



MA30102 Foundation Mathematics 2

Teacher	Mr. Shiv Kumar
Contact	Science Lab, 2 nd Floor Colombet Building. shiv.ku@assumption.ac.th
Class Time	EP-M4/1: Monday Period-7, Wednesday Period-2 EP-M4/2: Tuesday Period-3, Thursday Period-1 EP-M4/1: Monday Period-5, Thursday Period-3
Credits	1.0

Course Description

Before midterm exams:

The first topics will be function and relations, domain and range of a function and different types of functions. Relations and an introduction to functions: definitions and terminology.

As with many courses within EP, critical thinking skills are emphasized over those of rote learning and where possible an investigative approach is used.

After midterm exams:

After the midterm exams, the different types of functions explored will continue in particular, drawing linear, quadratic, exponential, absolute and step functions. The topics of unit circle along with trigonometric value of 30, 45 and 60 degree and the application of trigonometry for height and distance problems.

In general, the key competencies for the math course are: 1. Communicative ability 2.

Thinking ability 3. Problem solving ability 4. Ability to use life skills 5. Technological ability

The key process skills are: 1. Problem solving 2. Reasoning 3. Communicating the meaning 4. Connecting 5. Creative thinking

Textbook

[Book 1] Barron's SAT Math Level 1, 13th Edition.

[Book 2] IGCSE Cambridge International Mathematics Extended (0607), 2015 Edition * *For new students, or those who have lost this EP3 textbook, I will have a shared online version.*
Additional teacher handouts

Online resources

Google classroom, Khan Academy and Kahoot

Course Outline & Objectives

Learning Unit 1.1: **Relations** [Strand 1, Standard MA1.2, Indicators MA 1.2 S.5/1]

1. Ordered pairs
2. Cartesian product
3. Relations
4. Graphs of relations
5. Domain and range of a relation
6. Inverse of a relation



Learning Unit 2: **Functions** [Strand 1, Standard MA1.2, Indicators MA 1.2 S.5/1]

1. Definition of function
2. Domain and range of function
3. Value of a function $f(x)$

End of Midterm Exam Content – Start of Final Exam Content

Learning Unit 2: **Functions** [Strand 1, Standard MA2, Indicators MA 2.1 S.5/2]

Continued...

4. Types of functions
 - Linear and Quadratic functions
 - Exponential function
 - Absolute value function
 - Step function

Learning Unit 3: **Trigonometry** [Strand 1, Standard MA2.1, Indicators MA 2.2 S.2/1]

1. trigonometric ratio
2. calculation of 30, 45 and 60 degree of trigonometric identities
3. relation between side and angles
4. height and distance problems

Resources

Required	<input type="checkbox"/> At least 3 notebooks (2 white, 1 pink) <input type="checkbox"/> Scientific calculator (not a phone-based application) <input type="checkbox"/> Ruler <input type="checkbox"/> Glue stick, stapler, or tape
Suggested	<input type="checkbox"/> Many different colored pens/markers/highlighters <input type="checkbox"/> Electronic Thai-English translator (not a phone-based application)

Academic Integrity Policy

Students are expected to adhere to the Assumption College student handbook. There is to be no plagiarism, no copying, and no cheating of any kind. These and any other acts of academic dishonesty lower the quality of the education and will not be tolerated. Students involved in any form of academic dishonesty, including any student supplying or allowing the copying to take place, will receive a zero.

Plagiarism is the act of taking someone else's work or ideas and passing them off as one's own work or ideas. Examples of plagiarism include the failure to give appropriate acknowledgement when repeating another's idea, phrase, sentence or paragraph, or failure to give appropriate acknowledgement when paraphrasing any of those.

Behavioral Expectations

For the sake of all the members of the class, students are expected to respect themselves, their classmates, the teacher, and the facilities. Students must accept responsibility for themselves and their actions. Students are expected to be ready at the start of every class (Notebooks, textbook, scientific calculator, writing utensils, etc.) and to actively participate throughout the lesson until class is dismissed.



Behavior is monitored every day as per the class rules that are set out at the beginning of the academic year (see the front of your note books). At the end of the semester the average is taken and used for the student's behavior score (10%). Students *earn* the scores they receive.

Additionally, all Thai students are expected to embrace the following *desired characteristics*:

- Love for the country and the King, faith in religion
- Possess discipline
- Be self-sufficient
- Proud to be Thai
- Be an AC gentleman
- Eager to learn
- Dedicated to work
- Have a sense of public consciousness
- Be honest and upright

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on-time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher in as far in advance as possible. Students are expected to catch up on all missed work outside of class time.

Homework & Classwork

Homework and classwork will be assigned often and must be submitted on or before the due date. All late or missed assignments that are not turned in *before* the last week of the term get 0%.

Grading

This course follows to the Assumption College grading scale:

<i>Final Score</i> ≥ 80%	4.0
75% ≤ <i>Final Score</i> < 80%	3.5
70% ≤ <i>Final Score</i> < 75%	3.0
65% ≤ <i>Final Score</i> < 70%	2.5
60% ≤ <i>Final Score</i> < 65%	2.0
55% ≤ <i>Final Score</i> < 60%	1.5
50% ≤ <i>Final Score</i> < 55%	1.0
<i>Final Score</i> < 50%	0.0

Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

Class work	20%
Class Participation	10%
Note book	10%
Behavior	10%
Quizzes	10%
Midterm (Summative) Exam	20% (program mandated)
Final Exam	20% (program mandated)



Recommendations for Success

Mathematics can be a difficult course for many students. All students are encouraged to try the following:

1. Read, read, read the course textbook. Often, reading the text once is not enough even for native English speakers. You may need to read the material multiple times to understand. By reading along at home with the lessons taught at school (typically only a few pages per night), students will be able to responsibly manage the material and gain the most from the course.
2. Search online, in either Thai or English, if you don't understand a topic discussed in class or simply to get a better understanding of the topic.
3. Get a Thai language introductory mathematics book.
4. Do **not** copy your classmates work; struggle through and do the work on your own! This is how you learn!
5. Come see the teacher outside of class time for assistance.
6. Do more than just the bare minimum; there are plenty of problems in the textbook. We only have time for so many of them. Do the review questions at the end of the chapter and see the teacher for the answers.
7. Study the notes and vocabulary at least a few minutes every day, such as in homeroom or during any free time you might have in other classes.



MA30214	Universal Mathematics 2
Teacher	Mr. Chris Won
Contact	EP Teacher Room, 2 nd Floor Colombet Bldg.
Class Time	EP-M4/1: Mon, Period 3; Thurs, Period 2 EP-M4/2: Tues, Period 7; Wed, Period 5 EP-M4/3: Mon, Period 1; Wed, Period 7
Credits	1.0

Course Description

This mathematics course focuses on the topics of matrices and determinants, functions, and analytic geometry. This course enables students to learn and use mathematical skills and processes which include problem-solving, reasoning, communications, mathematical implication and presentation, mathematical connections, and creative thinking. Students are encouraged to have responsibility, discipline, self-confidence, and positive attitudes toward mathematics. The course closely follows the content of the Thai syllabus while also exposes students to questions and word problems from an international syllabus.

Textbook

Wazir, Ibrahim. Higher Level Mathematics: Developed Specifically for the IB Diploma. Pearson, 2012. ISBN 978-0-435-07496-8

Course Outline & Objectives

Learning Units	Chapters from the textbook
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1. Matrices and Determinants

1.1. Vectors and Matrices

- 1.1.1. Vector operations
- 1.1.2. Matrix operations
- 1.1.3. Types and properties of matrices
- 1.1.4. Linear Transformation

1.2. Determinant

- 1.2.1. Find the determinant of a $n \times n$; $n \leq 3$ matrix
- 1.2.2. Find the determinant of a $n \times n$; $n > 3$ matrix
- 1.2.3. Properties of determinant

1.3. System of linear equations

- 1.3.1. Elementary row operation
- 1.3.2. Inverse multiplication of matrix
- 1.3.3. Cramer's Rule



2. Functions

2.1. Definition of a function

2.2. Types of functions

2.2.1. Identify functions

2.2.2. Monotonic Functions

2.2.3. Quadratic functions

2.3. Algebra of functions

2.4. Composite functions

2.5. Inverse functions

(Chapter 2. Functions)

3. Analytic Geometry

3.1. Foundation of analytic geometry

3.1.1. Distance between two points

3.1.2. Midpoint between two points

3.1.3. Slope of linear, parallel and perpendicular

3.1.4. Solving equations

3.1.5. Distance between a line and a point

3.1.6. Distance between parallel lines

3.2. Conic sections

3.2.1. Parabolas

3.2.2. Circles

3.2.3. Ellipses

3.2.4. Hyperbolas

Resources

- Google Classroom
- MyOpenMath

Not covered in the textbook Use teacher's notes

- A4 plastic portfolio (to keep all student work and handouts)
- A4 paper or notebook
- Ruler
- Writing supplies

Academic Integrity Policy

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Behavioral Expectations

Students are expected to respect themselves, their classmates, the teacher, and the facilities. Students must accept responsibility for themselves and their actions. Students



must speak English in class. Students are expected to be ready at the start of every class (notebooks, textbook, scientific calculator, writing utensils, etc.) and to actively participate throughout the lesson until class is dismissed.

Behavior is monitored every class. At the end of the semester the points are accumulated and used for the student's behavior score (10%).

Furthermore, all Thai students are expected to embrace the following *desired characteristics*:

- Love for the country and the King, faith in religion
- Have a sense of public consciousness
- Possess discipline
- Be self-sufficient
- Be honest and upright
- Proud to be Thai
- Eager to learn
- Dedicated to work
- Be an AC gentleman

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on-time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher as far in advance as possible. Students are expected to catch up on all missed work outside of class time.

Assignments & Projects

An assessment item must be submitted on or before the due date. **An assessment item submitted later than the due date, without an extension from the teacher, will be subject to a penalty (deduction of marks).** Late homework may be completed and submitted to qualify towards eligibility for exams. At the end of the semester, if the students have not completed a sufficient number of homework assignments to pass this aspect of the course, additional work will be set for them.

Grading

This course adheres to the Assumption College grading scale:

$Final\ Score \geq 80\%$	4.0
$75\% \leq Final\ Score < 80\%$	3.5
$70\% \leq Final\ Score < 75\%$	3.0
$65\% \leq Final\ Score < 70\%$	2.5
$60\% \leq Final\ Score < 65\%$	2.0
$55\% \leq Final\ Score < 60\%$	1.5
$50\% \leq Final\ Score < 55\%$	1.0
$Final\ Score < 50\%$	0.0



Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

Formative (Tests, Quizzes, Assignments)	50%
Behavior	10%
Midterm Exam	20%
Final Exam	20%

Recommendations for Success

Mathematics can be difficult for many students. All students are encouraged to do the following:

1. Read the provided course notes. You may need to read the material multiple times to understand. By reading along at home with the lessons taught at school, students will be able to responsibly manage the material and gain the most from the course.
2. Complete all forms of assessment and submit all homework and assignments.
3. Search online, in either Thai or English, if you don't understand a topic discussed in class or simply to get a better understanding of the topic.
4. Do not copy the work of your classmates' work; try to struggle through on your own. This will help you learn.
5. Seek the teacher for assistance.
6. Do more than just the bare minimum; do the additional problems in the textbook and the review questions at the end of the chapter and check your answers.
7. Study the notes and vocabulary daily.



EN30102 Foundation English 2

Teacher Mr. Jonas Godson

Contact EP Teacher Room, 2nd Floor Colombet Bldg.
jonas.go@assumption.ac.th

Credits 1.5

Course Description

The Foundation English course focuses on laying solid groundwork on basic grammar, speech, reading and vocabulary skills. Using an integrated learning methodology, this course aims to give students the more advanced skills needed to converse in English. Starting with parts of speech and focusing on more complex grammar tenses, such as present perfect simple, present perfect progressive and past perfect simple, and then moving on to prefixes and suffixes, conditionals and comparative and superlatives.

For reading, the focus will be on more advanced reading skills and higher level critical thinking skills. Writing will be more focused on essays and complex, flowing paragraphs and connectives. Speaking and listening will be integrated into activities, but phonetics and correct pronunciation will be highlighted. There will be more of an emphasis on debating, rather than role-playing.

This course will follow the content of the course book, with a few extra adaptations and activities where necessary.

Textbook

(Cambridge) Prepare – Student book with activity workbook B2 – Level 7

Course Outline & Objectives

Weeks 1 & 2: Unit 9: A Bright Future

Vocabulary: Collocations

Reading: Discussing optimistic and pessimistic views about the future.

Grammar: Future continuous & Perfect

Writing: Writing a compare & contrast essay

Weeks 3 & 4: Unit 9: A Bright Future

Vocabulary: Collocations

Reading: Discussing optimistic and pessimistic views about the future.

Grammar: Future continuous & Perfect

Writing: Writing a compare & contrast essay

Weeks 5 & 6: Unit 16: New and improved

Vocabulary: Advertising: Nouns and verbs

Reading: Guerrilla Marketing – Is it effective?

Grammar: Conditionals, adverb + adjective collocations

Writing: Describing an advertising campaign

Weeks 7 & 8: Unit 16: New and improved

Vocabulary: Advertising: Nouns and verbs

Reading: Guerrilla Marketing – Is it effective?

Grammar: Conditionals, adverb + adjective collocations

Writing: Describing an advertising campaign

Week 9 & 10: Revision & mid-term exam



Contents: Writing a compare & contrast essay, collocations, future continuous & perfect, conditionals, adverb + adjective collocations

End of Midterm Exam Content – Start of Final Exam Content

Weeks 11 & 12: Unit 18: Creative Careers

Vocabulary: The world of work
Reading: The Big Decision – Career choice
Grammar: Uses of verb + -ing
Writing: Agreeing & disagreeing about types of work

Weeks 13 & 14: Unit 18: Creative Careers

Vocabulary: The world of work
Reading: The Big Decision – Career choice
Grammar: Uses of verb + -ing
Writing: Agreeing & disagreeing about types of work

Weeks 15 & 16: Unit 18: Creative Careers

Vocabulary: The world of work
Reading: The Big Decision – Career choice
Grammar: Uses of verb + -ing
Writing: Agreeing & disagreeing about types of work

Week 17 & 18: Tourism in Thailand. (Handouts in class)

Students will use previously taught skills and vocabulary to produce a written guide to Thailand for tourists. They will then present this to the class and answer questions.

Week 19: Revision for final exam

Content: Conditionals, adverb + adjective collocations, uses of verb + -ing

Resources

- | | |
|-----------|--|
| Required | <ul style="list-style-type: none">• At least 3 notebooks.• Dictionary (English to English, not a translating one)• Extra lines A4 paper for written assignments.• Access to a computer and internet.• A Gmail email account would be beneficial. |
| Suggested | <ul style="list-style-type: none">• Many different colored pens/markers/highlighters |

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Behavioral Expectations

For the sake of all the members of the class, students are expected to respect themselves, their classmates, the teacher, and the facilities.



Students must accept responsibility for themselves and their actions. Students are expected to be ready at the start of every class (notebooks, textbook, writing utensils, etc.) and to actively participate throughout the lesson until class is dismissed.

Behavior is monitored every day as per the class rules that are set out at the beginning of the academic year (see the front of your note books). At the end of the semester the average is taken and used for the student's behavior score (20%). Students *earn* the scores they receive.

Additionally, all Thai students are expected to embrace the following *desired characteristics*:

- Love for the country and the King, faith in religion
- Possess discipline
- Be self-sufficient
- Proud to be Thai
- Be an A.C. gentleman
- Eager to learn
- Dedicated to work
- Have a sense of public consciousness
- Be honest and upright

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on-time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher in as far in advance as possible. Students are expected to catch up on all missed work outside of class time.

Homework & Class work

Homework and class work will be assigned often and must be submitted on or before the due date for a score of 20 points. If the work is not done for the start of class, a maximum score of 15 will be possible. After more than one day has lapsed, a maximum score of 10 will be available. Late assignments can be submitted for a maximum of 50% (10 points) up until the last week of the term. All late or missed assignments that are not turned in *before* the last week of the term will receive a zero.

Grading

This course follows to the Assumption College grading scale:

$Final\ Score \geq 80\%$	4.0
$75\% \leq Final\ Score < 80\%$	3.5
$70\% \leq Final\ Score < 75\%$	3.0
$65\% \leq Final\ Score < 70\%$	2.5
$60\% \leq Final\ Score < 65\%$	2.0
$55\% \leq Final\ Score < 60\%$	1.5
$50\% \leq Final\ Score < 55\%$	1.0
$Final\ Score < 50\%$	0.0

Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

Participation in class	10%
Class work	10%
Notebooks	10%
Quiz 1	10%



Quiz 2	10%
Behavior	10% (Program Mandated)
Midterm Exam	20% (Program Mandated)
Final Exam	20% (Program Mandated)

Recommendations for Success

English can be a difficult course for many students. All students are encouraged to try the following:

1. Read, read, read and read. The best way to learn English is to read literature. It helps with nearly every aspect of English. The best students are always the ones who *enjoy* reading. Find a book you like and keep at it. A little every day is a good way to start.
2. Watching American movies or TV shows with the English subtitles is a good way to improve your speaking and listening skills; it also helps with vocabulary too. When you come across a new word, just pause the movie and write it down in your vocabulary book.
3. Search online (in English) if you don't understand a topic discussed in class to get a better understanding of the topic.
4. Do **not** copy your classmate's work; struggle through and do the work on your own. This is how you learn.
5. Come see the teacher outside of class time for assistance.
6. Study the notes and vocabulary at least a few minutes every day, such as in homeroom or during any free time you might have in other classes.
7. If you don't understand then ask your friends, communication is vital for success in English, communicate with your classmates in English, you'll be surprised how quickly your English improves just by doing this.



EN30202 Reading and Writing 2

Teacher Mr. Adam John Mettam

Contact EP Teacher Room, 2nd Floor Colombet Bldg
adam.me@assumption.ac.th

Class Time EP-M4 - Two Periods a Week for two Classes

Credits 1.5

Course Description

This class will focus on improving skills in English, in particular reading, writing, listening and speaking. The primary goals of the course is to prepare students for the IELTS exam, mid term and end of year assessments.

Textbooks

- *Student's Book* IELTS Introduction - Macmillan Course book
- *Workbook* IELTS Introduction - Macmillan Course book

Course Outline & Objectives

Week 1 & 2 - Unit 1 - Finding Out About the World

- Introductions
- Vocabulary and Language adjectives for describing places, simple present
- Reading Skills - Skimming, matching headings. T/F/NG
- Writing Task 1 - Describing a chart (Homework)
- Listening - Section 1: Numbers, choosing items from a list, sentence completion
- Speaking Part 1 - Transport, Part 2 - Talking about places you like

Week 3 & 4 - Unit 2 - In Search of Time

- Language and Vocabulary - Collocations with time, present perfect
- Reading - Scanning, sentence completion, matching classifying
- Writing Task 2 - Introductions, organisation, writing a paragraph
- Listening - Multiple choice, completing a table
- Speaking - Part 1 Sentence stress. Part 2 - Electronic devices. Part 3 Discussions

Week 5 & 6 - Unit 3 - Giving Structure to Our World

- Reading - Short answer questions
- Writing Task 2 - A paragraph
- Listening Section 3 - Completing a table
- Speaking Part 2 - Talking about a school subject. Part 3 - Beginning an answer, talking about university
- Language and Vocabulary - Comparative and superlative adjectives

Week 7 & 8 - Unit 6 - The Process of Life

- Vocabulary - Adjectives and nouns, cause and effect, intensifiers
- Reading - Completing a flowchart (Unit 5)
- Reading - Matching headings, multiple choice



- Writing Task - Describing a process

Week 8 – Revision of the four skills and timings

Week 9 – Midterm Exams

Christmas / New Year break (Week 10)

Week 11 – 12 - Unit 9 - Finance

- Language and Vocabulary - Words relating to pay, complex sentences and opinion
- Reading - Makes notes on paragraphs in a reading passage, T/F/NG
- Listening - Completing a form
- Speaking - Part 1 - Talking about your home country. Part 2 - Talking about jobs, Part 3 - Developing complex sentences

Week 12-14 – Unit 11 - Culture and the Arts

- Language and Vocabulary - Art, definite and indefinite articles
- Reading - T/F/NG and short answer questions
- Writing - Task 1 - Describing pie charts. Task 2 - Reviewing essay collocations
- Listening - Section 3 multiple choice questions and completing tables
- Speaking - Part 1- Talking about arts events. Part 2 - Describing a favourite item. Part 3 - Giving reasons and examples

Week 15-17 - Unit 12 - Communication and Language

- Language and Vocabulary - Ellipsis and intonation
- Reading - Labelling a diagram
- Writing - Describing data and types of essay questions
- Listening - Choosing items from lists multiple choice questions
- Speaking - Part 2 - Giving full responses, back channeling. Part 3 - Talking about the importance of learning a language

Week 18 – Revision of Skills and content / Catch up on missed classes

Week 19 – Final Exams

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Behavioral Expectations

For the sake of all the members of the class, students are expected to respect themselves, their classmates, the teacher, and the facilities. Students must accept responsibility for themselves



and their actions. Students are expected to be ready at the start of every class (notebook, worksheets, English Folder, writing utensils, etc.) and to actively participate throughout the lesson until class is dismissed.

Additionally, all Thai students are expected to embrace the following *desired characteristics*:

- Possess discipline
- Eager to learn
- Be an AC gentleman
- Dedicated to work

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on-time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher in as far in advance as possible. Students are expected to catch up on all missed work outside of class time.

Homework & Classwork

Homework and classwork will be assigned often and must be submitted on or before the due date. Late assignments can be submitted but some marks will be taken off as a penalty. All late or missed assignments that are not turned in *before* the last week of the term will receive a zero.

Grading

This course follows to the Assumption College grading scale:

$Final\ Score \geq 80\%$	4.0
$75\% \leq Final\ Score < 80\%$	3.5
$70\% \leq Final\ Score < 75\%$	3.0
$65\% \leq Final\ Score < 70\%$	2.5
$60\% \leq Final\ Score < 65\%$	2.0
$55\% \leq Final\ Score < 60\%$	1.5
$50\% \leq Final\ Score < 55\%$	1.0
$Final\ Score < 50\%$	0.0

Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

Formative Score	50% or less
Behavior	10% (program mandated)
Midterm Exam	20% (program mandated)
Final Exam	20% (program mandated)



Recommendations for Success

English can be a difficult course for many students. All students are encouraged to try the following:

1. Have your materials for English on your desk at the beginning of class.
2. Pay attention and listen carefully while taking notes.
3. Always use English during discussions.
4. Do your homework yourself and do not copy.
5. Come see the teacher outside of class time for assistance.
6. Always do your best.



ST30201 Mechanics Physics 1

Teacher Mr. Daniel Lubarda

Contact EP Teacher Room, 2nd Floor Colombet Bldg.

Class Time EP-M4/2H: Mon, period 7; Thurs, period 6; Fri, period 5

Credits 2.0

Course Description

This physics course focuses on classical mechanics and is a continuation from SC30101 Foundation Physics. Building off the fundamentals of semester one, the course reviews Newton's laws and everyday forces, work and energy and introduces momentum and collisions, circular motion and gravitation, vibrations and waves, sound, and light. Physics 1 is 2.0 credits and therefore consists of four periods per week. The course offers both a conceptual foundation and an algebra-based presentation of physics. As with many courses within EP, critical thinking skills are emphasized over those of rote learning. The course will closely follow the order and content of the latest version of the American high school textbook, Holt *Physics*. The course is a prerequisite to SC30202 Physics 2.

Textbook

Physics, Holt McDougal 2012

ISBN-13: 978-0-547-58669-4; ISBN-10: 0-547-58669-8

Course Outline & Objectives

Chapter 4: Forces and the Laws of Motion

Section 1: Changes in Motion

- (Review Topic) Describe how force affects the motion of an object.
- Interpret and construct free-body diagrams.

Section 2: Newton's First Law

- Explain the relationship between the motion of an object and the net external force acting on the object.
- Determine the net external force on an object.
- Calculate the force required to bring an object into equilibrium.

Section 3: Newton's Second and Third Laws

- Describe an object's acceleration in terms of its mass and the net force acting on it.
- Predict the direction and magnitude of the acceleration caused by a known net force.
- Identify action-reaction pairs.

Section 4: Everyday Forces

- Explain the difference between mass and weight.
- Find the direction and magnitude of normal forces.
- Describe air resistance as a form of friction.
- Use coefficients of friction to calculate frictional forces.

Chapter 5: Work and Energy



Section 1: Work

- Recognize the difference between the scientific and ordinary definitions of work.
- Define work by relating it to force and displacement.
- Identify where work is being performed in a variety of situations.
- Calculate the net work done when many forces are applied to an object.

Section 2: Energy

- Identify several forms of energy.
- Calculate kinetic energy for an object.
- Apply the work-kinetic energy theorem to solve problems.
- Distinguish between kinetic and potential energy.
- Classify different types of potential energy.
- Calculate the potential energy associated with an object's position.

Section 3: Conservation of Energy

- Identify situations in which conservation of mechanical energy is valid.
- Recognize the forms that conserved energy can take.
- Solve problems using conservation of mechanical energy.

Section 4: Power

- Relate the concepts of energy, time and power.
- Calculate power in two different ways.
- Explain the effect of machines on work and power.

Chapter 6: Momentum and Collisions

Section 1: Momentum and Impulse

- Compare the momentum of different moving objects.
- Compare the momentum of the same object moving with different velocities.
- Identify examples of change in the momentum of an object.
- Describe changes in momentum in terms of force and time.

Section 2: Conservation of Momentum

- Describe the interaction between two objects in terms of the change in momentum of each object.
- Compare the total momentum of two objects before and after they interact.
- State the law of conservation of momentum.
- Predict the final velocities of objects after collisions, given the initial velocities.

Section 3: Elastic and Inelastic Collisions

- Identify different types of collisions.
- Determine the changes in kinetic energy during perfectly inelastic collisions.
- Compare conservation of momentum and conservation of kinetic energy in perfectly inelastic and elastic collisions.



- Find the final velocity of an object in perfectly inelastic and elastic collisions.

Chapter 7: Circular Motion and Gravitation

Section 1: Circular Motion

- Solve problems involving centripetal acceleration.
- Solve problems involving centripetal force.
- Explain how the apparent existence of an outward force in circular motion can be explained as inertia resisting the centripetal force.
- (Supplemental) Determine the contributing forces to the centripetal force.
- (Supplemental) Draw free-body diagrams of objects undergoing circular motion.
- (Supplemental) Describe the requirements for a vehicle negotiating a banked turn under various scenarios, e.g. lack of friction, varying velocities, etc.

Section 2: Newton's Law of Universal Gravitation

- Explain how Newton's law of universal gravitation accounts for various phenomena, including satellite and planetary orbits, falling objects, and the tides.
- Apply Newton's law of universal gravitation to solve problems.

Section 3: Motion in Space

- Describe Kepler's laws of planetary motion.
- Relate Newton's mathematical analysis of gravitational force to the elliptical planetary orbits proposed by Kepler.
- Solve problems involving orbital speed and period.

Section 4: Torque and Simple Machines

- Distinguish between torque and force.
- Calculate the magnitude of a torque on an object.
- (Review topic from EP 3) Identify the six types of simple machines.
- (Review topic from EP 3) Calculate the mechanical advantage of a simple machine.

Chapter 11: Vibrations and Waves

Section 1: Simple Harmonic Motion

- Identify the conditions of simple harmonic motion.
- Explain how force, velocity, and acceleration change as an object vibrates with simple harmonic motion.
- Calculate the spring force with Hooke's law.

Section 2: Measuring Simple Harmonic Motion

- Identify the amplitude of vibration.
- Recognize the relationship between period and frequency.
- Calculate the period and frequency of an object vibrating with simple harmonic motion.

Section 3: Properties of Waves



- Distinguish local particle vibrations from overall wave motion.
- Differentiate between pulse waves and periodic waves.
- Interpret waveforms of transverse and longitudinal waves.
- Apply the relationship among wave speed, frequency, and wavelength to solve problems.
- Relate energy and amplitude.

Section 4: Wave Interactions

- Apply the superposition principle.
- Differentiate between constructive and destructive interference.
- Predict when a reflected wave will be inverted.
- Predict whether specific traveling waves will produce a standing wave.
- Identify nodes and antinodes of a standing wave.

Chapter 12: Sound (*time permitting*)

Section 1: Sound Waves

- Explain how sound waves are produced
- Relate frequency to pitch.
- Compare the speed of sound in various media.
- Relate plane waves to spherical waves.
- Recognize the Doppler effect, and determine the direction of a frequency shift when there is relative motion between a source and an observer.

Chapter 13: Light and Reflection (*time permitting*)

Section 1: Characteristics of Light

- Identify the components of the electromagnetic spectrum.
- Calculate the frequency or wavelength of electromagnetic radiation.
- Recognize that light has a finite speed.
- Describe how the brightness of a light source is affected by distance.

Resources

Required	<ul style="list-style-type: none">• At least 3 notebooks (2 white, 1 pink)• Scientific calculator (not a phone-based application)• Ruler
Suggested	<ul style="list-style-type: none">• Many different colored pens/markers/highlighters• Electronic Thai-English translator (not a phone-based application)• A Matayom-level physics practice book in Thai

Academic Integrity Policy

Students are expected to adhere to the Assumption College student handbook. There is to be no plagiarism, no copying, and no cheating of any kind. These and any other acts of academic dishonesty lower the quality of the education and will not be tolerated. Students involved in any form of academic dishonesty, including any student supplying or allowing the copying to take place, will receive a zero.



Plagiarism is the act of taking someone else's work or ideas and passing them off as one's own work or ideas. Examples of plagiarism include the failure to give appropriate acknowledgement when repeating another's idea, phrase, sentence or paragraph, or failure to give appropriate acknowledgement when paraphrasing any of those.

Behavioral Expectations

For the sake of all the members of the class, students are expected to respect themselves, their classmates, the teacher, and the facilities. Students must accept responsibility for themselves and their actions. Students are expected to be ready at the start of every class (3 notebooks, textbook, scientific calculator, ruler, writing utensils, etc.) and to actively participate throughout the lesson until class is dismissed.

A behavior score (out of 5 points) is taken every day. At the end of the semester the average is taken and used for the student's behavior score (15%). Students *earn* the scores they receive.

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on-time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher in as far in advance as possible. Students are expected to catch up on all missed work outside of class time.

Homework & Classwork

Homework and classwork will be assigned often and must be submitted on or before the due date. Late assignments can be submitted for a maximum of 50% up until the last week of the term. All late or missed assignments that are not turned in *before* the last week of the term will receive a zero.

Grading

This course follows to the Assumption College grading scale:

<i>Final Score</i> $\geq 80\%$	4.0
$75\% \leq \textit{Final Score} < 80\%$	3.5
$70\% \leq \textit{Final Score} < 75\%$	3.0
$65\% \leq \textit{Final Score} < 70\%$	2.5
$60\% \leq \textit{Final Score} < 65\%$	2.0
$55\% \leq \textit{Final Score} < 60\%$	1.5
$50\% \leq \textit{Final Score} < 55\%$	1.0
<i>Final Score</i> $< 50\%$	0.0

Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

Quiz	20%
Homework/Classwork	15%
Project	10%
Behavior	15% (program mandated)
Midterm (Summative) Exam	20% (program mandated)
Final Exam	20% (program mandated)



Recommendations for Success

Physics can be a difficult course for many students. All students are encouraged to try the following:

1. Read, read, read the Holt *Physics* textbook. Oftentimes, reading the text once is not enough even for native English speakers. You may need to read the material multiple times to understand. By reading along at home with the lessons taught at school (typically only a few pages per night), students will be able to responsibly manage the material and gain the most from the course.
2. Search online, in either Thai or English, if you don't understand a topic discussed in class or simply to get a better understanding of the topic.
3. Get a Thai language introductory physics book.
4. Get a math and/or physics tutor. The tutor should be helping you learn, not doing the work for you!
5. Do **not** copy your classmates work; struggle through and do the work on your own! This is how you learn!
6. Come see the teacher outside of class time for assistance.
7. Do more than just the bare minimum; there are plenty of problems in the textbook. We only have time for so many of them. Do the review questions at the end of the chapter and see the teacher for the answers.
8. Study the notes and vocabulary at least a few minutes every day, such as in homeroom or during any free time you might have in other classes.



ST30231 Universal Chemistry

Teacher Mr. Michael Dew

Contact EP Teacher Room, 2- Floor Colombet Bldg.

Class Time EP-M 4/1: Monday Period 1, Wednesday Period 2

Credits 1.5 (2 lessons per week)

Course Description

Universal Chemistry is the second installment within the comprehensive Chemistry program offered here at Assumption College English Program. This course serves as a continuation into a student's progression within the subject as the course material will build upon prior knowledge and advance into more complex and detailed areas of Chemistry. Within this semester, redox reactions, electrolysis, energy changes, rates of reaction, and reactivity of metals will be explored and discussed.

Demonstrations, computer-simulated activities and laboratory experiments will allow students to learn basic laboratory techniques, lab safety and get a hands-on experience of the theories and concepts learned in the lectures. As with many courses within the English Program, critical thinking skills are emphasized over those of rote learning and BMAT- style questions are a part of the evaluation process. The course will follow the content of BMAT Past Paper Worked Solutions by Black Stone Tutors.

Textbook

- *Cambridge IGCSE & O Level Chemistry*
By RoseMarie Gallagher
and Paul Ingram

Supplementary:

- N/A

Course Outline & Objectives

Reversible Reactions and Equilibrium (Chapter 10)

- Reversible reactions
- Shifting the Equilibrium
- The Haber Process
- The Contact Process

The Behavior of Metals (Chapter 13)

- Comparing Metals and Non-metals
- Comparing Metals for reactivity
- Metals in Competition
- Reactivity Series
- Rusting of Iron

Extracting and Using Metals (Chapter 14)

- Metal Ores and Metal Extraction
- Extracting Iron



- Extracting Aluminum
- Making use of metals
- Metals and Alloys

Organic Chemistry (Chapter 16)

- Petroleum
- Refining petroleum
- Families of Organic Compounds
- Alkanes and Alkenes
- Alcohols and Carboxylic Acids

Polymers (Chapter 17)

- Introduction to Polymers
- Addition Polymerization
- Condensation Polymerization
- Plastics
- The Plastics Problem

Resources

- | | |
|-----------|---|
| Required | <ul style="list-style-type: none">• Assumption Notebook (2)• Binder/ folder• Scientific calculator (not a phone-based application)• Ruler |
| Suggested | <ul style="list-style-type: none">• Many different colored pens/markers/highlighters• Electronic Thai-English translator (not a phone-based application)• A Matayom-level chemistry practice book in Thai |

Academic Integrity Policy

Students are expected to adhere to the Assumption College student handbook. There is to be no plagiarism, no copying, and no cheating of any kind. These and any other acts of academic dishonesty lower the quality of the education and will not be tolerated. Students involved in any form of academic dishonesty, including any student supplying or allowing the copying to take place, will receive a zero.

Plagiarism is the act of taking someone else's work or ideas and passing them off as one's own work or ideas. Examples of plagiarism include the failure to give appropriate acknowledgement when repeating another's idea, phrase, sentence or paragraph, or failure to give appropriate acknowledgement when paraphrasing any of those.

Behavioral Expectations

For the sake of all the members of the class, students are expected to respect themselves, their classmates, the teacher, and the facilities. Students must accept responsibility for themselves and their actions. Students are expected to be ready at the start of every class (Notebook, textbook, scientific calculator, writing utensils, etc.) and to actively participate throughout the lesson until class is dismissed.



A behavior score (out of 5 points) is taken every day. At the end of the semester the average is taken and used for the student's behavior score (10%).

Additionally, all Thai students are expected to embrace the following *desired characteristics*:

- Possess discipline - Eager to learn
- Be an AC gentleman - Dedicated to work

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on-time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher as far in advance as possible. Students are expected to catch up on all missed work outside of class time.

Homework & Classwork

Homework and classwork will be assigned often and must be submitted on or before the due date. Late assignments can be submitted for a maximum of 50% up until the last week of the term. All late or missed assignments that are not turned in *before* the last week of the term will receive a zero.

Grading

Foundation Chemistry follows to the Assumption College grading scale:

$Final\ Score \geq 80\%$	4.0
$75\% \leq Final\ Score < 80\%$	3.5
$70\% \leq Final\ Score < 75\%$	3.0
$65\% \leq Final\ Score < 70\%$	2.5
$60\% \leq Final\ Score < 65\%$	2.0
$55\% \leq Final\ Score < 60\%$	1.5
$50\% \leq Final\ Score < 55\%$	1.0
$Final\ Score < 50\%$	0.0

Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

Homework/Classwork/Labs	30%
Class Test	20%
Behavior	10% (program mandated)
Midterm Exam	20% (program mandated)
Final Exam	20% (program mandated)



Recommendations for Success

Chemistry can be a difficult course for many students. All students are encouraged to try the following:

1. Read, read, read the Chemistry textbook. Oftentimes, reading the text once is not enough even for native English speakers. You may need to read the material multiple times to understand. By reading along at home with the lessons taught at school (typically only a few pages per night), students will be able to responsibly manage the material and gain the most from the course.
2. Search online, in either Thai or English, if you don't understand a topic discussed in class or simply to get a better understanding of the topic.
3. Get a Thai language introductory chemistry book.
4. Do **not** copy your classmate's work; struggle through and do the work on your own! This is how you learn!
5. Come see the teacher outside of class time for assistance.
6. Do more than just the bare minimum; there are plenty of problems in the textbook. We only have time for so many of them. Do the review questions at the end of the chapter and see the teacher for the answers.
7. Study the notes and vocabulary at least a few minutes every day, such as in the homeroom or during any free time you might have in other classes.



ST30246	Biodiversity
Teacher	Mr. Nicholas Crook
Contact	EP Teacher Room, 2 nd Floor Colombet Bldg.
Email	epacnic@gmail.com
Class Time	EP-M 4/2: Mon, period 4; Wed, period 6; Fri period 4.
Credits	1.5

Course Description

This biology course focuses on the following contents: biodiversity and the connection between the genetic diversity, species diversity and ecological diversity, forming of the protocell of living organisms and the evolution of the single celled organisms, bacterial organisms, protist, plants, fungus and animals, organism classification from large scale to smaller ones and the methods of creating scientific names in sequence of species, creation of Dichotomous Key to identify the organism or the selected samples that have been categorized into groups, application of knowledge about biotechnology, energy from the agricultural raw materials: biomass gas and ethanol to explain about alternative energy for future use. The course will closely follow the order and content of the latest version of the American high school textbook *Biology*, by Pearson.

Textbook

Biology, by Pearson (ISBN-13: 978-0-328-92512-4)

Course Outline & Objectives

TERM 2: Biodiversity

Chapter: 6

6.3 Diversity [Indicators 1-3]

- Discuss the significance of biodiversity.
- Explain the connection between genetic – species – and ecological diversity.

Chapter : 7

7.1 Protocells [Indicators 4-6]

- Explain about protocells of organisms.
- Describe evolution of singled celled organisms

Chapters : 20/21/25

20.2 Bacterial Organisms [Indicators 7-9, 38]

- Explain important characteristics of bacteria.
- Give examples of bacteria.

21.2 Protist Organisms [Indicators 10-12, 39]

- Explain important characteristics of protists.
- Give examples of protists.

22.1 Plant Organisms [Indicators 13-14, 40]

- Explain important characteristics of plants.
- Give examples of plants.



- 21.4 Fungus Organisms [Indicators 13-14, 40]
 - Explain important characteristics of fungi.
 - Give examples of Fungi.
- 25.1 Animal Organisms [Indicators 13-14, 40]
 - Explain important characteristics of animals.
 - Give examples of animals.

End of Midterm Exam Content – Start of Final Exam Content

TERM 2: Biodiversity.

Chapter 18: Classification of Organisms.

- 18.1 Classification System [Indicators 15-19]
 - Explain the classification system from large to small scale.
 - Describe the methods used to create scientific names of organisms.
 - Describe the sequence of classifying organisms of a species.
 - Give examples of the classification of specific species.
- 18.2 Create Dichotomous Key [Indicators 20-23]
 - Explain the function of a dichotomous key system.
 - Describe the process for creating a dichotomous key.
 - Categorize selected organisms into groups.

Chapter: Biotechnology.

- 1 Biotechnology [Indicator 29]
 - Search for information about biotechnology.
 - Discuss biotechnology.
 - Apply knowledge about biotechnology.
- 2 Energy from agricultural raw materials [Indicators 30-32]
 - Explain alternative energy such as biomass gas and ethanol for future use.

Resources

Required ☐ Textbook: *Biology*, by Pearson

☐ Plastic Folder for Biology only (to keep handouts, etc.)

Suggested ☐ Many different colored pens/markers/highlighters

☐ Electronic Thai-English translator (not a phone-based application)

☐ Ruler

☐ Glue stick, stapler, or tape

Academic Integrity Policy

Students are expected to adhere to the Assumption College student handbook. There is to be no plagiarism, no copying, and no cheating of any kind. These and any other acts of academic dishonesty lower the quality of the education and will not be tolerated. Students involved in any form of academic dishonesty, including any student supplying or allowing the copying to take place, will receive a zero.

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acknowledgement when repeating another's idea, phrase, sentence or paragraph, or failure to give appropriate acknowledgement when paraphrasing any of those.

Behavioral Expectations

For the sake of all the members of the class, students are expected to respect themselves, their classmates, the teacher, and the facilities. Students must accept responsibility for themselves and their actions. Students are expected to be ready at the start of every class (textbook, plastic folder for handouts, writing utensils, etc.) and to actively participate throughout the lesson until class is dismissed.

A behavior score (out of 3 points) is taken every day. At the end of the semester the average is taken and used for the student's behavior score (10%). Students *earn* the scores they receive.

Additionally, all Thai students are expected to embrace the following *desired characteristics*:

- Possess discipline
- Eager to learn
- Be an AC gentleman
- Dedicated to work

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher in as far in advance as possible. Students are expected to catch up on all missed work outside of class time.

Homework & Classwork

Homework and classwork will be assigned often and must be submitted on or before the due date. No late assignments will be accepted unless the student is absent the day the assigned work is due. If a student is absent the day an assignment is due, the assigned work will be due at the beginning of the following class. Remember- it is the student's responsibility to remember what and when assignments are due.

Grading

This course follows to the Assumption College grading scale:

<i>Final Score</i> $\geq 80\%$	4.0
$75\% \leq \textit{Final Score} < 80\%$	3.5
$70\% \leq \textit{Final Score} < 75\%$	3.0
$65\% \leq \textit{Final Score} < 70\%$	2.5
$60\% \leq \textit{Final Score} < 65\%$	2.0
$55\% \leq \textit{Final Score} < 60\%$	1.5
$50\% \leq \textit{Final Score} < 55\%$	1.0



Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

Homework/Classwork	30%
Quizzes	20%
Behavior	10% (program mandated)
Midterm (Summative) Exam	20% (program mandated)
Final Exam	20% (program mandated)

Recommendations for Success

Biology can be a difficult course for many students. All students are encouraged to try the following:

1. Read, read, read the *Biology*, by Pearson textbook. Oftentimes, reading the text once is not enough even for native English speakers. You may need to read the material multiple times to understand. By reading along at home with the lessons taught at school (typically only a few pages per night), students will be able to responsibly manage the material and gain the most from the course.
2. Search online, in either Thai or English, if you don't understand a topic discussed in class or simply to get a better understanding of the topic.
3. Get a Thai language introductory biology book.
4. Do **not** copy your classmates work; struggle through and do the work on your own!
This is how you learn!
5. Come see the teacher outside of class time for assistance.
6. Do more than just the bare minimum; there are plenty of problems in the textbook. We only have time for so many of them. Do the review questions at the end of the chapter and see the teacher for the answers.
7. Study the notes and vocabulary at least a few minutes every day, such as in homeroom or during any free time you might have in other classes.



Student Syllabus for: EP4 English for Life Skills 2: EN30242

Teacher: Mr. Joshua Bolen, (Mr. Bolen)

COURSE DESCRIPTION:

Welcome to English for Life Skills M4! Through a series of engaging and enriching lessons using Mr. Bolen's selected materials, students will continue to strengthen their core knowledge of the language.

The students will study and listen to a range of English texts. They will use learning skills in the 21st century, which encourages the students to be able to have listening, critical thinking and problem-solving skills. The learning skills will be used to make students possess learners' key competencies, which are thinking capability, problem solving capability, capability in applying life skills and capability in technological application. This will be done through the teaching and learning focusing on promoting Thai wisdom with respect to the language and literature and religion and tradition. Teaching and learning also promotes students to live under the Sufficiency Economy Philosophy. Students will be provided with desirable characteristics such as love of nation, religion and king, honesty and integrity and self-discipline. Additional important characteristics are avidity for learning, observance of principles of Sufficiency Economy Philosophy in one's way of life, dedication and commitment to work, cherishing Thai-ness, public-mindedness, and gentlemen of Assumption College.

COURSE OBJECTIVES:

Indicators

1. Using speaking and writing styles in a range of contexts and situations.
2. Understand linking words when writing. Show a knowledge and understanding of linking words and how and why they are used. Make lists of the most common linking words.
3. Practice speaking activities that are connected relevant to IELTS.
4. Explain/discuss how vocabulary and speaking can be improved.
5. Use verbal communication to effectively present information.
6. Talk and write interactively about personal information and other surrounding incidents, experiences, situations, news/events, and interesting issues in public attention, and communicate continuously and properly.

Learning Contents

This course is for preparation of the IELTS examination.

Use process of establishing knowledge and understanding, reading process, process of establishing practical skills, working process, process of language skills, process of establishing attitudes, process of conceptualization, process of analysis, process of establishing realization, and process of establishing communicative knowledge and understanding to create knowledge and understanding, communicative ability, thinking ability, problem-solving ability, life skills, and ability to use technology. At the same time, students will have the following intended characteristics which are nationalism, religiosity, loyalty, disciplines, diligence, self-sufficiency, endeavor, love of being Thai, and public mind.



Resources

- Required
- ☐ At least 1 white notebook.
 - ☐ Dictionary (English to English, not a translating one)
 - ☐ Extra lines A4 paper for written assignments.

- Suggested
- ☐ Many different colored pens/markers/highlighters

Academic Integrity Policy

Students are expected to adhere to the Assumption College student handbook. There is to be no plagiarism, no copying, and no cheating of any kind. These and any other acts of academic dishonesty lower the quality of the education and will not be tolerated. Students involved in any form of academic dishonesty, including any student supplying or allowing the copying to take place, will receive a zero.

Plagiarism is the act of taking someone else's work or ideas and passing them off as one's own work or ideas. Examples of plagiarism include the failure to give appropriate acknowledgement when repeating another's idea, phrase, sentence or paragraph, or failure to give appropriate acknowledgement when paraphrasing any of those.

Behavioral Expectations

For the sake of all the members of the class, students are expected to respect themselves, their classmates, the teacher, and the facilities.

Students must accept responsibility for themselves and their actions. Students are expected to be ready at the start of every class (notebooks, textbook, writing utensils, etc.) and to actively participate throughout the lesson until class is dismissed.

Behavior is monitored every day as per the class rules that are set out at the beginning of the academic year (see the front of your note books). At the end of the semester the average is taken and used for the student's behavior score (20%). Students *earn* the scores they receive.

Additionally, all Thai students are expected to embrace the following *desired characteristics*:

- Love for the country and the King, faith in religion
- Possess discipline
- Be self-sufficient
- Proud to be Thai
- Be an A.C. gentleman
- Eager to learn
- Dedicated to work
- Have a sense of public consciousness
- Be honest and upright

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on-time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher in as far in advance as possible. Students are expected to catch up on all missed work outside of class time.



Homework & Classwork

Homework and classwork will be assigned often and must be submitted on or before the due date for a score of 20 points. If the work is not done for the start of class, a maximum score of 15 will be possible. After more than one day has lapsed, a maximum score of 10 will be available. Late assignments can be submitted for a maximum of 50% (10 points) up until the last week of the term. All late or missed assignments that are not turned in *before* the last week of the term will receive a zero.

Grading

This course follows to the Assumption College grading scale:

$Final\ Score \geq 80\%$	4.0
$75\% \leq Final\ Score < 80\%$	3.5
$70\% \leq Final\ Score < 75\%$	3.0
$65\% \leq Final\ Score < 70\%$	2.5
$60\% \leq Final\ Score < 65\%$	2.0
$55\% \leq Final\ Score < 60\%$	1.5
$50\% \leq Final\ Score < 55\%$	1.0
$Final\ Score < 50\%$	0.0

Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

Total Score of all Assessment	Homework 80%
Behavior	10%
Attendance	10%

Recommendations for Success

English can be a difficult course for many students. All students are encouraged to try the following:

1. Be on task during class. Focus and follow instructions and do the required activities to your best abilities. Do not worry about making mistakes as they are the best way for us to incorporate the materials into our long-term memories.
2. Watch Movies, or TV shows, or YouTube with British / Australian accents, with the English subtitles is a good way to improve your speaking and listening skills; it also helps with vocabulary too.



3. Search online (in English) if you don't understand a topic discussed in class to get a better understanding of the topic.
4. Do not copy your classmate's work; struggle through and do the work on your own. This is how you learn.
5. Come see the teacher outside of class time for assistance.
6. Revise your work, as recommended by your teacher and work to continuously improve your work. Learning is a process, not a product.

Precise resources:

- **Teacher** Handouts, Worksheets, Presentations.
- Whiteboards & Projector.



OC30104 Foundation Occupational Works 1

Teacher Dr Hermann Gruenwald

Contact EP Teacher Room, 2nd Floor Colombet Building
Hermann_GR@assumption.gmail.com

Website <https://classroom.google.com/c/ODEwODExOTEzMzE1>

Class Time EP-M4/1: Monday 11:10 -12:00

Credits 0.5

Course Description

This introduction to the upper-mathayom Occupational Works course focuses on the basic principles of craftwork and the development of skills and creativity in producing craftworks. Group, pair, and individual work will incorporate theory of craftwork with a practical integration.

Students will work on projects which give them the opportunity for creativity and design. They will refine their research, planning, designing, and collaborative skills and apply them to producing craftwork that include woodwork and electrical work. Students will gain experience in using a variety of tools as well as developing their working processes.

The goals of the Occupational Works subject are to:

- endow students with creative opportunities and curiosity
- refine skills for individual and group working processes such as management, teamwork, problem-solving and attention to detail
- develop and apply research and investigation skills to coursework
- improve awareness of human impact on the environment for one's life and family
- acquire technological knowledge for occupational development
- promote awareness of nationalism, religiosity, royalty, honesty, self-discipline, studiousness, self-sufficiency, endeavor, love of being Thai, and public-mindedness.

Course Outline & Objectives

Unit 1: Basic principles of craftwork (theory)

Unit 1.1: Woodwork and electrical work for crafts (*Indicators 1, 2, 3, 5*)

- Understand the working process for creating craftwork.
- Research and identify basic woodworking tools and their applications for crafts.
- Research and identify basic electrical tools / devices and their applications for crafts.

Unit 1.2: Design and selection of material for craftwork (*Indicators 1, 2, 3, 4, 7*)

- Recognize the basic principle and procedure for creating craftwork with creativity.
- Identify how to select appropriate materials for craftwork based on limitations of tools, equipment and funds (reuse or recycle items).

Unit 1.3: Creativity and intellectual property (*Indicators 3, 4, 5, 11*)

- Identify the process of designing with creativity using modern examples.
- Distinguish between various aspects of intellectual property protection such as; copyright, trademarks, geographical indication and patents.
- Compare tangible versus intangible intellectual property.
- Discuss methods of enforcing intellectual property rights if they are violated.



Unit 1.4: Creative Occupations (*Indicators 8, 9, 10*)

- Discuss types of creative occupations and guidelines for taking them up.
- Students determine if they have aptitude and interest in creative occupations.
- Identify ways to gain experience in creative occupations of interest.

Unit 2: Integration for craftworks (practice)

Unit 2.1: Craftwork for environmental conservation (*Indicators 3, 4, 6, 7*)

- Produce your own work from leftover materials to help reduce global warming effects (individual work).
- Create, design and select materials appropriate to the brief.

Unit 2.2: Useful crafts (*Indicators 1, 2, 3, 4, 5, 6*)

- Express in writing the inspiration to create the work.
- Write the plan for the project.
- Use woodworking skills to create an item in pairs.

Unit 2.3: Craft project (*Indicators 2, 3, 4, 5, 6, 7, 11*)

- Work in groups to create an electrical item.
- Present work by setting up an exhibition
- Take photographs of your craftworks and present your work online.

Resources

Required	<ul style="list-style-type: none">• Pink AC notebook A3• AC 3 ring binder portfolio A4• Basic stationary (pen, pencil, eraser, ruler, glue, sharpener etc)
Suggested	<ul style="list-style-type: none">• Various colored pens / markers / highlighters / pencils
Occasional	<ul style="list-style-type: none">• Electrical / woodworking tools• Specific craftwork materials or items• Leftover waste materials to construct projects <p><i>The above will be requested a week in advance of use</i></p>

Academic Integrity Policy

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Plagiarism is the act of taking someone else's work or ideas and passing them off as one's own work or ideas. Examples of plagiarism include the failure to give appropriate acknowledgement when repeating another's idea, phrase, sentence or paragraph, or failure to give appropriate acknowledgement when paraphrasing any of those.



Behavioral Expectations

For the sake of all the members of the class, students are expected to respect themselves, their classmates, the teacher, and the facilities. Students must accept responsibility for themselves and their actions. Students are expected to be ready at the start of every class (sketch book, basic stationary, materials, ingredients etc.) and to actively participate throughout the lesson until class is dismissed.

Behavior and participation is monitored during every class and points are deducted for misbehavior, non-participation or disruption to the class. This is averaged throughout the semester and calculated as a score of 10 at the end of semester.

Additionally, all Thai students are expected to embrace the following *desired characteristics*:

- Possess discipline
- Be an AC gentleman
- Be honest and upright
- Be eager to learn
- Be dedicated to work
- Have a sense of public-consciousness

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on-time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher in as far in advance as possible. Students are expected to catch up on all missed work outside of class time.

Homework & Class Work

Homework and class work will be assigned often, must be completed to a high standard and be submitted on or before the due date. Late assignments are subject to 50% less marks for each week they are late. All missed assignments will receive a zero and will dramatically reduce the averaged class work and homework scores of the individual.

Grading

This course follows to the Assumption College grading scale:

$Final\ Score \geq 80\%$	4.0	A
$75\% \leq Final\ Score < 80\%$	3.5	B+
$70\% \leq Final\ Score < 75\%$	3.0	B
$65\% \leq Final\ Score < 70\%$	2.5	C+
$60\% \leq Final\ Score < 65\%$	2.0	C
$55\% \leq Final\ Score < 60\%$	1.5	D+
$50\% \leq Final\ Score < 55\%$	1.0	D
$Final\ Score < 50\%$	0.0	F



Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

Behavior & Participation	20%	Affective Domain
Formative 1 Class Work & Home Work	15%	Formative
Formative 2 Class Work & Home Work	15%	Formative
STEM	10%	Formative
Midterm Exam	20 %	Exams
Final Exam	20%	Exams

Recommendations for Success

1. Bring all the materials that are needed to complete projects on the day of class
2. Be creative and work hard for your own success and learning.
3. Don't be afraid to experiment and have fun studying
4. Plan projects carefully and have the required materials for your project
5. Keep your notebook tidy, attractive and up-to-date and submit work on time
6. Check schoology.com for assignments and course materials and grades



ST30292 Health Science

Teacher: Mr. Grant Shorten

Contact: Teachers Room, 2nd Floor Colombet Building.

grant.sh@assumption.ac.th

Class Time: EP-M4/2H

Credits: 1

Course Description

The M4 Health Science course offers an in-depth exploration of cellular biology, genetics, and the processes that underlie the growth, development, and reproduction of living organisms. This course provides a comprehensive understanding of the structure and function of cells, the mechanisms of cell division, and the principles of inheritance. This course prepares students for advanced studies in health sciences, providing a solid foundation in cellular biology and genetics essential for careers in medicine, research, and biotechnology.

Textbook

No Textbook

External Resources

Course Outline & Objectives

1. Cell Structure and Function:

- Understand the structure and function of the main sub-cellular components of both animal and plant eukaryotic cells.
- Explore the structure and function of the main sub-cellular components of prokaryotic cells (bacteria).

2. Levels of Organization:

- Learn about the levels of biological organization from cells to tissues to organs to organ systems.

3. Transport Processes:

- Understand the processes of diffusion, osmosis, and active transport, including examples in living and non-living systems.

4. Mitosis and the Cell Cycle:

- Understand that the cell cycle includes interphase (cell growth and DNA replication) and mitosis (division leading to genetically identical daughter cells).
- Learn the role of mitosis in growth, tissue repair, replacement of worn-out cells, and asexual reproduction.
- Understand that cancer results from changes in cells leading to uncontrolled growth and division.

5. Meiosis and the Cell Cycle:

- Understand that the cell cycle includes interphase and meiosis.
- Learn the role of meiosis in reducing chromosome number and restoring the full chromosome complement at fertilization.

6. Reproduction:

- Understand that asexual reproduction involves one parent and produces genetically identical offspring when no mutations occur.



- Learn that sexual reproduction involves two parents, producing genetically different offspring, which leads to increased variation.
- Know that in most mammals, including humans, females are XX and males are XY.
- Be able to establish the sex and ratio of offspring using genetic diagrams.

7. Genetics:

- Understand that the nucleus is the site of genetic material (chromosomes/genes) in plant and animal cells.
- Learn key genetic terms: gene, allele, dominant, recessive, heterozygous, homozygous, phenotype, genotype, and chromosome.
- Use and interpret genetic diagrams to depict monohybrid (single gene) crosses.
- Use family trees/pedigrees to express outcomes as ratios, numbers, probabilities, or percentages.
- Understand the concept of inherited conditions.
- Know that most phenotypic features result from multiple genes rather than single-gene inheritance.

Learning Outcomes:

By the end of this course, students will be able to:

- Describe the structure and function of cellular components in eukaryotic and prokaryotic cells.
- Explain the hierarchical levels of biological organization.
- Illustrate and differentiate the processes of diffusion, osmosis, and active transport.
- Detail the phases of the cell cycle, including the roles of mitosis and meiosis.
- Discuss the mechanisms and implications of asexual and sexual reproduction.
- Utilize genetic diagrams and pedigrees to predict and interpret inheritance patterns.
- Understand and apply fundamental genetic concepts and terminology.

If you have questions about the class or your grade you can email me at:

grant.sh@assumption.ac.th

Resources Required

A plastic folder for worksheets.

White School Notebook

Red and blue pen

Ruler

Academic Integrity Policy

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scores. Scores of pass should not be given unless the student has attained sufficient knowledge to earn a passing grade.

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Behavioural Expectations

For the sake of all the members of the class, students are expected to respect themselves, their classmates, the teacher, and the facilities. Students must accept responsibility for themselves and their actions. Students are expected to be ready at the start of every class (Notebooks, textbook, scientific calculator, writing utensils, etc.) and to actively participate throughout the lesson until class is dismissed.

Behaviour is monitored every day as per the class rules that are set out at the beginning of the academic year (see the front of your note books). At the end of the semester the average is taken and used for the student's behaviour score (10%). Students *earn* the scores they receive.

Additionally, all Thai students are expected to embrace the following *desired characteristics*:

- Love for the country and the King, faith in religion
- Possess discipline
- Be self-sufficient
- Proud to be Thai
- Be an AC gentleman
- Eager to learn
- Dedicated to work
- Have a sense of public consciousness
- Be honest and upright

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on-time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher in as far in advance as possible. Students are expected to catch up on all missed work outside of class time.

Homework & Classwork

Homework and classwork will be assigned often and must be submitted on or before the due date for a full score of 10 points. Late work without excuse will be deducted at the rate of 10% per day until the maximum possible score is zero. All work must be turned in before the last week of each term. Late work is discouraged.



Grading

This course follows to the Assumption College grading scale:

<i>Final Score</i> $\geq 80\%$	4.0
$75\% \leq \textit{Final Score} < 80\%$	3.5
$70\% \leq \textit{Final Score} < 75\%$	3.0
$65\% \leq \textit{Final Score} < 70\%$	2.5
$60\% \leq \textit{Final Score} < 65\%$	2.0
$55\% \leq \textit{Final Score} < 60\%$	1.5
$50\% \leq \textit{Final Score} < 55\%$	1.0
<i>Final Score</i> $< 50\%$	0.0

Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

Class work	20%
Class Participation	10%
Note book	10%
Behavior	10%
Quizzes	10%
Midterm (Summative) Exam	20% (program mandated)
Final Exam	20% (program mandated)

Recommendations for Success

Health can be a difficult course for many students. All students are encouraged to try the following:

1. Read, read, read the course textbook. Often, reading the text once is not enough even for native English speakers. You may need to read the material multiple times to understand. By reading along at home with the lessons taught at school (typically only a few pages per night), students will be able to responsibly manage the material and gain the most from the course.
2. Search online, in either Thai or English, if you don't understand a topic discussed in class or simply to get a better understanding of the topic.
3. Do **not** copy your classmates work; struggle through and do the work on your own! This is how you learn!
4. Come see the teacher outside of class time for assistance.
5. Do more than just the bare minimum; there are plenty of problems in the textbook. We only have time for so many of them. Do the review questions at the end of the chapter and see the teacher for the answers.
6. Study the notes and vocabulary at least a few minutes every day, such as in homeroom or during any free time you might have in other classes.



ST30105 Design & Technology

Teacher	Mr. Matt Harris
Contact	Location: 5th Floor Computer Lab
Class Time	EP-M 4/1: Wednesday 13:00 – 13:50 EP-M 4/2: Thursday 09:20 – 10:10 EP-M 4/3: Wednesday 14:00 – 14:50
Credits	1.0

Course Description

To understand the key concepts of Design & Technology for living in a rapidly changing society; apply knowledge and skills in science, mathematics and other disciplines to creatively solve problem or develop work by using the engineering design process; select technology to use properly by taking into account impacts on life, society, and environment. Students will study the following topics: main concepts of technology, relationships of technology with other fields of study especially science or mathematics; evaluating its impact on humans, society, economy and environment so as to use the information as a guideline for developing technology. Students will apply many learning processes: attitude development process, knowledge and understanding development process, critical thinking process, practicing process and problem-solving process.

Course Outline & Objectives

Topics include: [Indicator 1,2,3,4]

Design & Technology [Indicator 1, 2, 3, 4]

Resources

Required • EP Computer Lab

Academic Integrity Policy

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Behavioral Expectations

For the sake of all the members of the class, students are expected to respect themselves, their classmates, the teacher, and the facilities. Students must accept responsibility for themselves and their actions. A behavior score (out of 10 points) is taken every day. At the end of the semester the average is taken and used for the student's behavior score (10%). Students *earn* the scores they receive.

Additionally, all Thai students are expected to embrace the following *desired characteristics*:

- Love for the country and the King, faith in religion
- Possess discipline
- Be self-sufficient
- Proud to be Thai
- Be an AC gentleman
- Eager to learn
- Dedicated to work
- Have a sense of public consciousness
- Be honest and upright

Attendance & Tardiness

Attendance will be taken at the start of every class. Students are expected to be in class on-time, every time. Unexcused absences or tardiness will not be tolerated. In the case of planned absences, please notify the teacher in as far in advance as possible. Students are expected to catch up on all missed work outside of class time.

Homework & Classwork

Homework and classwork will be assigned often and must be submitted on or before the due date. Late assignments can be submitted for a maximum of 50% up until the last week of the term. All late or missed assignments that are not turned in *before* the last week of the term will receive a zero.

Grading

This course follows to the Assumption College grading scale:

$Final\ Score \geq 80\%$	4.0
$75\% \leq Final\ Score < 80\%$	3.5
$70\% \leq Final\ Score < 75\%$	3.0
$65\% \leq Final\ Score < 70\%$	2.5
$60\% \leq Final\ Score < 65\%$	2.0
$55\% \leq Final\ Score < 60\%$	1.5
$50\% \leq Final\ Score < 55\%$	1.0
$Final\ Score < 50\%$	0.0



Evaluation and Assessment

The final semester grade for this course out of 100% is broken down as follows:

STEAM	10%
Homework/Classwork	30%
Coursework	30%
Behavior	10% (program mandated)
Midterm Exam/Project	10% (program mandated)
Final Exam	10% (program mandated)

Recommendations for Success

Information technology can be a difficult course for many students. All students are encouraged to try the following:

1. Read, read, read the teacher's online notes. Oftentimes, reading the text once is not enough even for native English speakers. You may need to read the material multiple times to understand. By reading along at home with the lessons taught at school (typically only a few pages per night), students will be able to responsibly manage the material and gain the most from the course.
2. Search online, in either Thai or English, if you don't understand a topic discussed in class or simply to get a better understanding of the topic.
3. Do **not** copy your classmates work; struggle through and do the work on your own! This is how you learn!
4. Come see the teacher outside of class time for assistance.
5. Do more than just the bare minimum; there are plenty of problems in the teacher's online notes. We only have time for so many of them. Do the review questions at the end of the chapter and see the teacher for the answers.
6. Study the notes and vocabulary at least a few minutes every day, such as in homeroom or during any free time you might have in other classes.