ព្រះរាជាណាចក្រកម្ពុជា

ជាតិ សាសនា ព្រះមហាក្សត្រ

វិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ

កម្មវិធីសិក្សាលម្អិត

សម្រាប់បណ្ដុះបណ្ដាលគ្រូបង្រៀនកម្រិតមធ្យមសិក្សា

ថ្នាក់បរិញ្ញាបត្រអប់រំ វិជ្ជាជីវៈគ្រូបង្រៀន (១២+៤)

ឯកទេស៖ គណិតវិទ្យា

មុខវិជ្ជា៖ ការប្រើ**ICT**សម្រាប់ការបង្រៀននិងរៀន **III**

ឆ្នាំទី៣

តុលា ២០២២

បុព្វកថា

ដើម្បីរួមចំណែកក្នុងការអនុវត្តយុទ្ធសាស្ត្រចតុកោណដំណាក់កាលទី៤របស់រាជរដ្ឋាភិបាលដែលបាន កំណត់យកការអភិវឌ្ឍធនធានមនុស្សជាអាទិភាពទីមួយ ក្រសួងអប់រំ យុវជន និងកីឡាបានកសាងផែនការ យុទ្ធសាស្ត្រវិស័យអប់រំឆ្នាំ២០១៩-២០២៣ ក្នុងគោលបំណងអភិវឌ្ឍមូលធនមនុស្សដើម្បីប្រែក្លាយកម្ពុជាទៅ ជាប្រទេសមានចំណូលមធ្យមកម្រិតខ្ពស់ក្នុងឆ្នាំ២០៣០ និងជាប្រទេសអភិវឌ្ឍន៍នៅឆ្នាំ២០៥០។ ដើម្បីឆ្លើយតប នឹងចក្ខុវិស័យនេះ ក្រសួងអប់រំ យុវជន និងកីឡា បាននិងកំពុងយកចិត្តទុកដាក់យ៉ាងខ្លាំងក្នុងការលើកកម្ពស់ គុណភាពអប់រំ ដើម្បីបង្កើនគុណភាពធនធានមនុស្សឱ្យស្របទៅនឹងសកលការូបនីយកម្មនៃការអប់រំនៅក្នុង តំបន់ និងលើសកលលោក តាមគោលការទីផ្សារការងារក្នុងសង្គមពុទ្ធិនាសតវត្សរ៍ទី២១នេះ។ ទន្ទឹមគ្នានេះដែរ ក្រសួងអប់រំ យុវជន និងកីឡាបានកំណត់យកគ្រូបង្រៀនជាអាទិភាពទី១ក្នុងកំណែទម្រង់របស់ខ្លួនដែលមាន ចែងក្នុងមុំទី១ស្តីពី "ការពង្រឹងគុណភាពអប់រំ វិទ្យាសាស្ត្រ និងបច្ចេកវិទ្យា" ។

តាមស្មារតីនេះ ក្រសួងអប់រំ យុវជន និងកីឡាបានបង្កើនកម្រិតនៃការបណ្តុះបណ្តាលគ្រូបង្រៀន បឋមសិក្សា និងមធ្យមសិក្សាបឋមភូមិឱ្យដល់កម្រិតបរិញ្ញាបត្រ (អប់រំ) តាមរយៈការបង្កើតវិទ្យាស្ថានគរុកោសល្យ ចំនួន២ គឺវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ និងវិទ្យាស្ថានគរុកោសល្យបាត់ដំបង ក្នុងគោលបំណង បណ្តុះបណ្តាលគ្រូបង្រៀនប្រកបដោយគុណសម្បទាពេញលេញរួមមានវិជ្ជាសម្បទា បំណិនសម្បទា កាយសម្បទា និងចរិយាសម្បទា ស្របតាមស្តង់ដារអន្តរជាតិ។ កម្មវិធីសិក្សាលម្អិតនេះ ត្រូវបានអភិវឌ្ឍឡើងស្របតាម ក្របខណ្ឌកម្មវិធីសិក្សារបស់វិទ្យាស្ថាន ដើម្បីធានានូវសង្គតិភាព និងគុណភាព ក្នុងការអនុវត្តកម្មវិធីបណ្តុះបណ្តាល គ្រូបង្រៀននេះឱ្យមានប្រសិទ្ធភាពខ្ពស់។

ក្រសួងអប់រំ យុវជន និងកីឡាជឿជាក់ថា កម្មវិធីសិក្សាលម្អិតនេះនឹងជាឯកសារសំខាន់ក្នុងការជួយ គាំទ្រដល់ការអនុវត្តកម្មវិធីបណ្តុះបណ្តាលគ្រូបង្រៀនឱ្យមានគុណភាពខ្ពស់ប្រកបដោយចំណេះដឹង សមត្ថភាព ជំនាញវិជ្ជាជីវៈ គុណធម៌ សីលធម៌ សុខភាពល្អ និងស្មារតីទទួលខុសត្រូវ ដើម្បីធានាបាននូវការអប់រំ ប្រកបដោយគុណភាពនិងប្រសិទ្ធភាព។ ក្រសួងអប់រំ យុវជន និងកីឡា សូមថ្លែងអំណរគុណដល់មន្ត្រីជំនាញ គណៈកម្មការ អនុគណៈកម្មការ ក្រុមការងារ ដែលអភិវឌ្ឍវិស័យអប់រំ និងអ្នកពាក់ព័ន្ធទាំងអស់ដែលបាន យកចិត្តទុកដាក់ក្នុងការរៀបចំឯកសារនេះ។

ថ្ងៃ   ខែ   ឆ្នាំជូត ទោស័ក ព.ស.២៥៦៤

រាជធានីភ្នំពេញ ថ្ងៃទី   ខែ   ឆ្នាំ២០២០

រដ្ឋមន្ត្រីក្រសួងអប់រំ យុវជន និងកីឡា

អារម្ភកថា

កម្មវិធីសិក្សាលម្អិត ការប្រើ ICT សម្រាប់ការបង្រៀននិងរៀន សម្រាប់អប់រំគ្រូបង្រៀនកម្រិតមធ្យមសិក្សា ថ្នាក់បរិញ្ញាបត្រ (១២+៤) ងកទេសគណិតវិទ្យាត្រូវបានរៀបចំឡើងដោយមន្ត្រីអប់រំរបស់ក្រសួងអប់រំ យុវជន និងកីឡា មកពីនាយកដ្ឋាន នានា ក្រោមឱវាទក្រសួង សាកលវិទ្យាល័យ វិទ្យាស្ថានជាតិអប់រំ រួមជាមួយដៃគូអភិវឌ្ឍដូចជាអង្គការ JICA/E-TEC អង្គការ VVOB និងផ្សេងទៀត។

ខ្លឹមសារនៅក្នុងកម្មវិធីសិក្សាលម្អិតនេះរួមមានកម្មវិធីសិក្សាលម្អិតសម្រាប់ឆ្នាំសិក្សាទី៣ ដែលមានទាំងចំណងជើង មេរៀន និងវិធីសាស្ត្របង្រៀនស្នើសម្រាប់អនុវត្តការបង្រៀន និងរៀនតាមសប្តាហ៍នីមួយៗ។ កម្មវិធីសិក្សានេះ គឺជាឯកសារ ដ៏សំខាន់របស់វិទ្យាស្ថានគរុកោសល្យ ដែលសាស្ត្រាចារ្យឧទ្ទេសអាចយកទៅប្រើប្រាស់ក្នុងកម្មវិធីបណ្ដុះបណ្ដាលគ្រូបង្រៀន ប្រកបដោយប្រសិទ្ធភាព និងទទួលបានលទ្ធផលល្អ។

ក្រុមការងារយើងខ្ញុំសូមថ្លែងអំណរគុណចំពោះថ្នាក់ដឹកនាំក្រសួងអប់រំ យុវជន និងកីឡា ដែលបាន ជួយឧបត្ថម្ភ គាំទ្រក្នុងការអភិវឌ្ឍកម្មវិធីសិក្សាដ៏មានតម្លៃនេះ។ យើងខ្ញុំទាំងអស់គ្នា នឹងបន្តខិតខំកែលម្អកម្មវិធីសិក្សានេះ បន្ថែមទៀត ដើម្បីឱ្យការអប់រំគ្រូបង្រៀននៅវិទ្យាស្ថានគរុកោសល្យ កាន់តែមានគុណភាពប្រសើរឡើង។

គណៈកម្មការមុខវិជ្ជា ICT

2

គណៈកម្មការរៀបចំ

គណៈកម្មការគ្រប់គ្រង

១. ឯ.ឧ. បណ្ឌិតសភាចារ្យ ហង់ ជួន ណារ៉ុន រដ្ឋមន្ត្រីក្រសួងអប់រំ យុវជន និងកីឡា   ប្រធាន

២. ឯ.ឧ. បណ្ឌិតសភាចារ្យ ណាត ប៉ុនរឿន រដ្ឋលេខាធិការក្រសួងអប់រំ យុវជន និងកីឡា   អនុប្រធាន

៣. ឯកឧត្តម ហ៊ាង ស៊ីណេ អនុរដ្ឋលេខាធិការក្រសួងអប់រំ យុវជន និងកីឡា   សមាជិក

៤. ឯកឧត្តម លាង សេងហាក់ អនុរដ្ឋលេខាធិការក្រសួងអប់រំ យុវជន និងកីឡា   សមាជិក

៥. ឯកឧត្តម ពុត សាមិត្ត អគ្គនាយកអប់រំ   សមាជិក

គណៈកម្មការបច្ចេកទេស

១. ឯ.ឧ. បណ្ឌិតសភាចារ្យ ណាត ប៉ុនរឿន រដ្ឋលេខាធិការក្រសួងអប់រំ យុវជន និងកីឡា   ប្រធាន

២. ឯកឧត្តម ហ៊ាង ស៊ីណេ អនុរដ្ឋលេខាធិការក្រសួងអប់រំ យុវជន និងកីឡា   អនុប្រធាន

៣. ឯកឧត្តម លាង សេងហាក់ អនុរដ្ឋលេខាធិការក្រសួងអប់រំ យុវជន និងកីឡា   អនុប្រធាន

៤. ឯកឧត្តម ពុត សាមិត្ត អគ្គនាយកអប់រំ   អនុប្រធាន

៥. ឯកឧត្តម អុក សិទ្ធិជាតិ អគ្គនាយកកីឡា   សមាជិក

៦. ឯកឧត្តម ជេត ជាលី សាកលវិទ្យាធិការនៃសាកលវិទ្យាល័យភូមិន្ទភ្នំពេញ   សមាជិក

៧.ឯកឧត្តមបណ្ឌិត ឪ សមសុំដេត អគ្គនាយករងអប់រំ   សមាជិក

៨.ឯកឧត្តមបណ្ឌិត សិត សេង នាយកវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

៩.ឯកឧត្តម ប៊ិន ផុំ នាយកវិទ្យាស្ថានគរុកោសល្យបាត់ដំបង   សមាជិក

១០. លោកបណ្ឌិត ម៉ុក សារ៉ុម អគ្គនាយករងអប់រំ   សមាជិក

១១. លោកជំទាវបណ្ឌិត យួន វិច្ឆិកា អគ្គនាយករងនៃអគ្គនាយកដ្ឋានរដ្ឋបាលនិងហិរញ្ញវត្ថុ   សមាជិក

១២. លោកបណ្ឌិត សំអោ អង្គារតន៍ អគ្គនាយករងគប.ជក   សមាជិក

១៣. លោក ដៃ ប៉េងឡេង ប្រធាននាយកដ្ឋានបវ   សមាជិកប្រចាំការ

១៤. លោកបណ្ឌិត សុខ ស្យុត្រ ព្រឹទ្ធបុរសនៃសាលាក៍វិទ្យាល័យភូមិន្ទភ្នំពេញ   សមាជិក

១៥. លោក តាកាហាស៊ី កូជិ ប្រធានគម្រោងE-TEC   សមាជិក

គណៈកម្មការមុខវិជ្ជាងកទេស

១. លោកសាស្ត្រាចារ្យ វ៉ាគីអូ អួយ៉ាណាហ្គិ សាស្ត្រាចារ្យនៃសាកលវិទ្យាល័យអប់រំណាវ៉ា   ប្រធាន

២. លោកសាស្ត្រាចារ្យ គីតាហ្គាវ៉ា តាកិហារ៉ូ សាស្ត្រាចារ្យនៃសាកលវិទ្យាល័យអប់រំណាវ៉ា   អនុប្រធាន

៣. លោក ជ សុភា ប្រធានដេប៉ាតឺម៉ង់ICTនៃវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

៤. លោក ជួង សុវណ្ណតារ អនុប្រធានដេប៉ាតឺម៉ង់ICTនៃវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

៥. លោក កែវ ទូច អនុប្រធានដេប៉ាតឺម៉ង់ICTនៃវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

៦. លោក ម៉េង សុខជា គ្រូឧទ្ទេសនៃវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

៧.លោក ហ៊ុម ធីយ៉ា គ្រូឧទ្ទេសនៃវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

៨. លោក ឌី ច័ន្ទពិសិដ្ឋ គ្រូឧទ្ទេសនៃវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

៩. លោក ម៉ក់ វង្សា គ្រូឧទ្ទេសនៃវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

១០. លោក ទូច សារីម គ្រូឧទ្ទេសនៃវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

១១. លោក ស៊ិន សុវណ្ណា គ្រូឧទ្ទេសនៃវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

១២. លោក សេង ណុល គ្រូឧទ្ទេសនៃវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ   សមាជិក

១៣. លោក ហ៊ុន រ៉ារី ព្រឹទ្ធបុរសរងនៃវិទ្យាស្ថានគរុកោសល្យបាត់ដំបង   សមាជិក

១៤. លោក ណុប តារាវ៉ង្ស អនុប្រធានដេប៉ាតឺម៉ង់ICTនៃវិទ្យាស្ថានគរុកោសល្យបាត់ដំបង   សមាជិក

១៥. លោក ឌី ចាន់ខឿន អនុប្រធានដេប៉ាតឺម៉ង់ICTនៃវិទ្យាស្ថានគរុកោសល្យបាត់ដំបង   សមាជិក

មាតិកា

Use of ICT in Teaching and Learning III

I. General information

Category	Subject Knowledge
Lecturer	Name: ************ Email: ************
Room	Room *****, Building *****
Student Teachers	3rd year of Lower Secondary Education Programme
Semester	Semester 1: 15 classes (2 hours ×15 weeks) Semester 2: 15 classes (2 hours ×15 weeks)
Date	November 2018 – August 2019
Credits	2(0-2)

II. Module Description

    This course provides an overview of the use of Information and Communication Technology (ICT) in teaching and focuses on a knowledge and understanding of ICT, learning how to use ICT to prepare lesson plans, making teaching and learning materials and working together, using the internet without violating copyrights. Student teachers will acquire knowledge and skills in basics of computer and internet literacy. Student teachers will possess competencies in using of ICT for communication, collaboration, collection and analysis of data for further study and research effectively. Also, Student teachers will understand the basic idea to teach their students how to use ICT.

III. Module Objectives

    After the study of this module, student teachers will be able:

- CLO 1: Identify ethics, resources, technology, and technology tools online used in teaching and learning (PLO2)

- CLO2: Use data through information and communication technology to support effective teaching and learning and professional ethics (PLO12)

- CLO3: Use information and communication technology tools to support teaching and learning in response to education in the digital age (PLO11)

IV. Methodology

- Lecture
- Practice
- Group Discussion
- Individual Presentation

V. Assessment (assignment, assessment criteria, hand-in date)

    Preservice students will be evaluated comprehensively based on class attendance, contribution in class, report and performance in accordance with the assessment criteria.

No.	Assessment	Assessment criteria
1	Class attendance (10%)	More than 80 % of class attendance in each semester is prerequisite to submit assignments or to take examinations.
2	Contribution (20%)	Points to consider the class contribution: - To participate actively in group discussions. - To express your own opinions in class. - To hear earnestly the other students' opinions in class.
3	Report/essay (30%)	**1st semester:** Theme: "Using Google Sheets, please create a student list with total score, average, rank, mention, and number of students by counting the number of male and females in any class of a practical school. And then, send the link of the workbook to your lecturer." - Date of hand-in by March 30th - The essay will be evaluated based on the Criteria for Evaluation Written Work in TEC. **2nd semester:** Theme: "Please create a lesson plan for a science subject by using OpenOffice.org writer, Adobe Photoshop, and store the result in Google Drive. After that, share with the lecturer a presentation slide." - Date of hand-in by August 30th The essay will be evaluated based on the Criteria for Evaluation Written Work in TEC.
4	Performance (40%)	The assessment will be made based on the criteria for evaluation in each midterm and final of each semester: - Semester 1: The midterm will occur during the 7th week of the 1st semester and the final examinations for the 1st semester will be made during the 15th week of the 1st semester. - Semester 2: The midterm will occur during the 7th week of the 2nd semester and the final examinations for the 2nd semester will be made during the 15th week of the 2nd semester.

VI. Other Course Specific Information

None

VII. Reading List and Resources

- The 3rd Edition of Computer Education and Learning Booklet by the Ministry of Education, Youth and Sports
- Intel Teach start reading course, 2009 Edition
- Department of Education, Youth and Sport, grade 11, published in 2016 by the Ministry of Education Youth and Sport

VIII. Lesson Schedule in 2021-2022

1) Semester 1:Finding,Creating Digital Resource and Publishing :1 credit (2 hours × 15 weeks)

Week No.	Date	Topic
1-1	November	CopyRight

1-2		Practice
2-1	November	CopyRight
2-2		Practice
3-1	December	Website Krou(Introduction and Register to Krou Website)
3-2		Practice
4-1	December	Website Krou (Search Document and download documents from krou website)
4-2		Practice
5-1	December	Website Krou(Upload documents Image Video to krou website)
5-2		Practice
6-1	January	Find digital resources(Documents)
6-2		Practice
7-1	January	Find digital resources(Download Images)
7-2		Practice
8-1	January	Find digital resources(Download Videos)
8-2		Practice
9-1	January	Introduction to Image Processing Tools & Gimp
9-2		Practice
10-1	February	Installing and configuring Gimp
10-2		Practice
11-1	February	Working with layers
11-2		Practice
12-1	February	Working with brushes
12-2		Practice
13-1	February	Working with selections
13-2		Practice
14-1	March	Working with masks
14-2		Practice
15-1	March	Cropping and Resizing
15-2		Practice

2) **Semester 2: Finding, Creating Digital Resource and Publishing :1 credit (2 hours × 15 class hours)**

Week No.	Date	Topic
1-1	April	Record screen Video (Introduction and install Program)
1-2		Practice
2-1	April	Record screen Video (Project)
2-2		Practice
3-1	May	Use Video editing application 1 - Basic function -
3-2		Practice
4-1	May	Use Video editing application 2 - Connecting videos -
4-2		Practice
5-1	May	Use Video editing application 3 - Editing sound -
5-2		Practice
6-1	June	Use Video editing application 4 - Capture video and audio
6-2		Practice
7-1	June	Use Video editing application 5 - Sending in various formats of video and audio -
7-2		Practice
8-1	June	Review video editing
8-2		Practice
9-1	June	Review video editing
9-2		Practice
10-1	June	Content Publishing with Scribus: Getting Started, User Interface, Image Frames and Properties
10-2		Practice
11-1	July	Content Publishing with Scribus: Working with Text Frames and Pages
11-2		Practice
12-1	July	Content Publishing with Scribus: Using Templates, Numbering and Master Pages
12-2		Practice
13-1	July	Content Publishing with Scribus: Styles and Color Management
13-2		Practice
14-1	July	Content Publishing with Scribus: Working with shapes and properties
14-2		Practice

15-1	August	Content Publishing with Scribus: Align and Distribute
15-2		Practice

1. Semester 1:1 credit (2 hours × 15 weeks)

Week 1: Copyright

1	**Date/time**	
2	**Venue**	
3	**Contents**	Here, you consider information moral which we should pay attention to in information society. Knowing what information morals are, you explain the similarities and differences between morals in everyday life and information morals. ・Discuss the rules and norms in the information society and discuss why it is necessary to protect them.
4	**Learning Outcomes**	After completing work for this class, students will be able to explain something about information morals and explain the significance of protecting it
5	**Main Questions**	Can you explain what information morality is and the significance of protecting it?
6	**Reading List and Resources**	Compulsory readings https://plato.stanford.edu/entries/it-moral-values/ Further readings Fabris,A.(2018) Ethics of Information and Communication Technologies (SpringerBriefs in Applied Sciences and Technology). Springer. Other Resources (e.g., websites, etc.)

Week 2: Copyright(end)

1	**Date/time**	
2	**Venue**	
3	**Contents**	Here, you consider copyright which we should pay attention to in information society. ・Know what copyright is, what is intellectual property rights. ・Recognize why it is important to respect copyright.
4	**Learning Outcomes**	After completing work for this class, students will be able to explain the meaning of copyright and explain why it is important to respect it
5	**Main Questions**	Can you explain what copyright is and why respecting it is important?
6	**Reading List and Resources**	Compulsory readings Lindeen,M.(2016). Smart Online Searching: Doing Digital Research (Searchlight Books: What Is Digital Citizenship?). Lernerclassroom. Further readings Other Resources (e.g., websites, etc.) https://www.whatiscopyright.org/

Week 3: Website Krou(Introduction and Register to Krou Website)

1	**Date/time**	
2	**Venue**	
3	**Contents**	Krou website : ● Introduction :understand teacher web site (www.krou.moeys.gov.kh) and how to sign up the website ,know how to search necessary document and resources on the teacher website, know how to upload documents and teaching material in to the teacher website know how to get into other academic subject (Math, Physic, Chemistry, Social science,…) ● How to Register account of krou website and active account ● Practice
4	**Learning Outcomes**	After completing work for this class, you will be able to understand about krou website and can register account of krou website
5	**Main Questions**	What is the krou website? Why do we need to register an account on the krou website?
6	**Reading List and Resources**	http://krou.moeys.gov.kh/kh/

Week 4: Website Krou (Search Document and download documents from krou website)

1	**Date/time**	
2	**Venue**	
3	**Contents**	Krou website : Search by ● keyword ● grade ● Level ● Subject How to download all documents image video from krour website
4	**Learning Outcomes**	After completing work for this class, you will be able to understand about search by keyword, grade, level and can download all documents
5	**Main Questions**	Why do you search documents from the krou website? Why do you need to classify by grade, level, subject when we search documents?
6	**Reading List and Resources**	http://krou.moeys.gov.kh/kh/

Week 5: Website Krou(Upload documents Image Video to krou website)

1	**Date/time**	
2	**Venue**	

3	**Contents**	Krou website : after we register account in krou website you can share ● Lesson Plan ● Homework ● Tools ● Slide ● Images ● Video all your documents other teachers can download.
4	**Learning Outcomes**	After completing work for this class, you will be able to understand how to upload all document to krou website
5	**Main Questions**	Why do you upload your documents to krou website?
6	**Reading List and Resources**	http://krou.moeys.gov.kh/kh/

Week 6: Find digital resources (Document)

1	**Date/time**	
2	**Venue**	

3	**Contents**	Effective Google Search
		● Introduction
		● Histories of Google
		● Google's 10 philosophies
		● How to search on Google
		   ○ Start with the basics
		   ○ Search using your voice
		   ○ Choose words carefully
		   ○ Don't worry about the little things
		   ○ Find quick answers
		● Expert Search
		● Necessary documents and resources on the krou website

4	**Learning Outcomes**	After completing this class, you will be able to: - Understanding about Google's 10 philosophies - Understanding well about how to search on google search - Understanding more about advanced search techniques. - Search necessary documents and resources on the krou website - know how to use teacher web site(www.krou.moeys.gov.kh) to search for necessary resources and materials assisting in teaching and learning process
5	**Main Questions**	❖ What is google search? ❖ How to search information or documents on Google? ❖ How well do you know about Google's 10 philosophies? ❖ Why do you need to search on the krou website?
6	**Reading List and Resources**	**https://support.google.com/websearch/answer/134479?hl=en** http://krou.moeys.gov.kh/kh/

Week 7: Find digital resources(Image and Download)

1	Date/time	
2	Venue	
3	Contents	This Lesson you will able to lean How to: ● Download Image from Google ● Size ● Color ● Type ● Time
4	Learning Outcomes	After completing this class, you will be able to: ● Download Image from Google ● Know well about image (Size, Color, Type) ● Understanding the time that image posted
5	Main Questions	❖ What is Google Images? ❖ How Do You Access Google Images?
6	Reading List and Resources	https://www.youtube.com/watch?v=hfM8RQ6VaQ0 https://www.lifewire.com/what-is-google-images-4585165

Week 8: Find digital resources (Video and Download)

1	Date/time	
2	Venue	
3	Contents	This Lesson you will able to lean How to: ● Download Video from Facebook ● Download Video from YouTube ● Download Video from TikTok
4	Learning Outcomes	After completing this class, you will be able to know about : ● How to Download Video from Facebook ● How to Download Video from YouTube ● How to Download Video from TikTok
5	Main Questions	❖ What is catchvideo.net? ❖ How to download videos online? ❖ How to save videos from Facebook? ❖ Where are downloaded TikTok videos saved? ❖ How to download TikTok videos?

6	**Reading List and Resources**	https://catchvideo.net/ https://musicaldown.com/en/ https://fb-search.com/facebook-video-downloader https://www.google.com/search?q=How+to+download+TikTok+videos+without+watermark

Week 9: Introduction to Image Processing Tools & Gimp

1	**Date/time**	
2	**Venue**	
3	**Contents**	● Introduction to Image Processing ● Introduction to Image Processing Tools ● Introduction to Gimp
4	**Learning Outcomes**	After completing this class, student will be able to: ● Explain about Digital Image Processing ● Describe about Digital Image Processing tools ● Explain about a digital image processing tool called GIMP
5	**Main Questions**	● Please tell what Image Processing tools are ● Please tell what Image Processing is ● Please tell what Image Compression is ● Please tell what Image Filtering is ● Please tell what Image Processing tools are ● Please tell what GIMP is
6	**Reading List and Resources**	GNU Image Manipulation Program-User Manual.pdf The Ultimate GIMP 2.10 Guide - Learning Professional Photo editing.pdf https://docs.gimp.org/2.10/en/ https://sisu.ut.ee/imageprocessing/book/1 https://en.wikipedia.org/wiki/Digital_image_processing https://wiki.gimp.org/index.php/Main_Page https://en.wikipedia.org/wiki/Image_compression https://en.wikipedia.org/wiki/Photo_manipulation

Week 10: Installing and configuring Gimp

1	Date/time	
2	Venue	
3	Contents	- Installing Gimp - Exploring and Configuring Gimp's user interface - Working with windows layout - History panel - Opening and saving a work file
4	Learning Outcomes	After completing this class, student will be able to: - Explain about Installing Gimp - Explain about Configuring Gimp
5	Main Questions	- Please tell how to Installing GIMP - Please tell how to Configuring Gimp
6	Reading List and Resources	GNU Image Manipulation Program-User Manual.pdf The Ultimate GIMP 2.10 Guide - Learning Professional Photo editing.pdf https://docs.gimp.org/2.10/en/ https://www.wikihow.com/Install-GIMP https://www.youtube.com/watch?v=bXKdpG9_q1A https://docs.gimp.org/en/gimp-concepts-setup.html

Week 11: Working with layers

1	Date/time	
2	Venue	
3	Contents	- Working with layers - Background layer - Zooming and panning
	Learning Outcomes	After completing this class, student will be able to: Explain layers, background layer, zooming and panning clearly through the group and teacher explanations

		● Discuss layers, background layer, zooming and panning clearly through group discussions
		● Train students to use layers for creating images and learning materials.
5	**Main Questions**	● What is Layer? Why do we need layers in editing images?
		● What type of background layer? and how to replace background color?
		● How to use Zooming and panning
6	**Reading List and Resources**	GNU Image Manipulation Program-User Manual.pdf The Ultimate GIMP 2.10 Guide - Learning Professional Photo editing.pdf https://docs.gimp.org/2.10/en/ https://www.makeuseof.com/tag/gimp-background-tweaks/ https://docs.gimp.org/2.4/en/rn01re05.html

Week 12: Working with brushes

1	**Date/time**	
2	**Venue**	
3	**Contents**	● Using paintbrush ● Brush special effects
4	**Learning Outcomes**	After completing this class, student will be able to: ● Explain paintbrush and brush special effects clearly through group discussions and teacher explanations ● Discuss paintbrush and brush special effects clearly through group discussions ● Train student to use paintbrush tool to create image and learning materials
5	**Main Questions**	● What is Brush tool? ● What type of paint brush tools? ● What are Brush special effects?
6	**Reading List and Resources**	GNU Image Manipulation Program-User Manual.pdf The Ultimate GIMP 2.10 Guide - Learning Professional Photo editing.pdf https://docs.gimp.org/2.10/en/ https://docs.gimp.org/2.10/en/gimp-tool-paintbrush.html https://pnghut.com/png/MNPLvz8DDi/drawing-paintbrush-pdf-painting-transparent-png

https://www.youtube.com/watch?v=gn32doG9WoM

https://www.youtube.com/watch?v=VKklwkKh_sM

https://www.youtube.com/watch?v=jUOsNGsdHvY

https://www.hscripts.com/tutorials/gimp/pdf-download.php

Week 13: Working with selections

1	Date/time	
2	Venue	
3	Contents	● Rectangle and Ellipse select tools ● Path select tool ● Free select tool
4	Learning Outcomes	After completing this class, student will be able to: ● Discover that the right selection is the key to getting the result they want ● Use the right selection tools for only parts of the image they want to be affected ● Make selection using some selection tools such as: rectangle, ellipse, free (lasso) selection, contiguous regions (magic wand) ● Edit images using select by color, select shapes from the image and foreground selection
5	Main Questions	● Can you imagine why there are selection tools in GIMP? ● Can you tell how many selection tools are there in GIMP? ● Please tell what the 7 selection tools are and how to use these tools
6	Reading List and Resources	GNU Image Manipulation Program-User Manual.pdf The Ultimate GIMP 2.10 Guide - Learning Professional Photo editing.pdf https://docs.gimp.org/2.10/en/ https://docs.gimp.org/2.10/en/gimp-tools-selection.html https://docs.gimp.org/2.10/en/gimp-painting.html#gimp-concepts-selection

Week 14: Working with masks

1	Date/time	
2	Venue	

3	**Contents**	- The quick mask - The layer mask - Selecting channel
4	**Learning Outcomes**	After completing this class, student will be able to: - Explain about Layer masks - Describe about how to add a mask to a layer - Describe to how to modify a layer transparency - Demonstrate how to do selective colorization
5	**Main Questions**	- What are Layer masks? - How do you add a mask to a layer? - Please tell how to modify a Layers Transparency with the Mask - Please tell how to do selective colorization
6	**Reading List and Resources**	GNU Image Manipulation Program-User Manual.pdf The Ultimate GIMP 2.10 Guide - Learning Professional Photo editing.pdf https://docs.gimp.org/2.10/en/ https://docs.gimp.org/2.10/en/gimp-layer-mask-add.html https://www.gimp.org/tutorials/Layer_Masks/

Week 15: Cropping and Resizing

1	**Date/time**	
2	**Venue**	
3	**Contents**	- Cropping - Resizing - Transformations
4	**Learning Outcomes**	After completing this class, student will be able to: - Explain about Cropping - Explain about Resizing
5	**Main Questions**	- Please tell me how to crop an image. - Please tell me how to resize an image.

6	**Reading List and Resources**	GNU Image Manipulation Program-User Manual.pdf
		The Ultimate GIMP 2.10 Guide - Learning Professional Photo editing.pdf
		https://docs.gimp.org/2.10/en/
		https://www.wikihow.com/Crop-an-Image-Using-GIMP
		https://www.youtube.com/watch?v=rEdDLm9J2Ok
		https://smallbusiness.chron.com/resize-images-using-gimp-45291.html
		https://www.youtube.com/watch?v=v8uMGSuyENc

2. Semester 2:1 credit (2 hours × 15 weeks)

Week 1: Record Screen Video with Zoom

1	**Date/time**	
2	**Venue**	
3	**Contents**	In this lesson, student will learn such as: ● Introduction to software for record video online and offline ● How to record screen with Zoom ● How to change local recording settings
4	**Learning Outcomes**	After completing this lesson student will able: ● Define software for record screen both online and offline ● Understand to record screen with Zoom ● Identify to change local recording settings ● Implement to record video with Zoom
5	**Main Questions**	● What is software to record screen? ● How to record screen with Zoom? ● How to change local recording settings?
6	**Reading List and Resources**	https://support.zoom.us/hc/en-us/articles/201362473-Enabling-and-starting-local-recordings

Week 2: Practice Record Screen Video with Zoom

1	**Date/time**	
2	**Venue**	

3	**Contents**	In this lesson, student will learn such as: ● Preparing documents for record (lesson…) follow requirement ● Implement to record with Zoom
4	**Learning Outcomes**	After completing this lesson student will able: ● Create video with Zoom ● Implement sharing video on Google Drive
5	**Main Questions**	● Which topic do you want to record? ● What resource do you need to record?
6	**Reading List and Resources**	https://support.zoom.us/hc/en-us/articles/201362473-Enabling-and-starting-local-recordings

Week 3: Installation Kdenlive, User Interface, Understanding Audio/Video Format

1	**Date/time**	
2	**Venue**	
3	**Contents**	Video is an effective audiovisual material. Here, you learn how to use video editing and how to create video materials. First of all, what video editing software can do, you understand the menu bar to use that function.
4	**Learning Outcomes**	After completing work for this class, you will be able to understand the meaning and function of menu bar to use video editing application.
5	**Main Questions**	How can you explain things you have to be careful when using menu bar for video editing application?
6	**Reading List and Resources**	Compulsory readings https://www.makeuseof.com/tag/videopad-tutorial-review/ http://help.nchsoftware.com/help/en/videopad/mac/help.pdf https://tutorial-videopad.blogspot.com/2016/02/video-editing-introduction-tutorial-videopad.html Further readings Connell,A. and Edwards,A.(2014). A Practical Guide to Teaching Computing and ICT in the Secondary School (Routledge Teaching Guides). Routledge. Crawford,R. (2013) .The ICT Teacher's Handbook: Teaching, learning and managing ICT in the secondary school. Routledge.

Daling,R.(2018). Secondary School Teachers' Competency in ICT. LAP Lambert Academic Publishing.

Russell,T.(2017). Teaching and Using ICT in Secondary Schools. David Fulton Publishers.

Woollard,J.(2007). Learning and Teaching Using ICT in Secondary Schools (Achieving QTS Series). Sage Publications Ltd.

Other Resources (e.g., websites, etc.)

https://www.borrowlenses.com/blog/how-to-edit-video-for-beginners/

https://filmora.wondershare.com/video-editing-tips/how-to-edit-videos.html

Week 4: Creating First Project, Understanding Timeline, Create Slides Show (Image/Audio/Text)

1	Date/time	
2	Venue	
3	Contents	Here, you will learn how to edit three videos using sample videos. You think how to connect from one image to the second image and how to use the transition function such as wipe.
4	Learning Outcomes	After completing work for this class, students will be able to understand how to connect from one image to the second image.
5	Main Questions	How can you explain things you have to be careful when connecting from one image to the second image?
6	Reading List and Resources	Compulsory readings https://www.nchsoftware.com/videopad/tutorial.html#editing Further readings Connell,A. and Edwards,A.(2014). A Practical Guide to Teaching Computing and ICT in the Secondary School (Routledge Teaching Guides). Routledge. Crawford,R. (2013) .The ICT Teacher's Handbook: Teaching, learning and managing ICT in the secondary school. Routledge. Daling,R.(2018). Secondary School Teachers' Competency in ICT. LAP Lambert Academic Publishing. Russell,T.(2017). Teaching and Using ICT in Secondary Schools. David Fulton Publishers. Woollard,J.(2007). Learning and Teaching Using ICT in Secondary Schools (Achieving QTS Series). Sage Publications Ltd.

		Other Resources (e.g., websites, etc.)

Week 5: Audio Tools

1	**Date/time**	
2	**Venue**	
3	**Contents**	Here you learn how to edit narration and background music using sample videos. You think how to put the narration in sample video and what kind of audio level it is effective to edit background music.
4	**Learning Outcomes**	After completing work for this class, students will be able to understand effective sound editing method.
5	**Main Questions**	How can you explain things you have to be careful when editing sound?
6	**Reading List and Resources**	Compulsory readings https://www.nchsoftware.com/videopad/tutorial.html Further readings Connell,A. and Edwards,A.(2014). A Practical Guide to Teaching Computing and ICT in the Secondary School (Routledge Teaching Guides). Routledge. Crawford,R. (2013) .The ICT Teacher's Handbook: Teaching, learning and managing ICT in the secondary school. Routledge. Daling,R.(2018). Secondary School Teachers' Competency in ICT. LAP Lambert Academic Publishing. Russell,T.(2017). Teaching and Using ICT in Secondary Schools. David Fulton Publishers. Woollard,J.(2007). Learning and Teaching Using ICT in Secondary Schools (Achieving QTS Series). Sage Publications Ltd. Other Resources (e.g., websites, etc.)

Week 6: Video Editing

1	**Date/time**	
2	**Venue**	
3	**Contents**	Here, you learn how to import and edit videos taken with a video camera, tablet, smartphone etc. into a computer. As a teaching and learning material to use in the lesson, you practice taking pictures and recoding a video and import them to your computer

4	**Learning Outcomes**	After completing work for this class, students will be able to understand how to import images and video taken with external media to computer.
5	**Main Questions**	How can you explain things you have to be careful when importing images and video taken with external media to computer.?
6	**Reading List and Resources**	Compulsory readings https://www.nchsoftware.com/videopad/tutorial.html Further readings Connell,A. and Edwards,A.(2014). A Practical Guide to Teaching Computing and ICT in the Secondary School (Routledge Teaching Guides). Routledge. Crawford,R. (2013) .The ICT Teacher's Handbook: Teaching, learning and managing ICT in the secondary school. Routledge. Daling,R.(2018). Secondary School Teachers' Competency in ICT. LAP Lambert Academic Publishing. Russell,T.(2017). Teaching and Using ICT in Secondary Schools. David Fulton Publishers. Woollard,J.(2007). Learning and Teaching Using ICT in Secondary Schools (Achieving QTS Series). Sage Publications Ltd. Other Resources (e.g., websites, etc.)

Week 7: Resize Video, Overlay Video, Text Animation

1	**Date/time**	
2	**Venue**	
3	**Contents**	Here you learn how to export the edited video and sound in various formats. You learn how to select the format to export, considering the media you want to display and what format it fits the viewer's environment.
4	**Learning Outcomes**	After completing work for this class, students will be able to understand how to export the edited video and sound in various formats.
5	**Main Questions**	How can you explain things you have to be careful when exporting the edited video and sound in various formats?
6	**Reading List and Resources**	Compulsory readings https://www.nchsoftware.com/videopad/tutorial.html Further readings

Armstrong,H.(2016). Digital Design Theory: Readings from the Field (Design Briefs). Princeton Architectural Press.

Connell,A. and Edwards,A.(2014). A Practical Guide to Teaching Computing and ICT in the Secondary School (Routledge Teaching Guides). Routledge.

Crawford,R. (2013) .The ICT Teacher's Handbook: Teaching, learning and managing ICT in the secondary school. Routledge.

Daling,R.(2018). Secondary School Teachers' Competency in ICT. LAP Lambert Academic Publishing.

Russell,T.(2017). Teaching and Using ICT in Secondary Schools. David Fulton Publishers.

Woollard,J.(2007). Learning and Teaching Using ICT in Secondary Schools (Achieving QTS Series). Sage Publications Ltd.

Other Resources (e.g., websites, etc.)

Week 8,9: Review Video Editing

Week 10: Content Publishing with Scribus: Getting Started, User Interface, Image Frames and Properties

1	Date/time	
2	**Venue**	
3	**Contents**	Scribus is free, professional desktop publishing software similar to Adobe InDesign and QuarkXPress and used to design and produce magazines, newsletters, print-advertising, brochures, calendars, and pretty much anything that requires text to look visually appealing on paper. In this lesson, you will be able to learn: ● How to get started with Scribus ● Download and install Scribus ● Understanding the User Interface of Scribus ● Page layout and settings in Scribus ● Empty, white spaces and cover pages ● Image Frames and Properties ● Working with Plugins
4	**Learning Outcomes**	After completing work for this class, you will be able to: ● Describe what you can do with Scribus or Desktop Publishing Software ● Demonstrate how to download and install Scribus ● Know how to set Page Layout and settings ● Describe what Empty, white spaces and cover pages are ● Explain about Image frames and working with plugins
5	**Main Questions**	● What can you do with Scribus? ● Please tell how to download and install Scribus

		● Please tell what you can do with Page Layout and Settings in Scribus ● What is Image Frames? Please describe its properties
6	**Reading List and Resources**	https://wiki.scribus.net/canvas/Get_Started_With_Scribus:1 https://wiki.scribus.net/canvas/Get_Started_With_Scribus:3 https://wiki.scribus.net/canvas/Get_Started_With_Scribus:4 https://wiki.scribus.net/canvas/Working_with_image_frames https://youtu.be/hMlT9C6xcDw https://youtu.be/nB4dTL1IwI4

Week 11: Content Publishing with Scribus: Working with Text Frames and Pages

1	**Date/time**	
2	**Venue**	
3	**Contents**	While publishing the books and magazines required a lot of pages and adding text to the content are the most frequent uses in the design. In this lesson, you will learn the following: ● How to format the page. ● How to add text frames and manipulate the texts ● How to make flow text around image frames ● How to add and remove pages with multiple columns
4	**Learning Outcomes**	After completing work for this class, you will be able to: ● Know how to format the page. ● Know how to work with Text Frames and manipulate the texts ● Describe how to make a flow text around image frames ● Understand how to make columns on the pages
5	**Main Questions**	● Please describe how to format the page. ● Please describe how to add a text frames and manipulate the texts ● Please describe how to make a flow text around image frames ● Please describe how to create multiple columns in the pages
6	**Reading List and Resources**	https://wiki.scribus.net/canvas/Help:Manual_Textframes https://wiki.scribus.net/canvas/Working_with_image_frames https://wiki.scribus.net/canvas/Help:Manual_Imageframes https://wiki.scribus.net/canvas/Working_with_text_frames https://wiki.scribus.net/canvas/Help:Manual_Frames https://wiki.scribus.net/canvas/Page_Layout_-_The_Basics https://wiki.scribus.net/canvas/Creating_a_threefold_brochure https://wiki.scribus.net/canvas/How_to_set_text_flow_around_photos https://youtu.be/JTo_NZeOPqA https://youtu.be/INVeoAx8J-g https://youtu.be/DXrabr1FYeg

Week 12: Content Publishing with Scribus: Using Templates, Numbering and Master Pages

1	**Date/time**	
2	**Venue**	

3	**Contents**	In this lesson, students will learn the following: ● Using templates ● Working on numbering pages and numbered items ● Working on Master Pages
4	**Learning Outcomes**	After completing work for this class, you will be able to: ● Understand how to use templates for their publishing ● Describe how to make numbering pages and numbered items ● Know what Master Pages in Scribus means
5	**Main Questions**	● Please explain the advantages of templates ● Please describe how to make numbering pages and numbered items ● Why do you need Master Pages in Scribus or other Desktop Publishing Software?
6	**Reading List and Resources**	https://wiki.scribus.net/canvas/Help:Manual_Pagenumbering https://wiki.scribus.net/canvas/Sequentially_Numbered_Items_-_Basic_Method https://wiki.scribus.net/canvas/Working_with_Master_Pages https://wiki.scribus.net/canvas/Help:Manual_Masterpages https://youtu.be/N0_3XnraPQI https://youtu.be/f-228vBWOSI https://youtu.be/tEiJlyuVndY

Week 13: Content Publishing with Scribus: Styles and Colour Management

1	**Date/time**	
2	**Venue**	
3	**Contents**	Using paragraph styles can save designers a lot of time in designing the content publishing. In today's lesson consists of: ● Using various styles in the pages including paragraph styles ● Working with colors and color management
4	**Learning Outcomes**	After completing work for this class, you will be able to: ● Know how to create paragraph styles ● Understand how to use styles in Scribus ● Understand color sets and how to use it
5	**Main Questions**	● Please explain what styles can you do in Scribus ● Please tell how to fill color ● What can you do with the color sets in Scribus
6	**Reading List and Resources**	https://wiki.scribus.net/canvas/Help:Manual_Styles https://wiki.scribus.net/canvas/Help:Manual_Linesstyles https://wiki.scribus.net/canvas/Howto_work_with_paragraph_styles https://wiki.scribus.net/canvas/Help:Manual_Fill https://wiki.scribus.net/canvas/Help:Manual_Colorsets https://wiki.scribus.net/canvas/Help:Manual_Editcolors https://wiki.scribus.net/canvas/Help:Manual_Managecolors https://wiki.scribus.net/canvas/Help:Manual_Cmsintro https://youtu.be/rkyX7rgeawg https://youtu.be/Eaemh2DOQZk

Week 14: Content Publishing with Scribus: Working with shapes and properties

1	Date/time	
2	Venue	
3	Contents	In this lesson, students will learn how to work with shapes and their properties, and some other related functions with shape such as shaped text frame and converting shape to image.
4	Learning Outcomes	After completing work for this class, you will be able to: ● Use shapes and understand its properties ● Understand how to use shaped text frame ● Demonstrate how to convert shape to image
5	Main Questions	● Please explain what you can do with shape in Scribus? ● Please tell how to use shaped text frame ● How do you convert shape to image?
6	Reading List and Resources	https://wiki.scribus.net/canvas/Help:Manual_Shapes https://wiki.scribus.net/canvas/Help:Manual_Editshapes https://wiki.scribus.net/canvas/Help:Manual_Multiduplicatetransform https://wiki.scribus.net/canvas/Bezier_Curve_Basics_-_Part_1_-_Simple_Geometric_Shapes https://wiki.scribus.net/canvas/Rounding_Complex_Shapes https://wiki.scribus.net/canvas/How_to_create_a_partially-rounded-off_shape https://youtu.be/j_VCrX3-v80 https://youtu.be/WDA1UALJag4 https://youtu.be/ALc5T1Ihqho

Week 15: Content Publishing with Scribus: Align and Distribute

1	Date/time	
2	Venue	
3	Contents	In this lesson, students will introduce to the following: ● How to align and distribute pages ● How to import images to Scribus ● How to export documents as PDF ● How to create brochure and business card
4	Learning Outcomes	After completing work for this class, you will be able to: ● Understand how to align and distribute pages ● Know how to import images to Scribus ● Know how to export documents as PDF ● Know how to create brochure and business card
5	Main Questions	● Please explain why you need to align and distribute the pages ● Please tell me what images you can import and you can't ● Please describe how to export documents as PDF ● Please describe how to create a sample information brochure and business card
6	Reading List and Resources	https://youtu.be/XqtLUB-esdU https://wiki.scribus.net/canvas/Help:Manual_Importing https://wiki.scribus.net/canvas/Help:Manual_PDFintro

		https://wiki.scribus.net/canvas/How_to_make_business_cards https://wiki.scribus.net/canvas/Creating_a_brochure https://wiki.scribus.net/canvas/Creating_a_threefold_brochure