

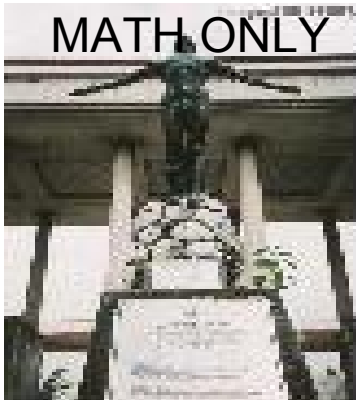
# ADVANCED PLACEMENT EXAMINATIONS (APE)

Credit by Examination  
**23 June 2017 (FRIDAY)**

**Math 11 (College Algebra)**  
**Math 14 (Trigonometry)**

FOR INCOMING FRESHMEN  
ONLY  
(EXCEPT BS MATH MAJORS)  
and

**Math 60 (Precalculus) for  
INCOMING FRESHMEN BS  
MATH ONLY**



Academic Year 2017– 2018  
University of the Philippines  
Diliman

## APPLICATION PERIOD and VENUE 01–21 June 2017

Office of the College Secretary  
2<sup>nd</sup> Flr. New Administration Building  
College of Science  
NSC Complex  
UP Campus, Diliman, Quezon City

### EXAMINATION DATE AND TIME

**23 June 2017 (Friday)**

9:00 A.M. – 11:00 A.M. (Math 11)  
**9:00 A.M. – 12:00 noon (Math 60)**  
2:00 P.M – 4:00 P.M. (Math 14)

Please be at the venue by:  
8:30 A.M. for Math 11 and Math 60  
and 1:30 P.M. for Math 14.

### EXAMINATION VENUE

3<sup>rd</sup> floor, Mathematics Building  
C.P. Garcia Ave., UP Campus  
Diliman, Quezon City

### WHAT TO BRING DURING THE EXAM

Black or Blue ink pen  
Examination Permit  
ID card bearing picture and  
signature of student.

### NOTE:

The APE is a closed book examination.  
Answer sheets and scratch paper will be  
distributed at the start of the examination  
by the examiners. Calculators and cell  
phones are not allowed.

## Important Notice!

Incoming freshmen  
**B.S. Mathematics**  
majors are NOT allowed to take  
the Advanced Placement  
Examination (APE) for Math 11  
and Math 14.



For more information, contact:

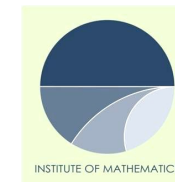
### **Ms. Janeth Mabaquiao**

Office of the Secretary  
College of Science, UP Diliman, Q.C.  
Tel No.: (+632) 981 – 8500 loc. 3816

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The APE is an official activity of the:



**INSTITUTE OF MATHEMATICS**  
College of Science  
University of the Philippines  
Diliman, Quezon City  
<http://www.math.upd.edu.ph>  
Tel/Fax: (+632) 920-1009

## What is the Advanced Placement Examination (APE)?

The Advanced Placement Examination (APE) is an exam given before the start of the first semester of every academic year to any freshmen qualifier to the University of the Philippines in Diliman. The APE is OPTIONAL and may be taken by anyone who has sufficient high school background in the subjects concerned.

An incoming (non-BS Math) freshman with an average of 85% (or its equivalent) or higher in high school algebra/trigonometry may take the APE in Math 11 (College Algebra) and/or Math 14 (Trigonometry). An incoming BS Math freshman with an average of 85% (or its equivalent) or higher in high school algebra and trigonometry may take the APE in Math 60 (Precalculus). SPECIAL CASES (where the subject does not appear in the student's high school record) may be permitted upon the approval of the APE committee.

A freshman who passes an exam shall be given credit (3 units for Math 11 and/or Math 14; and 5 units for Math 60) in his / her academic program.

## What are the advantages of taking and passing the APE?

A student who passes the APE saves matriculation money, as well as time, since, he/she need not enroll in the subject passed and may proceed to the next subject.

## When and Where to Apply

Application Period is from **01–21 June 2017** except on Saturdays, Sundays and official holidays) at the Office of the College Secretary, College of Science, UP Diliman.

## Application Fee:

**P200 for each exam** to be taken. Please pay at UP Diliman Cashier's Office :  
**(Institute of Mathematics)**  
**Trust Account No. 9774-198-499-439**

## What to bring when applying for APE

- UP Admission Notice
- Certified Photocopy of Student's Transcript of Records (1<sup>st</sup> to 3<sup>rd</sup> year – Form 137) or Report Cards ( 1<sup>st</sup> to 3<sup>rd</sup> year – Form 138); bring 4<sup>th</sup> year records if available
- Two recent 2x2 pictures of the student
- Valid photo identification card with signature of student.

## TOPICS TO BE COVERED IN APE

### **MATH 11 (College Algebra) Exam Coverage (2 hour exam)**

- Sets, Operations and Relations of Sets
- Algebra of Real Numbers
- Algebraic Expressions
- Special Products; Factors and Factoring
- Algebraic Fractions
- Real Exponents
- Radicals
- Distance, Midpoint, and Slope Formulas
- Relations and Functions
- Domain and Range of Functions
- Graphs of Functions
- Linear and Quadratic Functions
- Linear Equations and Inequalities
- Quadratic Equations, Equations in Quadratic Form
- Equations Involving Radicals
- Systems of Two and Three Linear Expressions
- Applications of Equations in Word Problems
- Fundamental Theory of Algebra
- Determining Roots of Rational Polynomials
- Inverse Functions
- Exponential Functions
- Variation
- Arithmetic Progression
- Geometric Progression

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### **MATH 14 (Trigonometry) Exam Coverage (2 hour exam)**

- Angles, Degree and Radian Measures of Angles
- Equation of a Circle, Unit Circle
- Sine, Cosine and other Circular Functions
- Graphs of Basic Trigonometric Functions
- Graph of  $y = k + A\sin(Bx+C)$ ,  $y = k + A\cos(Bx+C)$
- Relations Between Circular and Trig Functions
- Trigonometric Values, Pythagorean Identity
- Special Reduction Formulas
- Sum, Difference and Cofunction Identities
- Double and Half Angle Identities
- Inverse Trigonometric Functions
- Sine and Cosine Laws
- Solutions of Right and Oblique Triangles
- Complex Numbers
- Complex Numbers in Rectangular and Polar forms
- Powers and Roots of Complex Numbers
- De Moivre's Theorem
- Common and Natural Logarithms

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### **MATH 60 (Precalculus) Exam Coverage (3 hour exam)**

**ALL TOPICS in Math 11 AND Math 14 APE exam coverage PLUS the following:**

#### Analytic Geometry topics

- Polar Coordinates and Graphs
- Conic Sections, Parabola, Ellipse, Hyperbola
- Translation and Rotation of Axes

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