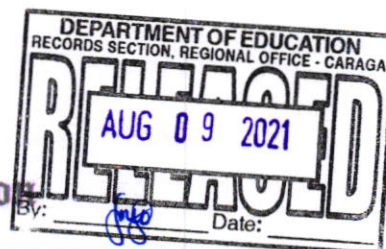




Republic of the Philippines
Department of Education
CARAGA REGION



August 6, 2021

REGIONAL MEMORANDUM

No. 596, s. 2021

To: SCHOOLS DIVISION SUPERINTENDENTS
This Region

STEM EDUCATION MASTER CLASS COURSE FOR TEACHERS

1. The Department of Information and Communication Technology Mindanao Cluster II in partnership with the University of the Philippines – College of Education through the ICT Literacy and Competency Development Bureau (ILCDB) is inviting excellent teachers to participate in the STEM Education Master Course for Teachers.
2. The Digital Teacher Training Program of the ILCDB aims to build and transform the digital competencies of Filipino Teachers through information and communication technologies.
3. Due to the current pandemic situation brought about by COVID-19 and imposed travel restrictions around the region, the training course will be conducted synchronously via ZOOM and asynchronously through the DICT – Microsoft Workplace Learning and Development Platform. The training will run from August 16 – 20, 2021.
4. The participants to the training, course details and other pertinent documents are attached to this memorandum.
5. Participants are expected to confirm their attendance to Ms. Ma. Graciela Vic Elape via graxelape@gmail.com or mobile number 0948-745-8378.


EVELYN R. FETALVERO, CESO IV
Director IV

Encl/s.: As stated
Reference/s: NONE
To be indicated in the Perpetual Index
under the following subjects:

LEARNING AND DEVELOPMENT SCHOLARSHIP TRAINING PROGRAMS

HRD/ea/c
08/06/2021



Address: J.P. Rosales Avenue,
Butuan City
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2021-08-9767

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Enclosure 1

LIST OF PARTICIPANTS

Name	Position	School	Division	Contact Number	Email Address
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REPUBLIC OF THE PHILIPPINES

DEPARTMENT OF INFORMATION AND
COMMUNICATIONS TECHNOLOGY

PROGRAM OF INSTRUCTION

STEM Education Master Course for Teachers (CO-A1 STEM 2021-08-002)

As of August 2021

Description

The *STEM Education Master Course for Teachers 2021* is the first part of three blended (synchronous and asynchronous) trainings offered by the Department of Information and Communications Technology - ICT Literacy and Competency Development Bureau in partnership with the University of the Philippines - College of Education through the development of Massive Open Online Courses (MOOCs) designed to develop and strengthen competencies of teachers in integrating digital skills in STEM (Science, Technology, Engineering and Mathematics) Education.

The course can be accessed by the participants asynchronously in the Learning Management System (LMS), Workplace Learning and Development Platform, developed by Microsoft in partnership with the DICT. Four digital interactive modules authored using Rise 360 are then uploaded to the LMS, where participants can view, access, and accomplish the modules at their own pace and time. Participants are also encouraged to attend a synchronous synthesis session to be led by the course developers/resource persons from the University of the Philippines - College of Education, Center for Integrated STEM Education.

Objectives

At the end of the course, participants should be able to:

- Develop the information and data literacy skills of STEM teachers particularly the application of such skills in inquiry-based learning
- Understand design-based learning and apply knowledge on communication and collaboration through digital technologies
- Utilize data visualization to enhance context-rich learning and use infographics as an assessment tool
- Plan and design a digital content that fosters STEM competencies and sustainability applying the Education for Sustainable Development (ESD) teaching framework
- Promote their role as strategic knowledge partners in accelerating economic recovery and developing the global competitiveness of the Filipino ICT Workforce through ICT education

Content

The STEM Education Master Course for Teachers is divided into four standalone modules:



- Module A: Information and Data Literacy for Inquiry-based Learning
- Module B: Design-based Learning using Digital Collaborative Tools
- Module C: Enhancing Context-rich Learning through Data Visualization
- Module D: Digital Content Creation for Promoting Education for Sustainable Development

Duration

The modules can be accessed asynchronously by the participants in a span of five days. The following table only shows the ideal time a participant should spend while accomplishing activities per module:

Activity	Module A	Module B	Module C	Module D	Total (In Hours)
Introduction	15 mins	15 mins	15 mins	15 mins	1 hour
Situationer	15 mins	15 mins	15 mins	15 mins	1 hour
Content	105 mins	105 mins	105 mins	105 mins	7 hours
Assessment/s	45 mins	45 mins	45 mins	45 mins	3 hours
Total (In Hours)	3 hours	3 hours	3 hours	3 hours	12 hours

Methodology

The course can be accomplished asynchronously by the participants starting from the orientation, and a synchronous synthesis session is situated at the end of the week to address the questions and concerns of participants regarding the modules. During the synthesis, participants would have the choice to join breakout rooms with a resource person/course developer corresponding a module to participate in a forum and short discussion. Participant performance shall be evaluated through short quizzes and other forms of assessments embedded in the digital interactive modules.

Entry Qualifications

- Must be a Filipino teaching professional
- Must have at least five (5) or more years of teaching experience

Target Participants

- Teaching professionals in primary and secondary education sectors handling Science and/or Mathematics subjects

Required/Preferred Skills

- Working knowledge and skills on instruction and facilitation
- Proficiency on the use of educational technologies for online and blended learning
- Proficiency in managing and navigating virtual learning environments

Completion Requirements

Attendance on the synchronous orientation and synthesis sessions, as well as the accomplishment of the pre-course, post-course, mid-course, and overall training evaluation



survey forms are required to complete the course. A Certificate of Completion will be issued to participants who will finish all four modules within five days.

Only registered participants who attended the orientation and synthesis sessions and finished all the modules within the given time frame are eligible to receive a Certificate of Completion.

Resource Requirements

A. MANPOWER

- Course Officer
- Course Developers/Resource Persons
- Technical Support
- Documentation and Administrative Support

B. EQUIPMENT

- Desktop or Laptop device with web camera
- Headset or earphones
- Reliable Internet connection
- Google account

C. TRAINING MATERIALS

- Invitation Letter
- Program/Course Information
- Training Schedule
- Training Process Infographics
- Presentation Deck
- Reference Materials
- Digital Interactive Modules
- Learning Management System
- e-Certificates
- Posters

Detailed Outline

Module A – Information and Data Literacy for Inquiry-based Learning

- Unit 1. Fostering Information Literacy through STEM
 - 1.1 What Is Information Literacy?
 - 1.1.1 Situationer/Activity
 - 1.2 Why Is Information Literacy Important in STEM?
 - 1.2.1 Situationer/Activity
 - 1.3 What Are Criteria for Evaluating Information and Digital Content?
Brief Assessment
- Unit 2. Understanding Data in a Data-Filled World
 - 2.1 What Is Data Literacy?
 - 2.1.1 Situationer/Activity
 - 2.2 How Do Data Talk?
 - 2.2.1 Situationer/Activity
 - 2.3 How to Make Sense of STEM Data?
Brief Assessment 2



- Unit 3. Applying Information and Data Literacy in Inquiry-Based Learning
 - 3.1 What is Inquiry-Based Learning?
 - 3.1.1 Situationer/Activity
 - 3.2 How Are Information and Data Literacy Related to STEM Practices?
 - 3.2.1 Situationer/Activity
 - 3.3 How to Apply Information and Data Literacy in Inquiry-Based Learning
- Brief Assessment 3*

Module B – Design-based Learning using Digital Collaborative Tools

- Unit 1. Understanding Design-Based Learning
 - 1.1 Design-Based Learning
 - 1.1.1 Engineering Design as a Pedagogical Strategy
 - 1.1.2 Understanding DBL through Its Salient Features
 - 1.1.3 Hearts-on, Minds-on, and Hands-on Activity
 - 1.2 Design Thinking Process
 - 1.2.1 The Design Thinking Framework
 - 1.2.1.1 Different Frameworks
 - 1.2.1.2 CISTEM's Framework
 - 1.2.2 Steps
 - 1.3 Design Thinking Strategies
 - 1.3.1 Problem-finding Strategies
 - 1.3.2 Idea Generation Strategies
 - 1.3.3 Distillation Strategies
 - 1.3.4 Permutations of Strategies
- Brief Assessment*
- Unit 2. Building Your Design-based Learning Activity
 - 2.1 Design-Based Output
 - 2.1.1 Input-Process-Output
 - 2.1.2 Different Output
 - 2.1.3 Output in Education
 - 2.2 Project-Based Learning
 - 2.2.1 Design Thinking Lessons vs. Design Thinking Projects
 - 2.2.2 Design Thinking Projects
 - 2.2.3 Project Management
 - 2.3 Prototype and Fidelity
 - 2.3.1 Design Thinking Online
 - 2.3.2 Design Thinking at Home
 - 2.3.3 Types of Prototype and Appropriate Ones for the Online Setup
 - 2.3.4 Fidelity
 - 2.3.5 Advantages and Disadvantages: Classroom Setup vs. Online Setup
- Brief Assessment 2*
- Unit 3. Exploring Digital Collaborative Tools
 - 3.1 21 CC Skills and Collaboration
 - 3.1.1 The 21 CC Learners
 - 3.1.2 21 CC Skills
 - 3.1.2.1 Creativity
 - 3.1.2.2 Critical Thinking
 - 3.1.2.3 Communication
 - 3.1.2.4 Collaboration
 - 3.1.3 ICT literacy
 - 3.1.4 Collaboration



- 3.2 Digital Collaborative Tools
 - 3.2.1 Collaborative Discussion
 - 3.2.2 Collaborative Prototyping
 - 3.3 Integration to BBL Learning Activity
 - 3.3.1 The Hows: Integration to a BBL Learning Activity
- Brief Assessment 3*

Module C – Enhancing Context-rich Learning through Data Visualization

- Unit 1. Background on Data Visualization
 - 1.1 Purpose
 - 1.2 Characteristics
 - 1.3 Examples of Typically Used Visualizations and Specific Uses
- Unit 2. Key Elements of Effective Data Visualization
- Unit 3. Responsible Use of Data Visualization
 - 3.1 Typical Errors in Presented Visualizations
 - 3.2 Reminders for Interpretation of Visualizations

Brief Assessment
- Unit 4. Further Sources for Data Visualization
 - 4.1 Sources of Available Visualizations
 - 4.2 Sources of Data Sets
 - 4.3 Sources of Tools for Data Visualization

Brief Assessment 2
- Unit 5. Context-Rich learning and Data Visualization
 - 5.1 Elements of Context-rich Learning
 - 5.2 Anchored Instruction
 - 5.3 Infographics as an Assessment Tool

Brief Assessment 3

Module D – Digital Content Creation for Promoting Education for Sustainable Development

- Unit 1. Content Creation for Education
 - 1.1 Importance of Digital Education Contents
 - 1.2 Characteristics of a Quality Digital Content
 - 1.3 Content-creation Essentials
 - 1.3.1 Purpose
 - 1.3.2 Audience
 - 1.3.3 Creative/technical Approach and Strategies

Brief Assessment
- Unit 2. Education for Sustainable Development (ESD)
 - 2.1 ESD Teaching Framework
 - 2.2 Application of ESD within and across Subject Matters
 - 2.3 ESD in Contexts
 - 2.4 STEM Competencies in ESD

Brief Assessment 2
- Unit 3. Planning and Designing a Digital Education Content
 - 3.1 Digital Content Samples that Promote Sustainable Development from: Philippine Green Pages, Greenpeace Philippines, and Philippine Center for Environmental Protection and Sustainable Development, INC (PCEPSDI)
 - 3.2 Using of Different Digital Platforms to Create Contents
 - 3.2.1 Rise360
 - 3.2.2 Google Jamboard
 - 3.2.3 Canva

Brief Assessment 3



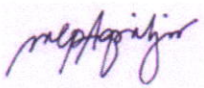
REPUBLIC OF THE PHILIPPINES

DEPARTMENT OF INFORMATION AND
COMMUNICATIONS TECHNOLOGY

Prepared by:


JUSTINE MAE C. DAYAP
Project Development Officer II

Approved by:


Digitally
signed by
Aquilizan
Maria
Lourdes
Pacis
MARIA LOURDES P. AQUILIZAN
Director III, ILCDB



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF INFORMATION AND
COMMUNICATIONS TECHNOLOGY

RETURN SERVICE AGREEMENT

The Philippine Government, by virtue of Republic Act 10844 or the law creating the Department of Information and Communications Technology, commits to develop and promote ICT in education consistent with the national goals and objectives, and responsive to the human resource needs of the ICT and ICT Enabled Service sectors. To promote the role of teachers and learners as strategic knowledge partners in accelerating economic recovery and developing the global competitiveness of the Filipino ICT workforce through ICT and STEM education, the Department hereby organizes a STEM Education Master Course for Teachers. The 20-hour asynchronous and synchronous training will be conducted from August 16-20, 2021, through the ICT Literacy and Competency Development Bureau (ILCDB) and its partner, the University of the Philippines Diliman – College of Education. The orientation will be conducted on August 16, 2021 (Monday) at 9:00 AM - 11:00 AM, and the synthesis will take place on August 20, 2021 (Friday) at 9:00 AM - 12:00 PM.

In view of the foregoing, I declare my intent and commitment to the following terms and conditions:

1. To actively participate, submit all requirements, and uphold standards expected from the course and its participants;
2. To provide capacity building services such as instructorship, courseware development, and technical support under the Digital Teachers and Learners Project through ILCDB and/or its partner government agencies and education institutions;
3. To observe relevant copyright and intellectual property laws applicable to the learning resources and instructional materials received;
4. To serve the corresponding service obligation for one (1) year for at least one (1) training or as exigencies of service may require;
5. To refund in full, or proportionately, the cost of training received, under cases of failure to render the service obligation through fault or willful neglect, resignation, or other causes within my control.

I acknowledge and accept the incentives I will be receiving through my participation as a teacher-trainer. This includes the subsidized cost of training, opportunities for continuing professional development, and remuneration for professional services rendered based on the service obligation, subject to applicable government accounting and auditing rules and regulations.

I hereby declare that all the information in my application is complete and correct. I am aware that missing or incomplete information, whether deliberate or the result of negligence, may result in the denial of my participation, and if it is not noticed until after acceptance to the program – may lead to the revocation of my Certificate of Completion.

Date

Signature over Printed Name

MARIA LOURDES P. AQUILIZAN
Director III
ICT Literacy and Competency Development Bureau



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF INFORMATION AND
COMMUNICATIONS TECHNOLOGY

- BATCH 2: DICT Regional Cluster Offices - Asynchronous Training Schedule (August 16- 20, 2021 - Monday-Friday):

DATE	ACTIVITY
August 16, 2021 (Monday)	Start accomplishing the modules
August 17, 2021 (Tuesday)	Training continuation, Answer the feedback survey form
August 18, 2021 (Wednesday)	Training continuation
August 19, 2021 (Thursday)	Training continuation, Deadline of the feedback survey form
August 20, 2021 (Friday)	Finish the modules, Answer the overall training evaluation form

*** Pre-course survey will be accomplished by Aug 11, 2021**

- BATCH 2: DICT Regional Cluster Offices - Synchronous Synthesis Schedule (August 20, 2021 - Friday):

TIME	ACTIVITY
9:00 A.M. - 9:05 A.M.	Checking of Attendance and Countdown
9:05 A.M. - 9:15 A.M.	Opening Ceremony
	Prayer
	House Rules, Guidelines, and FAQs
9:15 A.M. - 10:15 A.M.	Breakout sessions (Modules A, B, C, and D)
10:15 A.M. - 10:30 A.M.	Short break
10:30 A.M. - 11:30 A.M.	Breakout sessions (Modules A, B, C, and D)
11:30 A.M. - 11:40 A.M.	Presentation of Certificate of Appreciation to the Course Developers
11:40 A.M. - 11:50 A.M.	Closing Remarks (DICT/DepEd San Juan/UP-College of Education)
11:50 A.M. - 11:55 A.M.	Group Photo
11:55 A.M. - 12:00 P.M.	Reminders and Announcements



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF INFORMATION AND
COMMUNICATIONS TECHNOLOGY

TRAINING SCHEDULE

STEM EDUCATION MASTER COURSE FOR TEACHERS 2021

Course Code	:CO-A1 STEM 2021-08-002,	Duration	: 20 hours
Time	: 9:00 A.M. - 11:00 A.M. (Launch/Orientation) 9:00 A.M. - 12:00 P.M. (Synthesis)	Platform	: Zoom (synchronous) and Workplace Learning and Development Platform (asynchronous)
Course Developers/ Resource Persons	: University of the Philippines - College of Education, Center for Integrated STEM Education	Course Officers	: Justine Jude Pura a Joana Clara Mae de Leon
Technical Support	: Emmanuel Ebor and Maria Cassandra Nicole Bermio	Documentation and Administrative Support	: Justine Mae Dayap and Maria Cassandra Nicole Bermio

- BATCH 2: DICT Regional Cluster Offices - Synchronous Orientation Schedule (August 16, 2021 - Monday):

TIME	ACTIVITY
9:00 A.M. - 9:05 A.M.	Checking of Attendance and Countdown
9:05 A.M. - 9:20 A.M.	Opening Ceremony
	Prayer
	National Anthem
	House Rules and FAQs
9:20 A.M. - 9:35 A.M.	Opening Remarks (DICT/DepEd San Juan)
9:35 A.M. - 9:45 A.M.	Introduction of the Course Developers
9:45 A.M. - 10:00 A.M.	Overview of the STEM Digital Interactive Modules
10:00 A.M. - 10:10 A.M.	Training Guidelines (DICT)
10:10 A.M. - 10:15 A.M.	Group Photo
10:15 A.M. - 10:40 A.M.	Question and Answer
10:40 A.M. - 10:50 A.M.	Closing Remarks (DICT/DepEd San Juan)
10:50 A.M. - 11:00 A.M.	Reminders