

# Dáнас sa Paggámit ng Wikàng Filipino sa Pagtuturò ng 'Matemátiká sa Makabágong Daigdíng'

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Samahan ng mga Guro sa Intelektuwalisasyon ng Filipino (SAGIF)  
National Webinar Workshop



Theme: Gearing Up Philippine Mathematics Education: A Comprehensive Colloquium of Cutting-edge  
Teaching and Learning Practices in the COVID-19 Era and Beyond

1:00 pm–3:00 pm, May 1, 2022

**Master Premium Sardines  
with Ampalaya (BITTER GOURD)**

Lasapin ang healthy goodness ng **Master Premium Sardines with Ampalaya!** Mula sa leading makers ng quality canned fish, doble ang sarap na matítkmán dahil sa lusog-busog combo ng sardines at ampalaya, now enriched with thicker, tastier tomato sauce flavored with special spices. Nutritious din dahil sa **Vitamin A** for good eyesight, **Vitamin C** at **Iron**. May **Calcium** for strong bones at **Protein** for strong muscles. Kaya kahit straight from can, rice topping o palaman, enjoy ang sarap ng **Master Premium Sardines with Ampalaya in Tomato Sauce!**

**INGREDIENTS:**  
Sardines, Water, Tomato Paste, Modified Starch, Iodized Salt, Refined Sugar, Garlic, Onion, Ampalaya Fruit, Ampalaya Leaves extract

  Manufactured by:  
**Universal Canning Inc.**  
Calle San Isidro, Ayala,  
Zamboanga City

Master Premium Sardines with Ampalayá (Bitter Gourd). Lasapín ang healthy goodness ng Master Premium Sardines with Ampalayá! Mulâ sa leading makers ng quality canned fish, dóble ang saráp na matítikmán dáhil sa lusóg-busóg combo ng sardines at ampalayá, now enriched with thicker, tastier tomato sauce flavored with special spices. Nutritious din dáhil sa Vitamin A for good eyesight, Vitamin C at Iron. May Calcium for strong bones at Protein for strong muscles. Kayâ káhit straight from can, rice topping o palamán, enjoy ang saráp ng Master Premium Sardines with Ampalayá in Tomato Sauce!

Oktubre 10, 2016–Oktubre 28, 2016 *Training of GE trainors*

Abril 24, 2017–Mayo 13, 2017 *Second-generation GE faculty training*

Setyembre 2, 2017–Setyembre 3, 2017 *CODDCCAS V Conference and Enrichment Sessions on the New GEC*

Nobyembre 2017–Marso 2018 MTHS102 Matemátiká sa Makabágong Daigdíg

Sa kasalukúyan Mga pagsasánay at sangguniáng babasahín

# Training of GE trainors

General objectives (CHED, 2016)

*The Faculty Training for the New General Education Core Courses of the Commission on Higher Education through the Technical Panel for General Education (TPGE) aims to:*

- 1. Orient faculty participants about the philosophy of liberal education, away from the strictly disciplinal and remedial thrust of current GE courses;*
- 2. Enable the said faculty participants to teach the interdisciplinary GE core courses using the new materials;*
- 3. Enable qualified faculty members to serve as Trainors of other GE faculty; and*
- 4. Recognize, share, and disseminate best practices in general education.*

# Training of GE trainors

Specific objectives (CHED, 2016)

*Specifically, the training program shall:*

- a. Train an initial group of GE faculty to teach the GE core courses;*
- b. Produce GE faculty who can serve as trainors of other GE faculty; and*
- c. Train GE faculty from HEIs nationwide to teach the new GE core courses*

# Mathematics in the Modern World

Training of GE trainers, Ateneo de Manila University, October 10–28, 2016



# Matemátiká sa Makabágong Daigdíg

Training of GE trainers, Ateneo de Manila University, October 10–28, 2016



## Second-generation GE faculty training

(CHED, 2017)

*The Second-Generation GE Faculty Training aims to train a large number of GE faculty from HEIs nationwide in the teaching and delivery of the new GE core courses in both Filipino and English in their own respective institutions and/or regions. It shall be conducted by CHED-designated qualified trainers, who are products of the Training of GE Trainers [...]. Qualified delivering higher education institutions (DHEIs) shall facilitate the Second-Generation GE Faculty Training.*



# Mathematics in the Modern World

Second-generation GE faculty training, Ateneo de Naga University, April 24, 2017–May 13, 2017



Second Generation Faculty Training on the New General Education Core Courses  
"Mathematics in the Modern World"  
April 24 - May 13, 2017



## Ang áking *narrative report*

(kasáma sa *terminal report* na isinumité sa CHED)

*I was one of two trainers that taught the course “Mathematics in the Modern World.” I had some difficulty in creating the teaching materials (lecture slides, assignments, quizzes, and exams) because I had never taught the course before and no textbook covering the complete course was available. I felt that I was not able to teach the course smoothly, that is, it seemed to me that I would just jump from one topic to another, with no apparent continuity. I also realized that some of the activities I gave were too difficult. I had assumed that the students were already familiar with the topics when in fact the topics were totally new to a lot of them.*

*I feel that the creation of a textbook for this course should be given high priority so that future teachers of this course will be able to avoid the problems I experienced. I am currently planning on writing such a textbook, perhaps with the help of other authors.*

*I thank the Commission on Higher Education for giving me the opportunity and the financial support to be trained for and to train this course. The experience was very pleasant and memorable for me.*

# Ang Pagtuturò ng Matemátiká Gámit ang Wikàng Filipino

Isáng panayám na ibinigáy ko sa “Council of Deans and Department Chairs of Colleges of Arts and Sciences Region V Conference and Enrichment Sessions on the New General Education Curriculum” sa Ateneo de Naga University, Naga City noóng ika-2 hanggáng ika-3 ng Setyembre 2017

<https://matematikasmd.files.wordpress.com/2017/09/pmwf.pdf>

(Sandalíng itígil ang panayám na itó, ibigáy ang panayám na “Ang Pagtuturò ng Matemátiká Gámit ang Wikàng Filipino,” at itulóy ang panayám na itó.)

Ang Pagtuturo ng Matematika Gamit ang Wikang Filipino  
└ Ang pagsasalin sa Filipino ng matematikang terminolohiya 18/27

### Ang pagsasalin sa Filipino ng matematikang terminolohiya

Makakahanap ng pagsasalin sa Filipino mula sa Ingles ng mga teknikal na termino sa matematika sa Ruiz (1979); Sillorequez (1980); Miranda and Miranda (1981); Acelajado (1994); Aldaba (1995–1996); Beltran (1996); at sa Miranda (2015).

Makakahanap ng talahulunganan (o glosari) ng mga teknikal na termino sa matematika (sa wikang Filipino) sa Reyes-Otero et al. (2002).

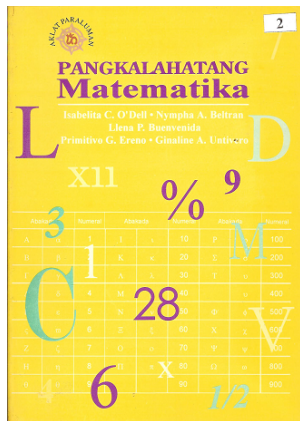
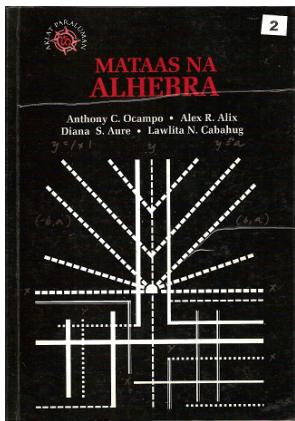
Makakahánap ng karagdágang glósarí sa del Rosario (1969); Aldaba (1995–1996); at The University of the State of New York (2018).

Ang Pagtuturo ng Matematika Gamit ang Wikang Filipino  
└ Ang pagsasalín sa Filipino ng matematikang terminolohiya 19/27

Halimbawa: *Least common denominator*

- ▶ pinakamaliit na lahatang pamamahagi (Sillorequez, 1980)
- ▶ isa-laging pangilalim (Miranda & Miranda, 1981)
- ▶ pinakamaliit at panlahat na denamineytor (Acelajado, 1994)
- ▶ pinakamababang common denominator (Reyes-Otero et al., 2002)
- ▶ isa-huling pangilalim (Miranda, 2015)

- pinakamaliít na lahatáng pamahagi (del Rosario, 1969, p. 65)
- pinakamaliit na common denominator/least common denominator (Cruz, Bermudo, Orate, & Saldaña, 1997, p. 71)
- least common denominator (The University of the State of New York, 2018)



(Ocampo, Alix, Aure, & Cabahug, 1997)

(O'Dell, Beltran, Buenvenida, Ereno, & Untivero, 1996)

(Ang mga laráwan ay kinúha mulá sa <https://sentrofilipino.upd.edu.ph/portfolio/mataas-na-alhebra/> at <https://sentrofilipino.upd.edu.ph/portfolio/pangkalahatang-matematika/>.)

## MTHS102 Matemátiká sa Makabágong Daigdíg

Nagturò akó ng kúrsong “Matemátiká sa Makabágong Daigdíg” (MTHS102) noóng ikalawáng seméstre ng taóng panurúang 2017–2018 sa Ateneo de Naga University (káhit na itó ay inilaán úpang sa pangkalahatán ay magsimulâ sa únang seméstre ng taóng panurúang 2018–2019).

Ang kúrso ay itinúring bílang isáng elektíbo pára sa mga mág-aarál sa mataás na antás.

May sampûng mág-aarál: pitóng *Bachelor of Science in Mathematics*, dalawáng *Bachelor of Science–Bachelor of Secondary Education*, at isáng *Bachelor of Elementary Education*. Waló ang pumasá.



## Makakahánap ng halimbawàng sílabús sa

[https://ched.gov.ph/wp-content/uploads/2017/10/  
Matematika-sa-Makabagong-Daigdig.pdf](https://ched.gov.ph/wp-content/uploads/2017/10/Matematika-sa-Makabagong-Daigdig.pdf)

## Ang sílabús na ginámit ko ay mahahánap sa

[https://matematikasmd.files.wordpress.com/2017/12/  
1718s2.pdf](https://matematikasmd.files.wordpress.com/2017/12/1718s2.pdf)

# Halimbawàng aralín

Matematika sa Makabagong Daigdig 1/34

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Matematika sa Makabagong Daigdig  
Matematika sa Ating Mundo

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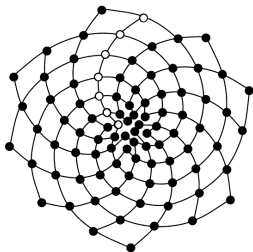
Ikalawang semestre, akademikong taon 2017–2018

(Sandaliñg itígil ang panayám na itó, ibigáy ang panayám na “Matemátiká sa Ating Mundo,” at itulóy ang panayám na itó.)

## Halimbawàng tanóng

Bilúgan ang títik ng mapagpipilán na pinakamahúsay na sumasagót sa tanóng. Magigíng malí ang sagót kapág higít sa isáng títik sa báwat tanóng ang bibilúgan.

1. Kung ang 2 ay ikaápat na Fibonacci na numeró, anó ang ikawaló?  
(a) 8                      (b) 13                      (c) 21                      (d) 34
2. Sa paggúhit na ipinapakíta sa kánan, ilán ang *spiral* na katúlad ng *spiral* na ibá ang kúlay?  
(a) 11  
(b) 12  
(c) 13  
(d) 14



(Ang paggúhit ay nakúha sa aklát ni Ian Stewart na *Nature's Numbers* (Basic Books, 1995) at binágo.)

3. Kung ang pang-ápat na Fibonacci na numeró ay 2, pang-ilán ang 8?

(a) 5

(b) 7

(c) 8

(d) 13

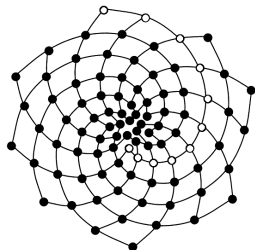
4. Sa paggúhit na ipinapakíta sa kánan, ilán ang *spiral* na katúlad ng *spiral* na ibá ang kúlay?

(a) 7

(b) 8

(c) 9

(d) 10



(Ang paggúhit ay nakúha sa aklát ni Ian Stewart na *Nature's Numbers* (Basic Books, 1995) at binágo.)

5. Anó ang halagá ng gintông *ratio*?

(a)  $\frac{1+\sqrt{5}}{2}$

(b)  $\frac{1-\sqrt{5}}{2}$

(c)  $\frac{1+\sqrt{2}}{5}$

(d)  $\frac{1-\sqrt{2}}{5}$

## Mga sangguniáng babasahín

- Wikipediang Tagálog  
<https://tl.wikipedia.org/>
- Wiktionary sa wikàng Tagálog  
<https://tl.wiktionary.org/>
- Wikibooks  
<https://tl.wikibooks.org/>

# Mga pagsasáney

- Matemátiká sa Makabágon Daigdíg  
<https://matematikasmd.wordpress.com/>

### Gintuung spiral

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Unang pangalan: \_\_\_\_\_ Apelyido: \_\_\_\_\_ Pinau: \_\_\_\_\_

Ita ay isang pagpaganap sa paksaing "matematika sa ating mundo" na may mahalagang kaibigan na "Ang matematika ay isang kapal-putukirang na paraan ng pag-álap tangkil sa kalikasan at sa ating mundo."

Igrap ang funsiyon na  $r = \left(\frac{1}{2}(1 + \sqrt{5})\right)^{2n/\pi}$  sa ibaba: punan ang talahanayan (*i-round off* ang mga halaga sa dalawang decimal place), iguhit ang mga punto sa grid, at idugtong ang mga punto.

θ	0	π	2π	3π	4π	5π	6π	7π	8π	9π	10π	11π	12π
r													

### Grupong frieze

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Unang pangalan: \_\_\_\_\_ Apelyido: \_\_\_\_\_ Pinau: \_\_\_\_\_

Ita ay isang pagpaganap sa paksaing "lathalaing pangheometrika" na may mahalagang kaibigan na "Itinatutulong ang heometriya sa paghahang ng kahusayang artistiko gayundin sa pagpapayaman ng kultura."

Basahin ang seksiyon na "Mathematical Principles" sa pag-aaral nina De Las Peñas at Salvador-Amores (2016). Ipapaliwanag dito ang transpormasyong heometriko na isometri sa plane at ang apat na uri nito: translation, reflection, pagpigit (rotation), at glide reflection. Ipapaliwanag din dito ang grupong frieze (ang grupong symmetry ng isang frieze pattern).

Gamitin ang notasyon na inilawan nina De Las Peñas at Salvador-Amores (2016) (fm, m, g, r, r', r'', o 11) upang ilarawan ang grupong frieze ng bawat isa sa mga sumusunod na frieze pattern. Ang unang tanong ay sinagot na para sa iyo.

Sanggunian  
 De Las Peñas, M. L. A. N., & Salvador-Amores, A. V. (2016). Mathematical and anthropological analysis of northern Luzon funeral textile. *Philippine Journal of Science*, 145, 89-103.

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- del Rosario, G. (Ed.). (1969). *Maugnaying talasálitaang pang-agham: Ingles-Pilipino*. Manila, Philippines: Lupon sa Agham, Pambansang Patnugutan sa Paunlarang Pang-Agham.
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