher has discussed.
- If you realize that you do not have notes on some of the material covered in the lecture, either speak to the teacher immediately following the class or obtain the notes from a reliable student.
- If there is a term or concept that you do not understand, do not hesitate to ask the teacher in class to further explain the material. However, if you realize that you still need clarification after the second explanation, see the teacher as soon as possible after class. If you don't, you will be confused when you re- read your notes.
- Remember that the more time a teacher spends on an idea or concept, the more likely it is to appear on a test.
- Make sure to take note of any material written on the board or shown on an overhead. Don't fall asleep during videos! Taking notes on the video can help maintain your focus!
- Leave spaces in your notes if you cannot keep up. If you miss a topic, do not fall behind. You can always fill in the missing information after class.
- Be very careful when lending your notes to someone else. Make sure you will get them back in good order and in time for you to do <u>your</u> studying.

Textbooks

- Your teacher will tell you what textbooks, course packs or other material you are expected to buy. Check to see if there are secondhand copies available but be sure to get the right edition. Ask if you are expected to bring the book to class and if the text is available on reserve at the Library. Don't forget to write your name in your textbook.
- Ask the teacher if an older edition would suffice, as this can save you money.
- Familiarize yourself with the layout of your book – especially indices, indexes and tables of data usually found at the back.
- It's often helpful to take notes on what you have read. Some people find using a highlighter useful but don't highlight everything, just the really important stuff.
- Keep up with the reading! That way you will not be stuck the night before the test with 300 pages to read. Use information in textbooks in conjunction with your class notes. If you do not understand something

being presented in the text, check to see if your class notes can help you understand or vice versa. Use the index at the back of the book and look for glossaries that explain and define terms with which you may not be familiar.

- Make sure you pay particular attention to assigned material in the textbook that was not covered in class.
- Look for bolded or italicized terms or concepts in the text.
- Check to see if there is a chapter introduction and read it carefully.
- Make sure you read the chapter summaries at the end of each chapter as well.
- Often texts have lists of important terms at the end of each chapter. These lists are a helpful way to review and to test your knowledge and comprehension.
- Attempt to understand the material, rather than memorize it.
- Chemistry, Math and Physics textbooks have graphs. Make sure you understand them and can reproduce them.
- Don't forget the material in boxes. It's important too.
- Some textbooks have their own websites. Often these sites contain both interesting and useful material, including sample test questions. Try and do a few practice questions from each chapter.
- Some text books are sold with study guides. These may contain sample exercises and can be very useful.

5) Studying

We cannot reiterate enough the importance of **understanding** rather than memorizing. For example, a Math textbook may present two graphs, one with a function and the other with the derivative of that function. Then, when test time rolls around, your teacher may ask you to compare a function and its derivative. If you **understand** the material, you will be able to answer this question with ease. However, if you have only memorized the material, this question can give you a tremendous amount of difficulty. At the CEGEP level, you are expected to be able to explain, analyze and synthesize information. You will not get by just by memorizing! Biology, however, is information intensive. In this subject, understanding the material will aid you in memorizing. There is a lot of memorizing to be done, so try to find memorizing techniques that work well for you. **Mnemonics**, for instance, are useful devices to help remember information.

For instance, to help learn the organization of living organisms (**K**ingdom, **P**hylum, **C**lass, **O**rder, **F**amily, **G**enus, **S**pecies), a useful mnemonic is **K**ing **P**hilip **C**omes **D**own **F**or **G**eorge's **S**word.

- **Set study goals**. Remember, Marianopolis is a challenging school. It is virtually impossible to get 100% on each test. "Strive for excellence, not perfection." (Prof. Skerry) Goals allow you to break down a large amount of material into more manageable pieces.
- **Make a study schedule suited to your learning habits**. If you are a morning person, try to study the hardest material in the morning.

- **Study in a specific place and away from distractions**. Make sure your study area has adequate lighting and is comfortable but not so comfy that you want to take a nap! The Cafeteria is a good place to meet your friends but probably not the best place to study. Likewise, studying outside may help your tan but probably won't help your grades. The Library is a great place to study.
- **Take short breaks**. If you find yourself getting tired while studying, do a few stretches, get a snack or take a short walk.
- **Study in short intervals**. Students often remember what they studied first and last. By studying in short 30-minute intervals, for example, rather than two- hour stretches, you will have more "beginnings" and "ends." (Prof. Skerry)
- **Avoid cramming**. Although this may have worked in high school, it is much harder in CEGEP where tests cover more material.
- **Prepare in advance**. You should know when most of your tests are by looking at your course outlines. If, in August, you see that during the week of October
  20 you have four tests, make sure you allocate enough time to study for each test.
- **Study with a serious study partner**, not a goof-off, if you are into studying with others.
- **Test yourself**. Have a partner make up some questions for you and see if you can answer them. Your Chemistry, Math and Physics textbooks all contain practice problems, with the answers to the odd problems given at the back of the book. The Biology textbook and accompanying CD-ROM have many multiple choice questions for each chapter. You may also ask your teacher for some extra problems, if necessary. Finally, in the Library there are extra textbooks for additional practice as well as complete solution guides for some texts.
- **Reward yourself when you study**. After reading a chapter or completing 10 practice problems at the end of a chapter, for example, check out your favorite TV show or phone a friend and get caught up on the news.

6) Test-taking

At Marianopolis, courses often have two or three tests per semester and one final exam, cumulative or not. It is not unusual to have more than one test on the same day and many tests in the same week. To help you achieve the best possible test results, you should begin by:

- Reading the instructions carefully.
- Looking over the test once, to see how much each question is worth and how you should budget your time.
- Remembering to breathe comfortably.

In general, when writing the test:

- Try to be as neat as possible. Write legibly and number each question clearly.
- Budget your time. Look at how much a question is worth, and write your answer accordingly in terms of length, content and examples.

- Avoid second-guessing yourself.
- Be careful with units. Before the test, make sure you understand which units apply to which equations. For instance, in the equation F= ma, the force will only be given in Newtons when the mass is given in kg and the acceleration in m/s^2. Therefore, if the mass of an object is given in grams it is necessary to convert this value to kilograms.
- If you are unsure of an answer, don't dwell on that question. Leave it and move on. However, be sure to remember you left a question blank so you can return to it later. Sometimes information you need to help you answer a question will appear somewhere else in the test or exam. Also, once you start writing, you may recall the answer.

Writing multiple choice tests:

- Eliminate any answers you know are incorrect.
- Check for grammatical inconsistencies. For example, a question may refer to a single person but one answer may be phrased in the plural referring to more than one person. Obviously, in this case, the grammatical inconsistency will alert you that the answer is wrong.
- Before looking at the possible answers, try to answer the question yourself.
- If you do not know the answer, remember: answers with words such as "always" or "never" are often (but not always) wrong; answers that are qualified are often right. Qualified answers frequently have words such as "often" and "sometimes" included in them.
- Generally speaking, of the four possible answer choices: one answer will be obviously incorrect; one will appear correct if you haven't studied; one will be partially correct (however, it may not be the best answer, which is often what you will be asked to choose); and one will be correct.
- Avoid second-guessing your teacher. Don't think that if the teacher has put three correct A's in a row, that the next answer cannot be an A.
- Remember that research shows that students gain more than they lose by changing their first multiple-choice answer if they suspect that their initial answer is incorrect.

When writing an essay test:

- Read the instructions carefully before beginning.
- Look over the entire test and see how many questions you are required to answer.
- Read each question carefully, several times, and make sure you know exactly what is being asked of you.
- If time permits, make a brief outline listing any points you want to mention in your essay and in which paragraphs you want to mention them.
- When writing your essay, read back what you have written every few minutes to make sure you are on track and still answering the question.
- Make sure you write in paragraphs, with proper spelling and punctuation.
- Write legibly! If a teacher can't read your handwriting, he or she can't mark your essay. Besides, a neat answer will make a much better impression than a messy one.
- Use the vocabulary of the discipline when writing your essay.

- Do not pad your answers. You know what we mean!
- Where possible, try and give more detail than less, as long as the details you are giving are relevant and correct.
- Try to support your ideas with original examples, where possible.
- When you are finished your essay, make sure you read it over before you hand it in! Check for spelling, punctuation and sentence construction.
- If time is running out and you have a lot more to write, use point form for the remainder of the exam.
- Make use of all the time available.

When doing calculations:

- Make sure you lay out your calculation so your teacher can see what you have done. Even if your answer is wrong, there may be partial marks for intermediate steps.
- Watch out for signs, significant figures and units.
- Check to see if your answer makes sense.
- Make sure you copy the value from your calculator correctly onto your answer.

After the test:

- When you get your test back, go over it carefully and see your teacher, as soon as possible, if you have any questions.
- If your teacher asks to see you, go as soon as possible.
- Reflect on your results and where you could improve for the next test.

7) Time-management

- Remember the semester is only 16 weeks and the time will fly by. Teachers often move at a fast pace and it is very easy to fall behind. Make sure you do everything possible to stay on top of things.
- If you have the time to work on something, do it! You will only be busier later in the term.
- Because the majority of teachers give between two and three term tests a semester, not including final examinations, they often all fall within the same one- or two-week period. Ensure that you prepare in advance for this barrage of tests.
- In your Science-specific courses, there are often weekly assignments and quizzes, especially in Chemistry, Math and Physics. These assignments help you to understand the material and show you which areas you have the most difficulty with, so it is crucial that you complete them. Be sure to start the assignment soon after it has been given out, so that you can ask your teachers questions throughout the week.
- Your non-Science courses often do not have such weekly assignments. Therefore, the work that is given out is more substantial. It may be a paper, essay or some other type of assignment. Do not leave such work to the last minute, because it will be worth considerably more than smaller assignments.

8) Preventing problems

Here are some warning signs that you may be in jeopardy of doing poorly in a course:

- Everyone in the class seems to grasp the concepts while you are still struggling.
- You are getting grades that disappoint or shock you.
- Your grades are well below the class average.
- You get a poor mid-term assessment report.
- You are unmotivated and skipping classes.
- If you are taking a course other than Latin or Greek and you don't understand what the teacher is saying, you need help!

The key here is anticipating problems, facing up to reality and doing something about it immediately! Be proactive, seek out help. Teachers are usually very glad to spend some time with a struggling student.

Some places to get help:

- **Your teacher**: The instructors are there to help you and they want you to succeed.

- **Department Chair**: If your teacher can't help you, for whatever reason, you can speak with the chair of the department. The chairs' names are listed in the Agenda.

- **The Associate Academic Dean**: The Associate Academic Dean deals with students who are on probation due to their poor academic standing and those who are experiencing extenuating circumstances that may affect their performance or course load. If you are a student with a serious illness or serious situation you should contact the office of the Dean as early as possible in the term; appointments can be made in Room A-209.

- **Adapted Services Counselor**: If you have a diagnosed disability you can arrange an appointment with the Adapted Services Counselor via Omnivox. Disabilities include physical or psychological conditions, including but not limited to AD(H)D, Learning Disabilities, Dyslexia, Generalized Anxiety Disorder and Depression. Visit marianopolis.edu/accessability for additional information regarding the AccessAbility Services Centre.

- **Peer Tutoring**: This resource is offered in a variety of courses. Basically, it's students helping students and it has proven very helpful to those who need that extra bit of help. And best of all – it's free! Apply via marianopolis.edu/peertutoring or visit the friendly staff at the Learning Resources Centre in Room F-317.

- **Counseling Services**: This strictly confidential service can help you with personal or family problems and with study skills, time-management and interpersonal relationships. Appointments can be made at Student

Services. marianopolis.edu/counseling

- **Health Services:** If you are hurt or don't feel well, go to A-166, where the school nurse and the Marianopolis First Aid Team offer free care as well as health-related information.

- **Academic Advising**: Go here if you have questions regarding university requirements, program requirements, difficulties with courses, your overall course load or summer school. marianopolis.edu/academicadvising

- **Student Services**: If you don't know where to begin or whom you should see for help, Student Services is the place to go. If they can't help you, they will refer you to someone who can. They can also help you with minor problems like locker hassles or headaches (sometimes caused by locker hassles!). Student Services also sells some supplies and has a lost and found. If you have lost your textbook or your calculator, check at Student Services. It may be waiting for you there. marianopolis.edu/studentservices

- **What's Up:** This aptly named newsletter is published every Monday and is a guide to what's up at the College that week. In addition to information about clubs, sports and other student life activities, it has important academic information including announcements concerning various deadlines and Honours presentations. Study skills workshops and Learning Resources Centre activities are also listed. The College assumes you will check it out and read it carefully. marianopolis.edu/whats-up

9) Resources

Marianopolis has a wide variety of resources at your disposal. Use them! And remember to have your Marianopolis ID card with you at all times on campus.

Library: The Marianopolis Library has over 50,000 books, periodicals, films, CDs and other material that students need to do their projects, papers and assignments. The Library's online offerings are your gateway to electronic databases where you can access journals, newspaper articles, books, reference articles, films and art work. The Library is a wireless environment, so bring your laptop or use one of the Library computers. There are also photocopiers and printers. In addition, the Library is a wonderful place to study and to start when you need to do research. If you need help finding a book or want to learn how to use the journal databases, don't hesitate to ask the friendly librarians for help. The Librarians can also show yow how to properly cite work and thereby avoid plagiarism, which is a serious offense. For more information about plagiarism, read the Institutional Policy for the Evaluation of Student Achievement (IPESA).

Omnivox: marianopolis.omnivox.ca is where you can book appointments with Academic Advisors, view your course schedule, access documents, get assignments posted by teachers, check your grades, and contact teachers and fellow students via Messaging in Omnivox (MIO). It is highly recommended that students check Omnivox at least once a day to read any MIOs or access assignments posted by their teachers.

TLT (A-358) – Teaching & Learning Technologies: This is where you can find digital video cameras, digital cameras, video editing equipment (iMacs), voice recorders, boomboxes, portable amplifiers, microphones, USB memory keys and more. You can book equipment online and find the Language Lab, which can be used when it is free.

Computer labs: Any word-processing, printing or internet research can be done in the two computer labs located on the fourth floor. Always have your Student ID with you while in the labs. Make sure to check the schedules outside the labs to see when they are free.

Fitness facilities: Many students find that working out can reduce a lot of their stress. Marianopolis has a fitness center, spacious and contemporary dance studio and double gymnasium. The fitness facilities are open to all Marianopolis students. Before you decide to workout, be sure to check for the available free times, which are posted by the facilities.

10) HAVE FUN!

There is so much more to Marianopolis than just classes, assignments and final exams. **Don't forget to have fun and make friends**. Just don't lose sight of your ultimate academic goals! Marianopolis has dozens of clubs, activities and sports teams. In addition, there are trips during spring break, end-of-semester parties, talent shows, plays, special lectures and much more. To find out more about any activity at Marianopolis, check out at Student Services, watch for flyers posted around the school and consult What's Up.

Contrary to popular belief

Getting into Marianopolis does not guarantee success. You will have to work hard.

- Having done very well in high school with little work does not necessarily mean that you will do as well at Marianopolis with an equal amount of effort.
- Marianopolis is a post-secondary institution that prepares students for university. You will therefore be treated more like a university student, rather than a high school student. Likewise, **college-level work** will be expected from you.

You need to retain much of the material that you learn in your courses.

- Many courses build upon one another. Obviously, you need to have a good foundation in Calculus I, for example, to do well in Calculus II and III. Within a given course, a grasp of the early material is often essential to the understanding of subsequent material. Spend some time reviewing notes from a previous course at the start of the new term.

- The *Épreuve synthèse* is a **mandatory** requirement for obtaining a Diploma of Collegial Studies. When completed successfully, a passing grade for the *Épreuve synthèse* will be entered on your record. In the Marianopolis Science program, the *Épreuve synthèse* is an **interdisciplinary project** designed to show that you have successfully attained the general goals of the Science program. It can be completed through a laboratory apprenticeship, Robotics, science fair or through one of your fourth semester Science elective courses where an integrative project will be assigned.

- Another required component of the *Épreuve synthèse* is that you write a special kind of summary called a **descriptive abstract** on the integrative project that you have been assigned. The summary is to be typed and approximately 100-150 words in length. This abstract is to be submitted to the teacher responsible for your *épreuve* who will grade it on a pass/fail basis. You can find helpful information by searching for *Épreuve synthèse* at marianopolis.sirsidynix.net.

- All students must also pass an **English Exit Exam** from the Ministry of Education. This is done after completing your third English course. For further details, speak to your English teacher.

The first and last classes of a course are very important.

- During the first couple of classes in a course, the teachers hand out the course outline, as well as discuss what the course requirements are and what is expected of you. It is at this time when you really need to buckle down because if you let yourself fall behind at such an early stage, it will become more and more difficult to catch up. This is the time to establish good study habits and to get organized.

- The last few classes are also crucial because teachers will generally discuss the format of the final exam and what it will cover. They may also review material that they believe to be important and that may be on the exam.

The course outline is not useless!

- The course outline is a valuable tool to help you plan your semester. It contains important information such as test dates, due dates for assignments and the two possible grading schemes in Science courses. The course outline may also tell you your teacher's office hours, phone extension and email address. Finally, objectives and expectations are

outlined here. Remember that teachers set tests and exams that reflect these objectives and expectations.

You should not rely too heavily on one marking scheme.

- In all of your Science courses you will have two marking schemes. Your final grades will be determined by the most favorable scheme. It is important not to rely solely on the marking scheme that weighs the final exam heavily (and consequently puts less emphasis on midterms). You should try your best during the semester to do well on the midterms and assignments in case you do poorly on the final exam.

Everyone will struggle at one point or another.

- Enough said!

You don't have to like a teacher or a course to do well.

- While it's nice when you have the ideal teacher or are in your favorite course, it cannot always be. Sometimes your teacher's teaching style does not match your learning style. Don't get discouraged or frustrated. Persist and persevere! Use the textbook or find a study partner. Don't drop the course or fail it just because you do not like the teacher or the material. Repeating a course you failed will not be more fun.

The teacher does not fail "you" on your test.

- Teachers are professionals who for the most part have evaluated the work of many students before you. The mark assigned reflects their evaluation of the work you submitted and not of you as a person. If you did not do well on an evaluation, meet with your teacher to plan what you can do to improve next time.

Study tips for the core Science courses

Biology

Biology, unlike Chemistry, Math and Physics, is information-based rather than problem-based. Therefore, most of your time will be devoted to understanding and memorizing the material rather than doing practice problems. The amount of material you will have to learn can seem overwhelming, but if you **study efficiently** and follow these steps it is manageable.

It should be noted here that the textbook is a useful study tool that should not be ignored. However, the textbook presents the material in much greater detail than is necessary (this is especially true for BIO-NYA, the first biology course you will take).

Therefore, if you encounter something that is not in your notes or is in much greater detail than what was discussed in class, you probably do not have to know it but you might want to confirm this with your professor. The greater detail provided makes studying the less detailed notes easier and the **diagrams** in the book are useful for visualizing new or difficult concepts. There are excellent review questions at the back of each chapter.

Here are some tips for studying Biology:

Stay awake and attentive in class. Even if you are tired, force yourself to pay attention during class. Lectures are the first time the material is being presented to you and are therefore the first step toward understanding and knowing the concepts presented.

Understand the material. It is really important that you understand what you are studying. Having a strong grasp of the material will make memorization much easier because you understand where the information is coming from.

Terminology is important. Biology courses will present you with a wealth of new words and concepts. Studying these terms is crucial to understanding the material as a whole.

Pay attention when you read: When reading your notes or the textbook, you should read the topic headings and skim the sections so that you mentally prepare for the material you will be covering. At the end of each page, you should briefly quiz yourself to make sure that you remember what you have read. When you find that you cannot do this, it might be time for a short break. Reflecting on the material after each page ensures that you are **actively engaged** when reading the material.

Take smart study breaks. If you suddenly find yourself unable to absorb any more material, then it is time to take a break. Even a short, 10-minute break can be highly refreshing and can put you back in a studying mood. However, you should not take *too* long a break or you will not want to return to your books. **Hint:** to prevent yourself from losing track of time, set an alarm clock for 10 minutes to signal when you must return to studying.

Develop good study habits. As with any subject, memorizing Biology material is easier when done over a **long period of time** rather than crammed in the last day or two before the midterms or final. Scheduling your time efficiently is key. For instance, taking a few minutes following class to review lecture material helps to refresh the information before the forgetting process can begin. These short review sessions will make the material more familiar to you when you sit down to study it.

Find the memory aids that work for you. Find ways to make the material stick with you. For instance, visualizing the material or developing mnemonic memory techniques is extremely beneficial in Biology.

Do not be afraid to ask your teacher questions. When going over the material, make a running list of questions that you wish you ask your teacher during office hours.

Multiple choice questions. Make sure that you have a firm grasp of the material

before attempting the multiple choice questions at the end of the textbook or on the CD that comes with your textbook. These questions are useful because they test your understanding of the material and highlight the areas with which you have the most trouble (and therefore need to review before the test).

Here are some tips for studying Chemistry, Math and Physics:

The studying techniques employed for Chemistry, Math and Physics are nearly identical. If you follow the following seven steps, you should find yourself successful in each of these courses.

Pay attention in class. Remaining semi-conscious is not enough to guarantee a strong result. It is important that you pay attention. As such, you shouldn't be taking notes blindly. Instead, try to understand the material as it is being presented to you. Too often students review their notes before a midterm and find, to their surprise, that they do not understand what they've written.

Go over your notes frequently. Lectures will often, if not always, build upon previous material. It is therefore imperative that you spend around 15 minutes reading the notes from the preceding class. This will not only allow you to follow but will help you identify areas of weakness or poor understanding.

Do not copy other people's assignments. One of the biggest mistakes a student can make in Chemistry, Math or Physics is to copy other people's assignments. If you can't get a certain problem, blindly copying the solution from someone who did is a big mistake because it's unlikely that you'll be able to get the problem if it crops up in a midterm or exam. Instead, see the teacher. In this case, he or she will either give you a hint to help you solve it on your own or will go over the solution to the problem step by step. This will give you a much better chance of being able to answer a similar problem later. Remember to mark all problems you have difficulty with so that you can adequately review them before the midterms and final.

Don't memorize. Understand. Trying to memorize how to solve every type of problem is a recipe for disaster. You should instead try to grasp and understand the material. With a proper comprehension of certain fundamental concepts, it becomes much easier to answer questions. If you try to study by rote, you will have trouble whenever a new sort of problem is presented (as often happens on midterms). To test whether you've grasped what you've been taught, try to explain it in your own words.

Problems, problems and more problems. The importance of **practice problems** is what differentiates Chemistry, Math and Physics from Biology. You can find additional problems anywhere from the textbook to online.

Recognize patterns. Often, when given a question, the most important aspect of problem-solving is to identify what sort of problem it is or what method should be used to solve it. The best way to circumvent this issue is to identify patterns. For

example, in elementary school children are taught that if a question includes the word “every,” the solution likely involves division. Likewise, if the integral in a question contains an x to the power of something plus/minus a constant, all to the power of the something else, a trigonometric substitution is likely needed.

Record your most common errors. If you find that you make a certain mistake often, act accordingly to correct it. Making a checklist is recommended.

Good luck and have a wonderful experience at Marianopolis!

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