



**Moderator: Dr Graham
Harrison**



Welcome to ACE Capacity Building Webinar Series

24th June 2020

**First Webinar Title:
*Use of e-Learning and digital
resources in the COVID-19 era***

Anglophone Session

**10 a.m. UTC (10 a.m. Ghana and
The Gambia; 11 a.m. Nigeria)**



**Facilitator: Dr Dimitrios
Noukakis**



**Dr Dimitrios Noukakis,
Director Digital Education,
Center Excellence in Africa,
Swiss Federal Institute of
Technology in Lausanne – EPFL,**

Profile

- Since January 2020, Dimitrios Noukakis has been in charge of Digital Education at the “Centre Excellence in Africa” at the EPFL. Between 2013 and 2019, he led the MOOCs for Africa program, a global initiative aimed at promoting innovative teaching methods in African universities, notably through the use of MOOCs. His current work focuses on digital technologies for education and their potential for transforming education at all levels.
- Between 2005 and 2012, he developed the strategy and marketing activities of EPFL’s graduate programs at the international level. Before joining EPFL, he worked as a publisher for Elsevier (1995-2000) and founded two marketing and communication companies for the scientific community (2000-2005).
- Dimitrios graduated in Chemistry (1986), holds a PhD from the University of Fribourg in Natural Sciences (1991) and an MBA from Business School Lausanne (2002).

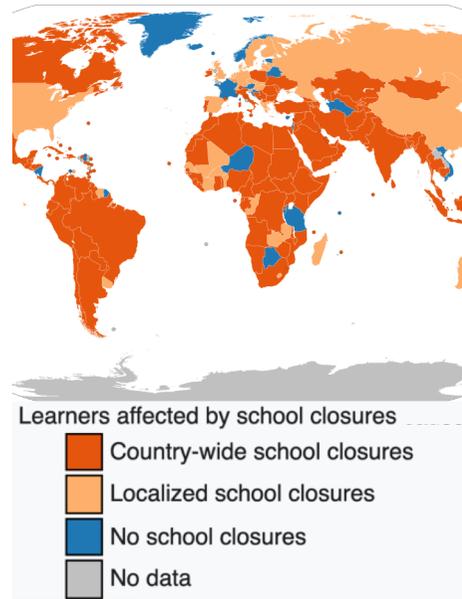


**Online Learning
in the
COVID-19 era**

**Dr Dimitrios NOUKAKIS
EPFL, Lausanne, Switzerland**

**Dr Abdourahmane MBENGUE
UVS, Dakar, Sénégal**

The consequences of the COVID-19 crisis



On June 7, 2020 - UNESCO

An opportunity to pause and reflect

- What exactly were we trying to achieve in the classroom and now outside of it?
 - Learning processes vs learning outcomes !
 - Transfer existing knowledge via distant learning?
 - Educate and prepare the young generation for tomorrow's challenges?

Not only a fix to a temporary issue

- ✓ An opportunity to transform higher education for the benefit of All !

■ The WB-ACE taskforce's proposal

In the context of COVID-19 and the closure of many universities (especially face-to-face lectures), WB and AAU are organising:

- Free access to MOOCs and Open Educational Resources (OER) available on global educational platforms: Coursera, edX, FUN, IBM
- Training for professors on how to integrate MOOCs and OER in their existing courses.
- Coaching for professors who wish to integrate MOOCs and OER in the different stages of their online pedagogical scenario (lesson plan).

■

Training content

4 modules presented as an online course on Moodle.

It includes:

- **4 webinars** on the use and integration of online educational resources in your courses.
- **Resources:** MOOCs / OER and **resources related to instructional design online.**
- **Coaching:** from July 20 onwards in online forums on the topics covered by the webinars.

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■ Objectives of this webinar

- Develop a common vocabulary on key concepts linked to online pedagogy and the integration of MOOCs and OER.
- Review different types and modalities of digital education.
- Identify the types and modalities best adapted to your courses.
- Adapt the formulation of your learning objectives and pedagogical scenario to integrate MOOCs/OER into an existing course.

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Overview of the presentation

- Different types of e-learning and their advantages and limitations
- Integration of MOOC and/or OER
- Key pedagogical elements of e-learning
- Example of a MOOC's content and structure
- Next steps and calendar
- Questions

■ Different types of e-learning

E-learning: “*e-Learning is the use of network technology to design, deliver, select, administer and extend learning*” Elliott Masie, 1999

Different types of e-learning:

- **Synchronous** – learners and the instructor interact in real time, but from different locations.
- **Asynchronous** – self-paced online learning. If there is an instructor, s/he is not interacting in real time.
- **Blended learning** – combination of online and face-to-face learning.

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■ Advantages and limitations of e-learning

Advantages

- Convenient and flexible
- Consistency and quality of learning
- Overview of participation and successful integration of key concepts
- Active learning, especially for learners who do not participate much in face-to-face classes (e.g. forum).

Limitations

- Dependent on (good) internet connection
- Not for every discipline
- Developing online courses takes time and resources
- Requires self-discipline, self-motivation and time management skills

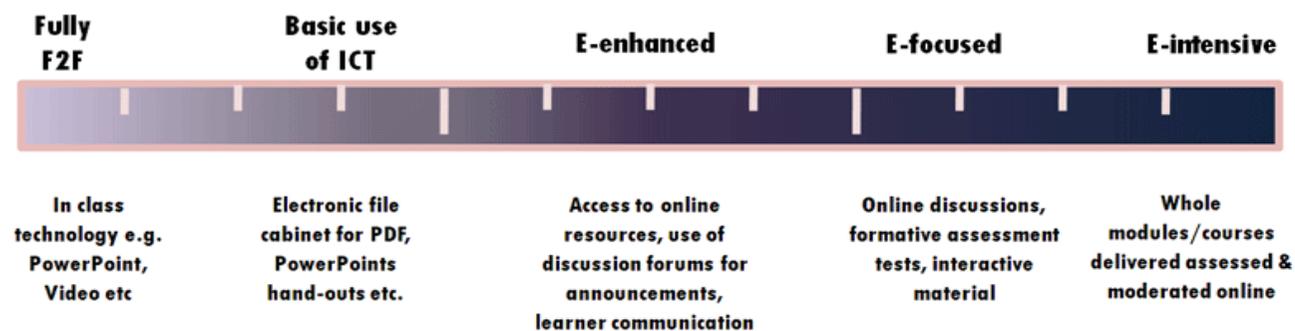
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Integration of a MOOC/OER

Different modalities of integration

From learning exclusively face-to-face to exclusively online, the OER can be used according to the following blended learning modalities:

Continuum of Technology Usage From Fully Face-to-Face to Entirely Online



Tyler-Smith, K. (2010) A Blended Learning Approach, [Keith Tyler-Smith's eLearning Blog](#)

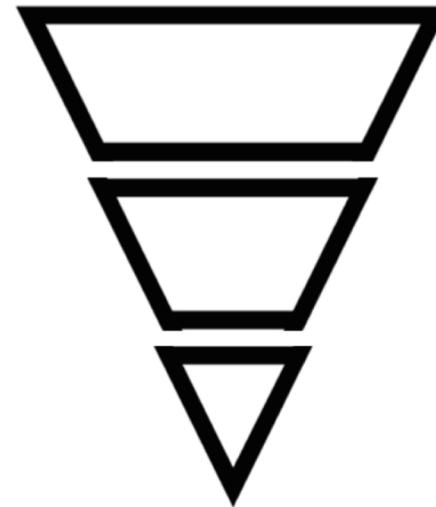
■ Integration of a MOOC/OER

Different levels of integration

Total integration → Macro

Partial integration → Meso

→ Micro



MOOC

Modules
Sections

Activity

Key pedagogical elements of e-learning

Flipped classroom

The reverse of traditional teaching practices: students are introduced to new content at home and practice in class.

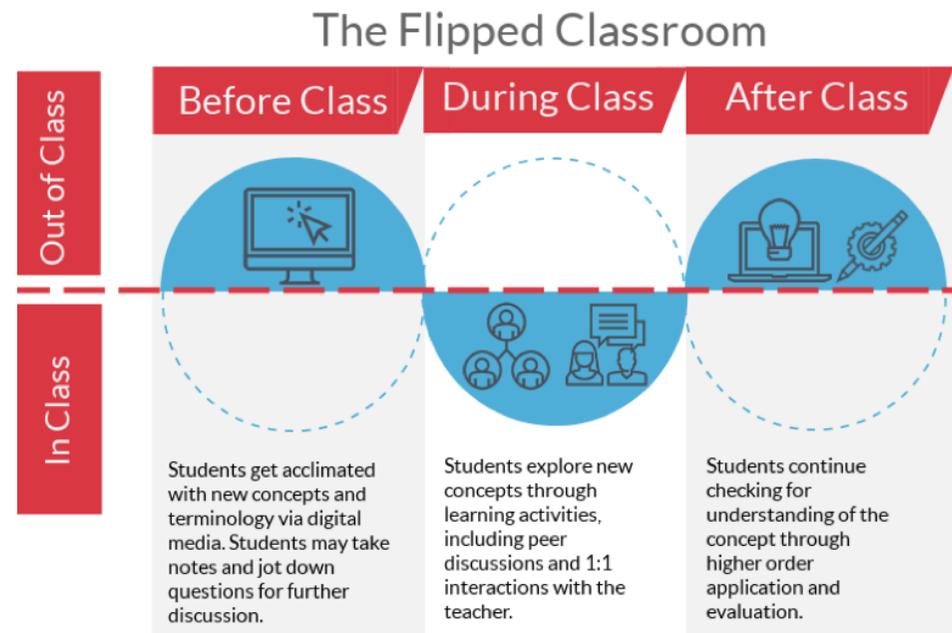
F – FLEXIBLE ENVIRONMENT

L – LEARNING CULTURE

I – INTENTIONAL CONTENT

P – PROFESSIONAL EDUCATOR

Source: flippedlearning.org



Source: Thyatt (2018) Using ClassPace in a Flipped Classroom | Odysseyware

■ Key pedagogical elements of e-learning

Pedagogical scenario (lesson plan)

“A pedagogical scenario is:

- the execution of a learning activity
- the definition of objectives,
- the planification of tasks,
- the description of the learners' tasks and
- the means of evaluation”

Lando, 2003

■

■ Key pedagogical elements of e-learning

Content chunking strategies



Adapted from Pappas (2013)

- **Classify and prioritise** what is essential to learn.
- **Group content** into modules and then sections according to themes/topics.
- **Organise information** according to a rational flow from basic or broad concepts to more complex ones.

■ Key pedagogical elements of e-learning

Learning objectives

- Learning objectives define what you want your learners to be able to do at the end of the training (course, exercise, etc.).
- **A learning objective is not an educational purpose.**
 - Educational purposes define what the professor wishes to cover (content) and how (methods, progress).
 - However, learning objectives define the **objectives from the point of view of the learners**. In other words what they will be able to do as a result of learning.

▪

Key pedagogical elements of e-learning

Learning objectives – example of MATLAB and Octave for beginners



Courses ▾ Programs & Degrees ▾ Schools & Partners edX for Business

Q Sign In

Register

Catalog > Computer Science Courses

MATLAB and Octave for Beginners

Learn MATLAB and Octave and start experimenting with matrix manipulations, data visualizations, functions and mathematical computations.

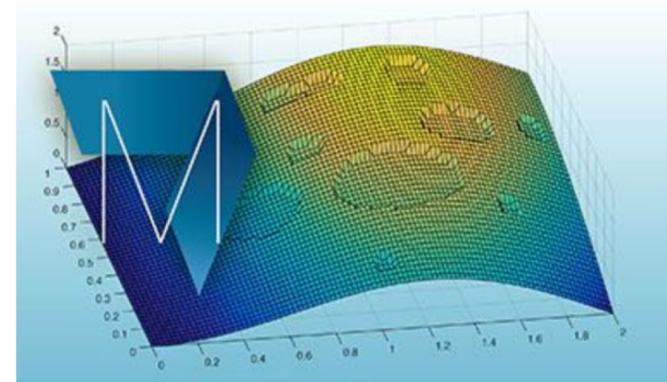
EPFL

65,484 already enrolled!

Enroll

Starts Jun 22

I would like to receive email from EPFLx and learn about other offerings related to MATLAB and Octave for Beginners.



■ Key pedagogical elements of e-learning

Learning objectives – example of MATLAB and Octave for beginners

Difference between a learning objective and an educational purpose

Educational purpose of the professor:

- The course aims to introduce the software Octave and MATLAB to students following a numerical analysis course.

Learning objectives from the point of view of the learners:

By the end of the course, the learner will be able to:

- “Work with vectors and matrices.”
- “Process text files containing data.”
- “Manipulate plots and figures and save them to pdf or jpg.”
- “Use scripts and functions.”
- “Write small interactive programs.”

■

■ Key pedagogical elements of e-learning

Learning objectives

- To define the learning objectives of your course, start by asking yourself what your learners should be capable of knowing and/or doing following the course.
- It will lead to the definition of the **general (primary) objective** of the course (i.e. the expected results of the learning).

General objectif	“At the end of the (online or blended learning) course, the learner will be able to”
------------------	--

Example: At the end of the course, the learner will be able to use the software Octave and MATLAB to write functions, calculate vectors and matrices and plot graphical representations of results.

■

■ Key pedagogical elements of e-learning

Learning objectives

- “Through **which intermediary steps** do my learners have to go through to reach this objective?”
- This will define the **secondary objectives** and as a result:
 - your ‘chunks’ (the **content** and **activities**) and
 - **pedagogical methods** to enable your learners to reach these objectives.

Secondary objectives	« At the end of the section, the learner will be able to... »
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Example: “Work with vectors and matrices.”

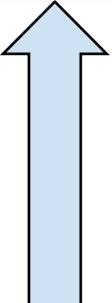
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Key pedagogical elements of e-learning

Learning objectives

When you identify the **secondary objectives**, you should always check their relevance to the general objective:

- “Is this learning necessary to reach the general objective of the course?”
- If the answer is no: this learning, as interesting as it may be, should not be part of this course (or your general objective needs revising).

Example		
General Objective	At the end of the course, the learner will be able to use the software Octave and MATLAB.	
	Secondary objective 2	“Process text files containing data.”
	Secondary objective 1	“Work with vectors and matrices.”

■ Key pedagogical elements of e-learning

Learning objectives (SMART)

An objective must:

- reflect an **observable behaviour**
- be drafted using measurable **action verbs** (e.g. write, define, apply, demonstrate ...)

To define this action precisely, ask yourself two questions:

1. In which domain is the learning ?

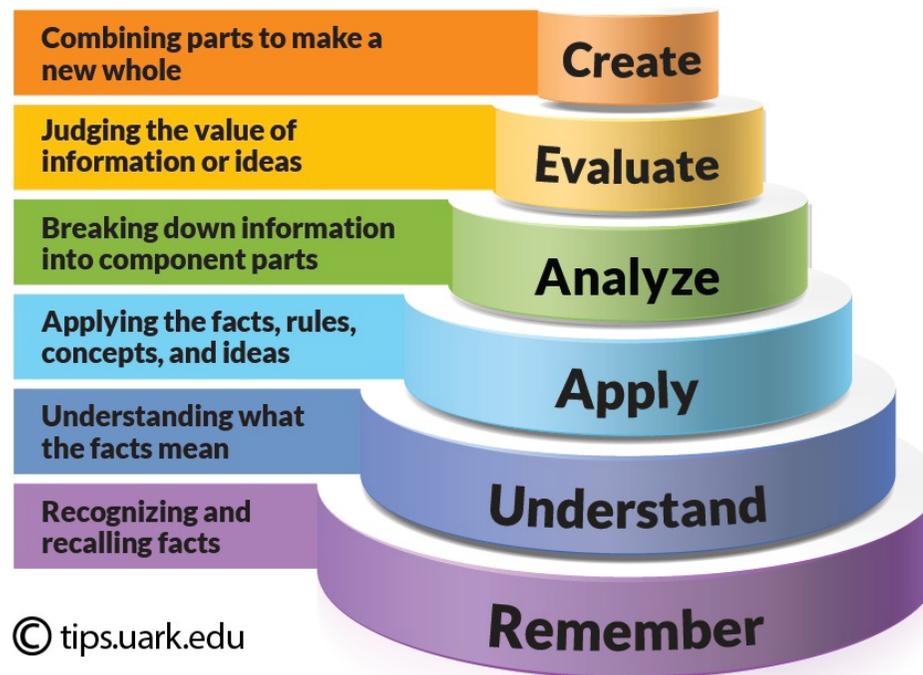
Cognitif	Knowledge
Affective	Values and attitudes
Psychomotor	Skills

■

■ Key pedagogical elements of e-learning

Learning objectives

2. What is the level of complexity of the learning?



■ Key pedagogical elements of e-learning

Pedagogical approaches

- Describes the approach adopted by the professor to enable learning and reach his/her pedagogical objective.

The following pedagogical approaches to designing an online course will be covered during the training:

- **Transmissive approaches** – transmit knowledge as a presentation, case study, detailed example or a demonstration.
- **Individual active approaches** – learners play an active role.
- **Collaborative active approaches** – learners are brought to collaborate.

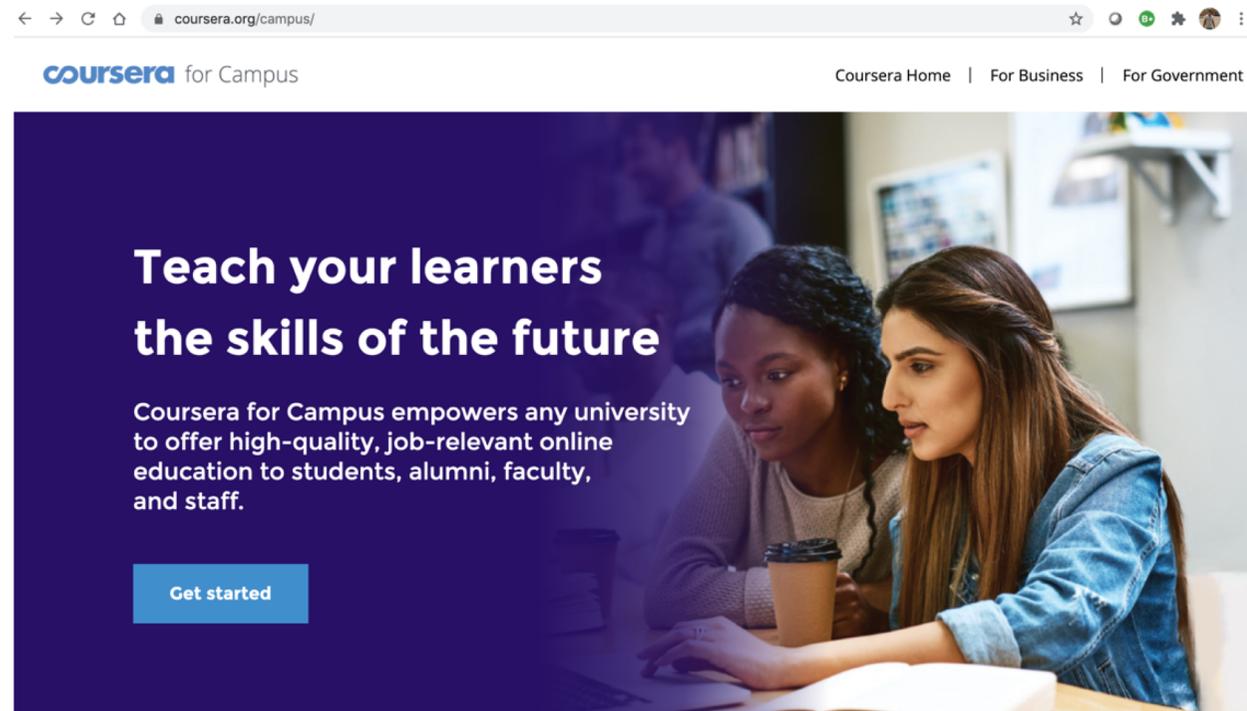
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MOOCs and Online training platforms

Four main platforms offering privileged access to online content

1. Coursera (<https://www.coursera.org/campus/>) – institutional registration required

- over 3'000 courses
- 5'000 codes/university
- Now – Sept. 30

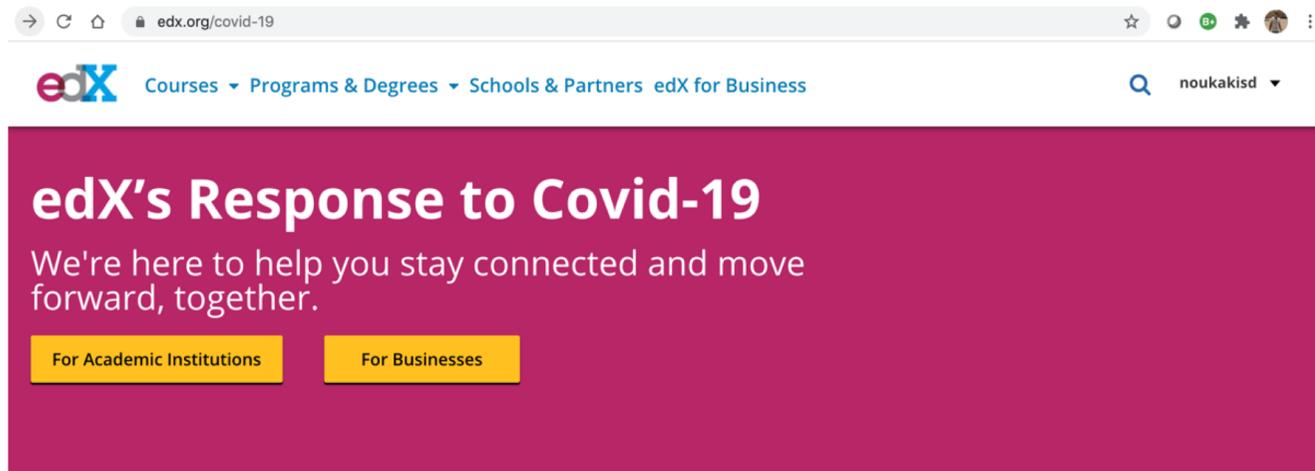


MOOCs and Online training platforms

Four main platforms offering privileged access to online content

2. edX (<https://www.edx.org/covid-19>) – institutional registration required

- over 2'500 courses
- 5'000 codes/university
- June 30 reg. limit !
- till course ends



The screenshot shows the edX website's response to COVID-19. The browser address bar displays 'edx.org/covid-19'. The navigation menu includes 'Courses', 'Programs & Degrees', 'Schools & Partners', and 'edX for Business'. A search bar shows the user 'noukakisid'. The main banner features the edX logo and the text 'edX's Response to Covid-19' with the message 'We're here to help you stay connected and move forward, together.' Below the banner are two yellow buttons: 'For Academic Institutions' and 'For Businesses'.

The spread of Covid-19 across the globe has impacted every one of us. The majority of us are staying at home, where we're working, learning, and teaching remotely. But as the world rapidly changes around us, what hasn't changed is edX's commitment to you and our global community.

We get that when it feels like the world has stopped spinning, it's hard to see a path forward. That's why as part of our commitment to you, we're inviting you to find your path forward with us. Together with our university partners and the millions of learners who make up our community, we want to support you in every way we can. We're here to help you stay connected and move forward.

A Message from Anant Agarwal, edX Founder and CEO



MOOCs and Online training platforms

Four main platforms offering privileged access to online content

3. FUN (France Université Numérique) MOOCS (<https://fun-blog.fr/fun-campus-covid19/instancier-des-mooc-en-spoc-sur-fun-campus/>)

- request by e-mail to AAU
- approx. 500 courses
- No student limit



FUN CAMPUS - COVID19
Instancier des MOOC en SPOC sur FUN
Campus

RECHERCHER UN ARTICLE

Recherche...



■ MOOCs and Online training platforms

4 main platforms offering privileged access to online content

4.1 [IBM Africa Skills Academy](#)

primarily for faculty/instructors on emerging IT (AI, Big Data, Blockchain, Cloud Computing, Cybersecurity, IOT, etc)

4.2 [IBM Academic Initiative](#)

free access to IBM resources for training and research

4.3 [IBM Digital Nation Africa](#)

fast digital competency training for students with no IT background

Structure of a MOOC

General information



Courses ▾ Programs & Degrees ▾ Schools & Partners edX for Business

Search Sign In

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MATLAB and Octave for Beginners

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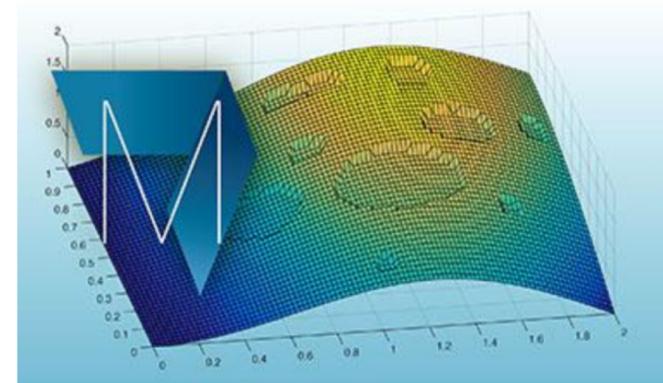
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Structure of a MOOC

Presentation of a course

▪ Lesson/chapter

▪ Sections

▪ Activities

▼ Chapter 2
> 2.1 Variables
> 2.2 Vector operations
> 2.3 Matrix operations
> 2.4 Vector and matrix multiplications
> 2.5 Elementwise operations
> Reading and complementary exercises
> Chapter 2 Test Homework
▼ Chapter 3
> 3.1 Scripts and algorithms
> 3.2 Writing to a file
> 3.3 2D figures
> 3.4 3D figures
> Reading and complementary exercises



Exercise and Summative assessment



Structure of a MOOC

Cours > Chapter 4 > Chapter 4 Test > Chapter 4 Test

< Précédent



Suivant

Chapter 4 Test

[Ajouter cette page aux favoris](#)

Test 4.1

4 points possible (graded)

Guess the number !

The rules of the game are the following :

1. For $a < b$ integers, the computer thinks of an integer inside the interval $[a, b]$ (cf `help randi`).
2. The player tries a first guess of the number.
3. The computer replies, depending whether the guess is too low, correct or too high.
4. The player makes another guess, and carries on until he finds the correct number.

Write a function which takes as input two numbers a and b and asks the user to play with it. The function does not return anything.

The function must contain the following steps:

- have a `help`
- deal with the cases where a and b are swapped or when they are not integers
- generate a number to guess in the correct interval, and not change it during the game !
- have a loop which allows the user to keep on playing until he finds the correct number

Implement the game, test it, then answer the following questions :



Structure of a MOOC

Discussion forum

Cours **Discussion** Progression Syllabus Lecture Slides

Tous les sujets > Week 1: Assignment 1 > 1.4 PV Potential around the World: AQ1.4.1-1.4.4

Ajouter un message

Rechercher un sujet

Recherche

- Tous par activité récente
- 1.4.3 - Confused 4
I got the answer OK for the USA ...
- you need to make more clear your piece of information 3
in AQ1.4.1 i thought that the are...
- ? 1.4.2 very confused... 9
In the answer for 1.4.2, the ener...
- AQ1.4.2 Hint** 3
You first have to find out what a...
- Percentage of areas in the table 1
The given percentages of area n...
- 1.4.2 - Took forever but got it! 2

AQ1.4.2 Hint

discussion posted il y a environ un an by [asifak](#)

You first have to find out what area is required by 1 No. of Panel having 270 Wp. We know under STC, that is 1000 Watts pe meter. As efficiency is 15% of the given PV system, so total Irradiance required shall be $270/0.15 = 1800$ Watts

This means that $1800/1000 = \text{xxxx}$ m2 are required to generate 270 Watts; if STC says that 1000 Watts are required for 1 m2

Now, calculate Mega Watt per panel per year Now calculate Total Panels required Now calculate Total area taken by the panels Now finally calculate Total area percentage

This post is visible to everyone.

Add a Response

1 réponse

[Jasondello](#)

il y a 2 months

1.8m2 to generate 270W $.00027\text{mW}/\text{panel} \times 4 \times 365 = .3942\text{mWh}/\text{panel}/\text{year}$ 9,858,954,800 panels needed to meet consumption $1.8\text{m}^2 \times 9,858,954,800 / 10^6 = 17,746\text{km}^2$ $17,746/9,826,675 = .001805 = .18\%$



Integrate a MOOC into your course

Fill in the following template for one of your courses
before the next webinar (1 July)

TEMPLATE TO INTEGRATE A MOOC OR OER IN A
PEDAGOGICAL SCENARIO

Please fill in the template based on one of your courses for which you would like to use parts of a MOOC
from the following platform: <http://e-learning.seneformation.net>

Title of the course	
General objective	
Target audience	
Prerequisites	



Integrate a MOOC into your course

Indicate in which module you are thinking of integrating a MOOC.

- The titles of the modules and learning objectives in your existing course
- **The elements of the MOOC, whether it is the entire MOOC, a module or a resource, in BOLD**

	Title of the module	Learning objectives	Title of the MOOC
Module 1			
Module 2			
Module 3			
Module 4			



Next steps and calendar

- Identify the MOOC you wish to use on the platforms
- Fill in the template on integrating a MOOC/OER in your learning scenario (see the resources linked to module 1)
- Check out the resources available at: <http://e-learning.seneformation.net>
- Participate in discussions in the online forum linked to webinar 1
- Participate in the next webinar on Wednesday 1 July at 12am GMT on the theme: **The essentials of a learning strategy**

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