



Dear Student and Parent/Guardian:

My name is Mr. Dean and I would like to welcome you to my **IBDP Pre-Calculus** class. The following information will be necessary for your success in this course, so please keep this readily available in your math binder.

## Course Outline

This is the first year of a 2-year course that covers a variety of topics including (but not limited to):

Topic 1—Algebra	Topic 5—Statistics and probability
Topic 2—Functions and equations	Topic 6—Calculus
Topic 3—Circular functions and trigonometry	Internal Assessment-Mathematical Exploration
Topic 4—Vectors	

Pre-Calculus IBDP is a college-level Pre-calculus course. The primary purpose for taking this class is to prepare for a college-level Calculus course (such as Calculus IBDP) We typically spend a lot more time than suggested on certain topics, and topics that are not directly part of the IB syllabus, because they are necessary for a complete and fundamental understanding of Advanced Mathematics. Due to the amount of material that we need to cover, this class moves at a very brisk pace. A more detailed description of the course and syllabus is available upon request (via email).

During the first year, we will focus on Algebra, Functions and Equations, Circular Functions and Trigonometry, Statistics and Probability, among other topics typically included in a pre-calculus course. The rest (Vectors, Calculus, etc.) will be covered during the second year. IBDP Mathematics 12 covers more than what you would expect to learn in a typical Scientific Calculus course in college.

## IB Assessment Criteria

A student's final grade for the IB Diploma in this course is determined by an External Assessment that is worth 80% of the grade, and the Internal Assessment makes up the remaining 20%.

The **External Assessment** consists of two written examinations. Paper 1 is a non-calculator test that consists of two sections (short-response and extended-response) based on the whole syllabus (Topics 1-6 listed above). Paper 2 is identical to Paper 1, except Paper 2 requires the use of a calculator. Each Paper is 40% of the total grade.

The **Internal Assessment** component in this course is a mathematical exploration. This is a short report written by the student based on a topic chosen by him or her, and it should focus on the mathematics of that particular area. The project is internally assessed by the teacher and then sent away to be externally moderated by the IBO. The student is expected to spend about 10 hours on the project. The project will be completed by the end of the first semester of the 2<sup>nd</sup> year (IBDP Mathematics 12).

The emphasis is on mathematical communication (including formulae, diagrams, graphs and so on), with accompanying commentary, good mathematical writing and thoughtful reflection. A student should develop his or her own focus, with the teacher providing feedback via, for example, discussion and interview. This will allow the students to develop area(s) of interest to them without a time constraint as in an examination, and allow all students to experience a feeling of success. The final report should be approximately 6 to 12 pages long. It can be either word processed or handwritten. Students should be able to explain all stages of their work in such a way that demonstrates clear understanding. The report should include a detailed bibliography, and sources need to be referenced in line with the IB academic honesty policy. Direct quotes must be acknowledged.

## IBDP Aims and Objectives:

### AIMS

1. **enjoy** mathematics, and develop an appreciation of the elegance and power of mathematics
2. **develop** an understanding of the principles and nature of mathematics
3. **communicate** clearly and confidently in a variety of contexts
4. **develop** logical, critical and creative thinking, and patience and persistence in problem-solving
5. **employ** and refine their powers of abstraction and generalization
6. **apply** and transfer skills to alternative situations, to other areas of knowledge and to future developments
7. **appreciate** how developments in technology and mathematics have influenced each other
8. **appreciate** the moral, social and ethical implications arising from the work of mathematicians and the applications of mathematics
9. appreciate the international dimension in mathematics through an awareness of the universality of mathematics and its multicultural and historical perspectives
10. **appreciate** the contribution of mathematics to other disciplines, and as a particular "area of knowledge" in the TOK course.

### ASSESSMENT OBJECTIVES

1. **Knowledge and understanding:** recall, select and use their knowledge of mathematical facts, concepts and techniques in a variety of familiar and unfamiliar contexts.
2. **Problem-solving:** recall, select and use their knowledge of mathematical skills, results and models in both real and abstract contexts to solve problems.
3. **Communication and interpretation:** transform common realistic contexts into mathematics; comment on the context; sketch or draw mathematical diagrams, graphs or constructions both on paper and using technology; record methods, solutions and conclusions using standardized notation.
4. **Technology:** use technology, accurately, appropriately and efficiently both to explore new ideas and to solve problems.
5. **Reasoning:** construct mathematical arguments through use of precise statements, logical deduction and inference, and by the manipulation of mathematical expressions.
6. **Inquiry approaches:** investigate unfamiliar situations, both abstract and real-world, involving organizing and analyzing information, making conjectures, drawing conclusions and testing their validity.



# Barack Obama Academy of International Studies

515 N. Highland Avenue | Pittsburgh, PA 15206

Phone: 412-622-5980 | Fax: 412-622-5983

## Grading Guidelines

The grade that you receive on your report card will be calculated in the following manner, using a weighted grading system:

### **Homework – 10%**

Homework will be assigned EVERY DAY, and is due the following school day. Students will receive a list of assignments and when the tests/quizzes will occur at the beginning of each unit, so there is no excuse for not knowing what the assignment was or when the next test or quiz may occur. Homework is checked daily and is worth 3 points for each assignment (more details below). The homework grade will be entered as a weekly total. Daily assignments are also posted on my Twitter and Facebook pages (see pg.4)

### **Writing – 10%**

This section includes unit projects, summative tasks, or writing assignments that are set by the teacher. Each unit of study will have a project or problem that students will have to complete by a specified date related to the topic in the current unit. As we progress through the unit, we will add skills that will be necessary for successful completion of the project. Often, students will complete drafts and receive feedback on their projects throughout the unit. Students must meet all deadlines set (NO EXCEPTIONS), make revisions, and complete a reflection piece on their project. Where appropriate, presentations of the project will occur and be graded. The project and presentation will be scored according to a rubric.

### **Class Participation – 15%**

Students start each grading period with 100 out of 100 class participation points. **ALL students are expected to participate in class discussions and class work**, which is why students start out with 100%. Points will be added to the students' grade when they present solutions to the class, solve challenging problems, make an exemplary point during a class discussion, bring in an example of mathematics in the real world, etc. Points will be taken away if the student is not prepared for class (notebook, calculator, book, and pencil), does not complete the warm-up, refusal of task, etc.

### **Classwork – 15%**

All graded classwork will be included in this section. This includes warm-ups, exit tickets, or any other material that is done in class and checked for accuracy. Graded in-class assignments are generally worth 10 points, while warm-ups and exit tickets are worth 5 points. Group work done in class is also included in this section.

### **Assessment – 50%**

Included in this section are chapter tests and quizzes. Quizzes usually occur after we cover 2-3 sections in the unit (largely based on homework problems), and are worth anywhere from 20-40 points (depending on length and difficulty of topic). There is no "review" for a quiz, students should be able to achieve success on a quiz if they are paying attention in class and legitimately completing their homework. A chapter test is an assessment on an entire chapter or unit of study. A chapter test is worth anywhere from 40-80 points (depending on length and difficulty of topic). A review assignment or worksheet will always be provided for a chapter test, as it covers everything learned in a particular unit of study. There are **NO RE-TESTS** on chapter tests or quizzes, so it is imperative that students do their homework, study, and are prepared for chapter tests and quizzes.

### Grading Scale:

90-100%	A	Semester Grades (using percentages)	
80-89.9%	B	Term 1	40%
70-79.9%	C	Term 2	40%
60-69.9%	D	Midterm/Final Exam	20%
Below 60%	E		

### **\*EXTRA CREDIT DISCLAIMER**

**There will be no opportunities for extra credit.** Students should make every effort to complete work and achieve the highest grade possible during the report period and not rely on extra credit to boost their grade. Additionally, there will be no opportunities to "make-up" assignments that were completed poorly. It is important that students complete quality work the first time.

### **Necessary Materials**

#### **Notebook:**

**The math notebook must be a 3-ring binder with lined paper OR a 5-subject notebook.** The binder is to only be used for this class. Taking good class notes is imperative to your success in this class.

#### **Calculator:**

**Students are required to have a graphing calculator at all times during this course.** You cannot be successful without one. It is recommended that each student buys their own calculator; so that they will have a calculator of their own that they will be familiar with when they go to college. The IB test requires the use of a calculator, so it is a necessary part of class. If you are going to buy a calculator, I recommend the TI-84+ Silver Edition (Texas Instruments). If you already have a TI-83+, this is also acceptable (minimum). Students who cannot purchase their own calculator will be provided a TI-84 by the school. If the student should lose the calculator, the cost to replace it is \$100 (district policy).





# Barack Obama Academy of International Studies

515 N. Highland Avenue | Pittsburgh, PA 15206

Phone: 412-622-5980 | Fax: 412-622-5983

## **Necessary Materials (continued)**

### **Book:**

Books are available to sign out and use in the classroom during the school day, so it is not absolutely necessary to bring your book to class, although you may find it helpful.

### **Pencil:**

**Math must be done in pencil.** Everyone makes mistakes and using pen can get messy and waste paper. Work done in pen will not be graded.

### **Homework Policy**

Homework is paramount to your success in this course. Homework is assigned daily, and is always due at the beginning of class on the following school day. As mentioned above, you will receive all homework assignments for a unit at the beginning of the unit. A list of past and present assignments will also be posted on the assignment board. Classwork quizzes are based on homework assignments, so it is imperative that students complete their homework EVERY DAY.

### **Accuracy:**

It is the **RESPONSIBILITY OF THE STUDENT** to complete all assigned problems, **SHOW WORK**, and **CHECK THEIR HOMEWORK FOR ACCURACY**. The answers to the odd problems are in the back of the book, and even answers will be provided at the beginning of class if necessary. Except for even problems, students should have already checked their homework before coming to class, so they know which questions they need to ask in the limited time we have to review homework questions.

### **Showing Work:**

**Students are required to show work for each and every problem.** If any steps are skipped, they must be able to verbally explain the process to myself or the class. Homework is not just about getting the right answer; it's about justifying and proving you have the right answer. Answers without supporting work will receive NO CREDIT.

### **Formatting:**

**Each homework assignment must be labeled and on its own separate page.** At the top of the page you will label each assignment as shown on the assignment sheet with the page and problem numbers. You will also write your name, date, and class period. You will be asked to have your homework on the outside corner of your desk at the beginning of each class while you are working in your notebook on a warm-up problem. Sometimes homework will be collected, so it is important that there are no other assignments or notes on the paper.

### **Homework Grades:**

**3 points** – every problem seriously attempted, work shown, checked for accuracy, proper format

**2 points** – few problems missing, missing some work, homework not checked, or not properly formatted

**1 point** – several of the problems not attempted, missing work on several problems

**0 points** – less than half the problems attempted or not attempted at all – must fill out “No Homework” slip

### **Late Work /Attendance Policy**

#### **Attendance:**

Daily attendance is a must in this course. If a student is absent for even one day, often times they will come in the next feeling like they are in a different world. **Students are responsible for any work missed whenever they are not in class for any reason.** The subject matter will **not be re-taught** to the student at a later time. They are responsible for copying class notes, and completing the homework. If notes aren't immediately available from a peer, consult the textbook for help completing homework, or email me to receive a copy of the PowerPoint. Also, check the Twitter/Facebook page for resources, or search for YouTube videos on the topic.

#### **Homework:**

In order to get full credit for your homework, it must be completed on time (the following day). If you are absent one day, you have one day to make it up. For example, If you miss class on Tuesday and return on Wednesday, you should have both assignments (from Tuesday and Wednesday) completed on Thursday. You may turn in homework late, for half credit (1.5 points). All late homework must be turned in by the end of the day **Tuesday of the following week, if not turned in by then it will remain a “0”**. We move quickly, typically spending no more than 2 days on a particular topic, so time is of the essence. Quizzes and Tests are based on the homework questions, so you should try and complete the assignment if you forgot on the day it was due or were absent.

**Please note: If you are late for class without a signed agenda book, your homework is late, and the most that you can receive is half credit.**

#### **Assessments:**

If a student is absent for a test or quiz, they should make it up **within one week**. Tests cannot be made up during class, as class time is for learning, and every second is important. Tests cannot be made up when a student is scheduled to be in another class, unless they have a note from that teacher allowing them to do so. Tests must be made up before school, or during QRT and after school only.



# Barack Obama Academy of International Studies

515 N. Highland Avenue | Pittsburgh, PA 15206

Phone: 412-622-5980 | Fax: 412-622-5983

## Academic and Behavioral Expectations

In addition to the policies outlined in the Pittsburgh Obama High School Handbook:

- **Report to class on time.** Late students will be expected to present a signed agenda book. When the bell rings, have your homework out on the outside corner of your desk, open your notebook, and begin the warm-up.
- **Don't speak out of turn.** Only one person is allowed to talk at a time (whether it is the teacher or the student). Do not shout out answers; wait until you are called on. Contributing to class discussion is mandatory, but we must not "ruin it" for everyone else. Be sure to use talk tips during discussion. You can raise your hand if you want, but Mr. Dean will decide who gets to talk.
- **Be prepared for class.** Bring all necessary materials described above, along with homework. If for some reason you don't have your homework, you must fill out a "No Homework" slip, which must be filled out by the time I come around and check homework.
- **Pay attention.** Every second is important, and the second you let your mind drift you are lost. There is not time to repeat things that have already been said, so you must pay attention. Obviously, using your phone or sleeping is a huge problem.
- **Use time wisely.** Instructional time is not used to go to the bathroom, so don't ask. You may go if you finish a warm-up or assignment early, but do not ask to go during a lesson or discussion (only one person at a time). Also, we work from bell to beyond the bell. The bell does not dismiss the class, I do. I will sign your agenda book if I send you late to class.
- **Do your own work.** Cheating will not be tolerated. Anyone caught cheating in any form, on any assignment, will be given a "0" for that assignment. Those assisting in cheating will also be punished.

When these rules are not followed, the following consequences might be applied in part or whole:

- Verbal warning and loss of class participation points
- Phone call or email home/Conference with Parent or Guardian
- Referral to the Office

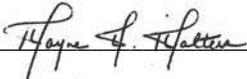
## Contact Information

Please be assured that my goal is to work with you to ensure the success of your child this year. Please read and discuss the information outlined in this document with your child, sign below, and put your contact information where applicable. Please feel free to contact me if you would like to know about your child's progress at any time, or have any questions whatsoever.

### *Email:*

The best way to get a hold of me is via email: [jdean1@pghboe.net](mailto:jdean1@pghboe.net). I will respond to you in a timely manner. If email is unavailable, you can also contact my school voice mail @ (412) 529-7203. **If you have an email address, please make sure you list it below.** I will be sending out an email to all parents who give me their addresses in the near future. Email is my preferred method of communication.

Class assignments will be updated daily to [www.twitter.com/MrDeanMathClass](http://www.twitter.com/MrDeanMathClass), or follow my class on Facebook at [www.facebook.com/MrDeanMathClass](http://www.facebook.com/MrDeanMathClass).

Approved: , Principal

## **PLEASE FILL IN THE FOLLOWING INFORMATION:**

Name of Student: \_\_\_\_\_ (please print)      Name of Parent/Guardian: \_\_\_\_\_ (please print)

Student Signature: \_\_\_\_\_      Parent Signature: \_\_\_\_\_

<p><b><u>PARENT</u></b> EMAIL ADDRESS: _____</p> <p>(PLEASE <b>PRINT</b> AND WRITE LEGIBLY)</p>
---

<p><b><u>STUDENT</u></b> EMAIL ADDRESS: _____</p> <p>(PLEASE <b>PRINT</b> AND WRITE LEGIBLY)</p>
--

Please sign to indicate you have read the above letter and return it to Mr. Dean. You cannot keep this paper, the student must return it to class and I will keep it on file. If you send me an email and request a copy I will be more than happy to send one to you. Thank you for your help, and I look forward to working with you and your child to do whatever it takes for them to be successful!

