

2023 Trend Report

# Higher Education & e-learning in ASEAN



KOREA EDUCATION AND RESEARCH  
INFORMATION SERVICE



Ministry of Education



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# Cambodia Cyber University Network (CCUN)

## #Cambodia Cyber University Network, ITC Training on e-Learning Content Development

Ms. CHOM Sreylam / ITC



Cambodia Cyber University Network (CCUN) is a project that focuses on improving higher education quality by using an online platform, digital teaching, and learning material, continuing education during COVID-19, and also sharing the resource, and infrastructure among Higher Education Institutes (HEIs) include 6 universities that Institute of Technology of Cambodia is the technical support of CCUN project. ITC teams held a training about basic training on e-learning content development that was conducted for 3 days on the flow of developed e-learning content divide into 4 mains roles as Instructional Designer (ID), Content Developer (CD), or Graphic Designer (GD), Studio Engineer (SE) and Subject Matter Expert (SME).

**01**

### Training on e-Learning Content Development under the project Cambodia Cyber University Network (CCUN), Institute of Technology of Cambodia

Institute of Technology of Cambodia (ITC) organized the training on e-Learning content development under the project Cambodia Cyber University Network (CCUN), the 5 HEIs were invited to join the training namely: Royal University of Phnom Penh, Royal University of Agriculture, National University of Battambang, Svay Rieng University and University of Heng Samrin Thbongkhmum.



Figure 1. The training on e-Learning content development

The topic of training is the basic training on e-learning content development that focuses on how to create e-learning with the stage and structure of development of e-learning content. The main purpose of the training is about to allow the trainee to be able to create and develop the e-learning and after this training, each university get the e-learning content file that can upload it for students to learn online as interactive content. In the training session, we separated teams into 3 sessions in parallel time, and it's about ID working with SMEs in order to create a Storyboard by following the structure of e-learning content.

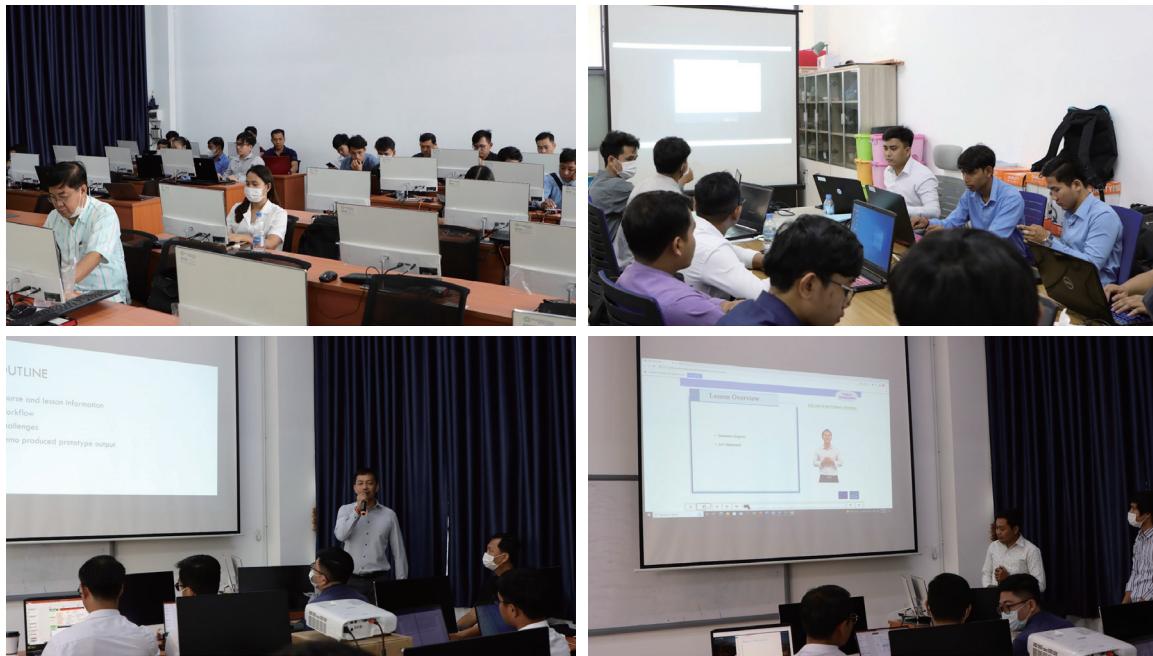


Figure 2. Training sessions

The topic of training is the basic training on e-learning content development that focuses on how to create e-learning with the stage and structure of development of e-learning content. The main purpose of the training is about to allow the trainee to be able to create and develop the e-learning and after this training, each university get the e-learning content file that can upload it for students to learn online as interactive content. In the training session, we separated teams into 3 sessions in parallel time, and it's about ID working with SMEs in order to create a Storyboard by following the structure of e-learning content.

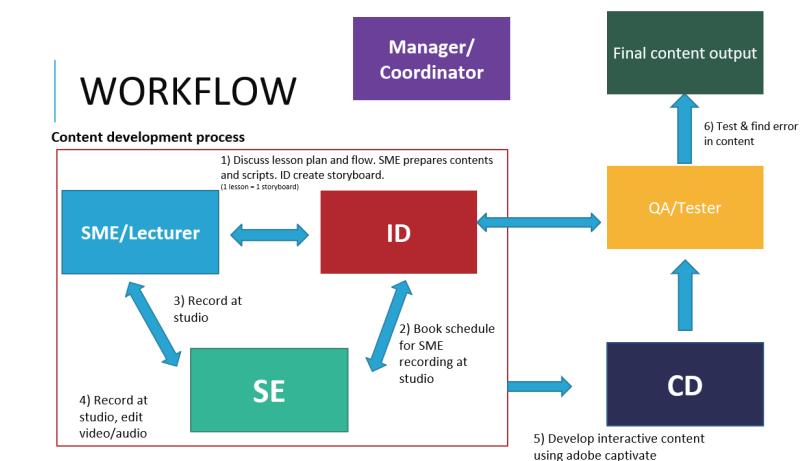


Figure 3. The Workflow of creating e-learning content

Prior to the training, universities of HEIs were invited. The invitation was sent to each university through the network and they need to manage the lectures or staff related to the CCUN project to attempt the training. Below, is the figure of statistical data that we surveyed during the training.



Figure 4-1 Example of survey output

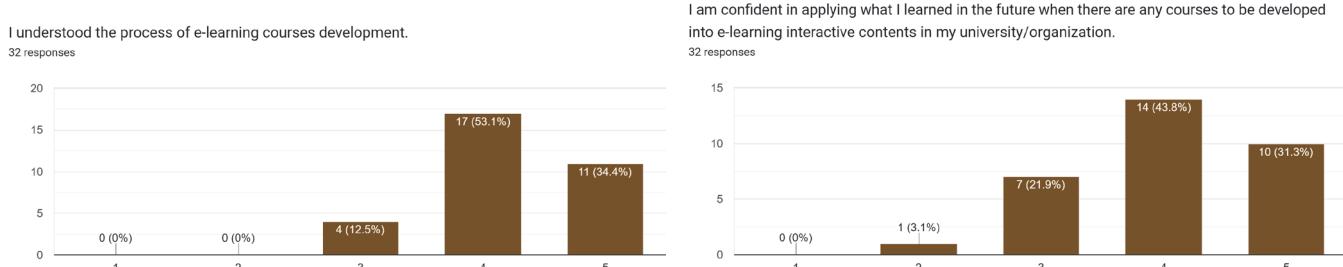


Figure 4-2 Example of survey output

## Implications

Basic Training on e-learning content development supported by Higher Education Institute in Cambodia, the output of this training is to allow the trainee to know about the basic stage and structure of creating e-learning content development and understand about the role for creating content. After practicing during the training trainee also can use tools as such Bloom Taxonomy for ID and SME, Adobe Captivate for CD and Adobe Audition, Adobe Premiere for SE. As the results of the training, for each university had created a sample course with the interactive content. Anyway, CCUN project will continue to support the university members to successfully improve their e-learning content.

## References

Special notes  
<https://www.facebook.com/itcelearningcenter?mibextid=LQQJ4d>

# Techno Innovation Challenge Cambodia 2022

## # Innovation, Challenging, ITC

Ms. CHOM Sreylam / ITC



Techno Innovation Challenge Cambodia is a competition program which students from different skills team up, design, build and pitch their innovative STEM-based solutions for solving a real-world problem within 4 weeks duration, organized by Institute of Technology of Cambodia. Teams need to prove and test their ideas and prototypes through a customer interview and some business research to compete with other teams on Semi Final to advance to the final round. The first winning team will receive USD 2,000 in cash prize, the second winning team will receive USD 1,500 as prize, for the third winning team will receive USD 1,000 and for other three teams will receive USD 500 for runner up award.

# 01

## Techno Innovation Challenge Cambodia 2022

Institute of Technology of Cambodia (ITC) is a Cambodian Higher Education Institution providing engineering fields, which was founded in 1964 and supported by cooperation between Cambodia. More than 10,000 executive members have graduated from ITC.

ITC has a clear long objective and mission. The fourth objective of ITC is to train engineers in innovation and entrepreneurship, in order to create highly skilled jobs and answers to future challenges. ITC was selected as the only one to pilot the MS2W Institutional Innovation Challenge, which was named "Techno Innovation Challenge Cambodia" in Cambodia during the first quarter of FY2019 by the USAID Connecting the Mekong through the Education and Training (USAID COMET) Project to be organized in 2017, at Institute of Technology of Cambodia, Phnom Penh, Cambodia. The program is based on Texas A&M University (TAMU)'s Innovation Challenge, called Aggies Invent. The competition program is based on and supported by TEXAS A&M University College of Engineering where students focus on designing, building, and then selling a solution to a real-world problem that has been provided by an industry or Agency partner. It is found to be the spark that gets students excited, and inspired, and provides the energy to continue developing their solution in subsequent efforts.

The challenge event will be a four-weekend duration that is mostly performed over a weekend for university students to team up, design, build and pitch their innovative solutions under one of the themes: Internet of Things or e-Commerce (ICT), Education or Health, and Agriculture or Energy. It has a transformational effect on students by:

- Providing them necessary technology, materials, mentorship and training to support their innovation.
- Working in teams where they have to share ideas, brainstorm, and deliver the steps toward a solution in deadlines staged throughout the experience
- Meeting deadlines requiring teams to make decisions about their solution, determine a path toward implementation, and build the solution according to a schedule
- Developing and practicing effective communication skills as they “sell” their solution to a panel of judges as they compete for placement in the competition. Competition provides the focus and is like a pitch they will need to compete for funding for their project in the industry or as a startup.
- Providing them with a situation that is as much like their first job in a high-performance team as possible in a short period in a university setting
- TICC is to push students’ Innovation to the next level by providing them an opportunity to perform design and acquire skills essential to becoming successful innovation leaders and thus realizing that they can develop complete solutions.
- After the challenge, student teams especially engineering students have minimum viable products (prototypes) that are working, useful, and validated from customer and business perspectives.

Our program is supported by the Ministry of Education, Youth, and Sports, the Ministry of Economy and Finance. It is funded by the Francophone University Agency, and co-funded Khmer Enterprise, Smart Axiata, the Erasmus+ Program of the European Union and FoodSTEM. Other partners include EZECOM, TEXAS A&M University College of Engineering, Lower Mekong Initiative, ASEAN, Emerald HUB, and FORICA as below.

**Organized by**



**Supported by**



**Funded by**



**Co-funded by**



Co-funded by the  
Erasmus+ Programme  
of the European Union



**Partners**



MUSEUM OF  
MODERN  
TECHNOLOGY

Figure 1. Organizations and partner institutions for Techno Innovation Challenge

During the COVID-19 pandemic, schools and universities are closed and participation that required program take place online. The program has 4-weekend, for the first week: team up, study about the business model, connect mentors with a team, and find a topic and solution. In the second week: modify the prototype, and learn how to make a video, presentation and pitch. The third week: Semi-final presentation, get feedback and update the prototype. And for the last final week: final presentation (Video 5 mins and Q&A 5mins). The workshop agenda is attached below:

Table 1. Workshop agenda

Date	Time	Activities	Venue
Saturday, Jan 15	8:00 – 12:00	- Introduction - Team Formation - Mentor connection - Training on Business Concept	Online (Zoom)
Sunday, Jan 16	-	- Team Brainstorm - Build something Fast! – Physical Representation - Mentor Interaction	Work as individual team
Sunday, Jan 23	8:00 – 12:00	- Training on a good Pitch and Customer Interview - Teamwork: Review and Preparation	Online (Zoom)
Sunday, Jan 30	8:00 – 15:00	- Semi-final presentation - Announce top teams to Final Pitch	Online (Zoom) & Facebook Live
Sunday, Feb 13	8:00 – 15:00	Final Pitch and Awarding	Online (Zoom) & Facebook Live

Week 1 and 2 hold on (January 15th, 16th, 23th, 2022, by online), The first weekend was an Intensive Design Experience. The shortlisted applicants teamed up with 3 to 7 members. The team started to design the solutions for solving a real-world problem and build the prototype as realistic as possible. then connecting Mentors with groups. and on the second weekend, different workshops and mentoring were provided to the teams. one more thing, Teams went out to do customer interviews or do the online survey about their project.

Week 3 is the Semifinal round that took place on (January 30th, 2022, online). The 29 semi-finalist teams pitched on the Semi-final round. The top 15 teams advanced to the final round competition next week. Each team was given 5 minutes to pitch, show a video clip and demonstrate their prototypes, followed by a 5-minute Q&A session, where judges could ask questions to clarify and inquire about details.

No	Teams	No	Teams
1	Air Cooler	9	Fruit-Tech
2	Artificial Beef	10	InsightChop
3	Biogas	11	Lime Material
4	Demut-Voice	12	Kela
5	De Riz	13	સુપરા-Shell
6	Eco-saver	14	WeGan
7	Escott	15	Whiters
8	Étoile Cinq		

**Welcome to the Final-Pitch**

Figure 2. Team's list that passed the semi-final

The last weekend is the final round was on (February 13th, 2022, by online) The 15 finalist teams pitched on the final round competition to compete for cash awards. Each team was given 8 minutes to pitch, show video clip and demonstrate their prototypes, followed by a 7-minute Q&A session, where judges could ask questions to clarify and inquire about details.

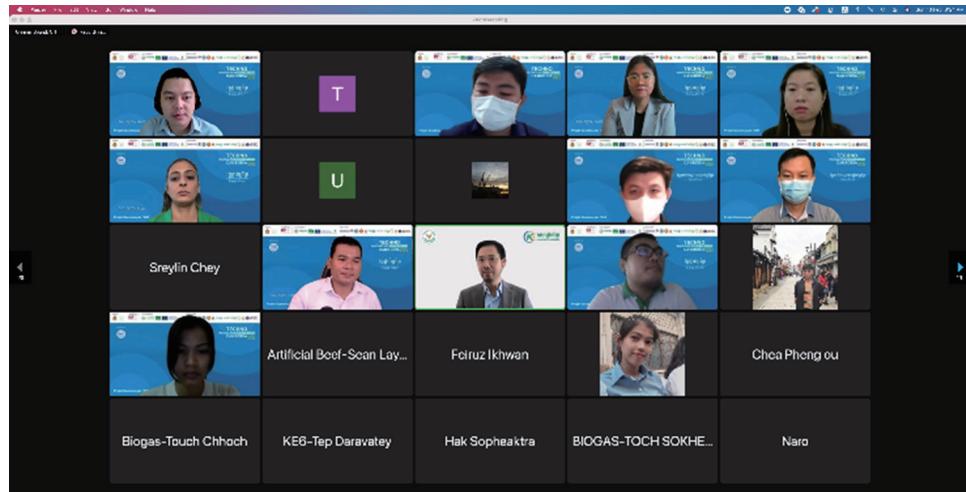


Figure 3. Final show

The 1st Winning team received USD 2,000, the 2nd Winning team received USD 1,500, and the 3rd Winning team received USD 1,000. And other 3 teams will receive 500\$ for runner up award the 1st Winning team is InsightChop, the 2nd Winning team is Eco-Saver, and the 3rd Winning team is Lime Material. And other 3 teams' runner up award are Biogas, Fruit-Tech and WeGan. The winning teams as below.



Figure 4. The winning teams

Some of the key results from the program 2022 on the participants were:

- 98.9% of participants agreed, strongly agreed, or somewhat agreed that they could improve their technical skills and entrepreneurship.
- 95.9% of participants somewhat agreed, agreed, or strongly agreed that they could understand the complete design experience.
- 100% of participants somewhat agreed, agreed, or strongly agreed that they could increase my soft skills: creativity, Presentation skill, Problem-solving, teamwork, and/or self-confidence.
- More than 80% of participants will continue their work to startup.
- 99% of participants were satisfied or very satisfied with the program.

The program was very challenging on time, resources and labs. However, the teams demonstrated their great work, but more importantly their creativity, enthusiasm, and commitment. The 3 Winning teams were found and the awards were given. The top six teams were selected and given the co-working and incubator space at ITC to continue their project.

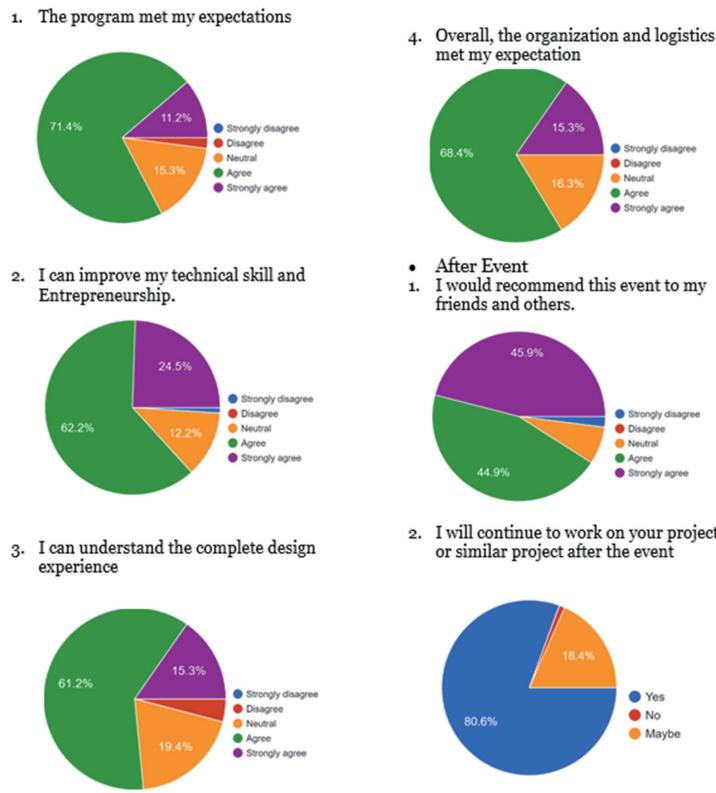


Figure 5. Overall Evaluation of the Program

There was some difficulties conducting the Techno Innovation Challenge such as distance communication, low internet connection of Candidates, Prototype manufacturing and other technical problems. Therefore to make better innovation challenges, those problems have to be solved.

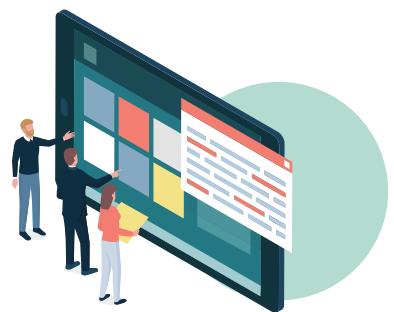
## References

Techno Innovation Challenge Cambodia's Facebook page,  
[https://www.facebook.com/innovationchallengecambodia/?ref=page\\_internal](https://www.facebook.com/innovationchallengecambodia/?ref=page_internal)

# Techno Pre-Incubation Challenge Cambodia 2022

## # Pre-Incubation, Challenging, ITC

Ms. CHOM Sreylam / ITC

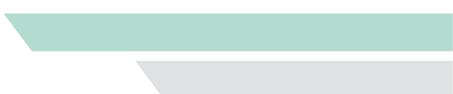


After the final pitch of Techno Innovation Challenge Cambodia, the top 8 teams are selected for the next step of the program, called the Techno Pre-Incubation Program, or 10 weeks of training. The top 8 teams were also awarded the co-working space (ETI) at ITC and a 10-week training or incubation program for developing their business ideas and delivering their products into real-world projects. After the pre-incubation program, the 8 teams participated in the final pitch again on 28th May 2022 to get some funding to support their projects by representing the detailed information, business models, and demonstration of the prototypes of their project to the expert juries.

**01**

## Techno Pre-Incubation Challenge Cambodia 2022

The Institute of Technology of Cambodia (ITC) is a Cambodian Higher Education Institution providing engineering fields, which was founded in 1964 and supported by cooperation between Cambodia. More than 10000 executive members have graduated from ITC, which has a clear long objective and mission. The fourth objective of ITC is to train engineers in innovation and entrepreneurship in order to create highly skilled jobs and answers to future challenges. With the partner in the CNEUF project, ITC launched a new season of TICC2022, and there are over 30 teams and 9 individuals registered to join the competition. Among 29 teams who reached the semi-final, the program has selected 15 teams to continue to the final pitching program. The best eight teams are chosen for the next step of the program, "Techno Pre-Incubation Program or 10-week training program". For 10-week training program focuses on 10 Business modules for the teams to build the business of their project in order to deliver their product to the real world. In 10 weeks, the program invited our experienced trainers, based on their business skills, to provide the training and share to team about the business ideas that fit with the teams' projects. The training session took progress online using Zoom meetings due to the COVID-19 pandemic.



The program invited expert trainers from different sectors in the business world to train the selected teams of TICC2022 about 10 business modules such as:

- Entrepreneur Mindset, BoomCamp Overview and Business Models
- Customer Development
- Product – Market Fit
- Market Channels and Positioning
- Core Competencies
- Team Strategy
- Review of Business Models
- Financial Strategy
- Pipeline Management
- Art of Pitch Training

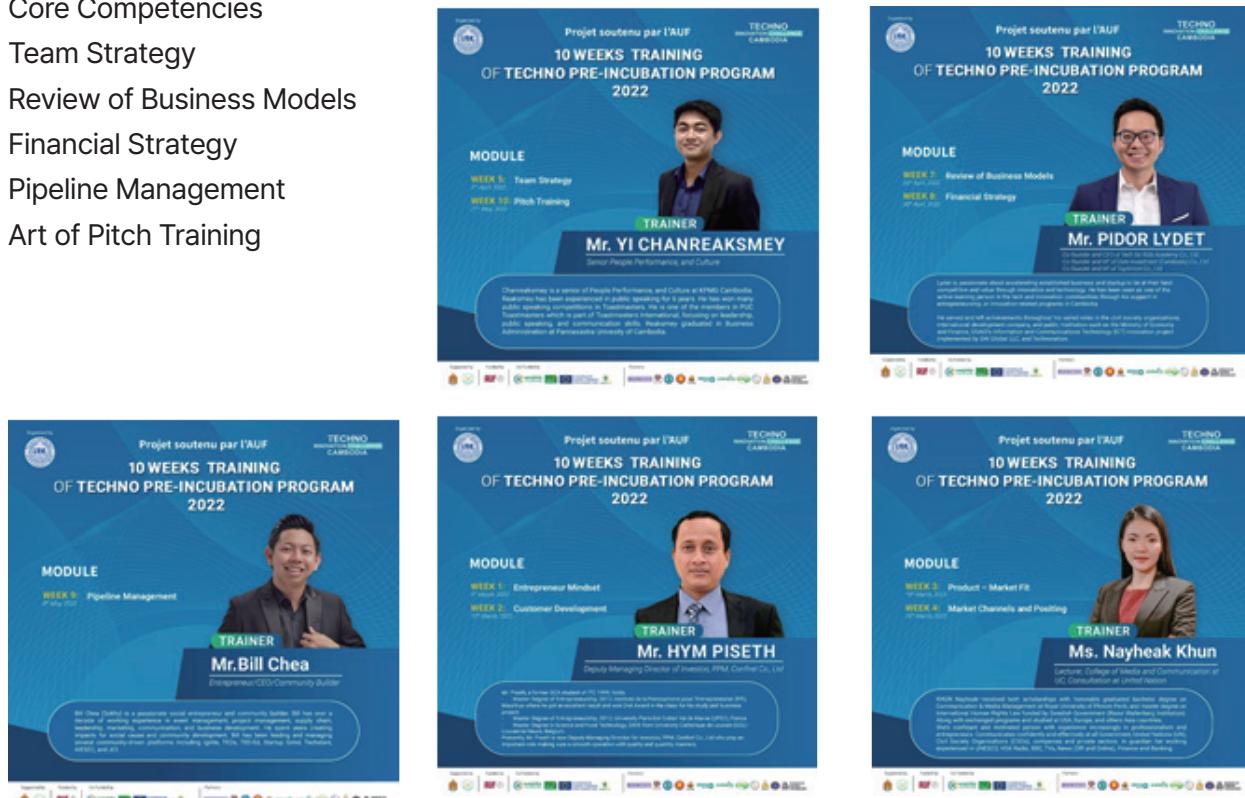


Figure 1. Expert Trainer

During the training sessions took place online that were managed by Microsoft Team. The meeting started every Saturday morning, and it took about 2 to 3 hours. Also, there were 25 candidates representing the eight teams for the programs.

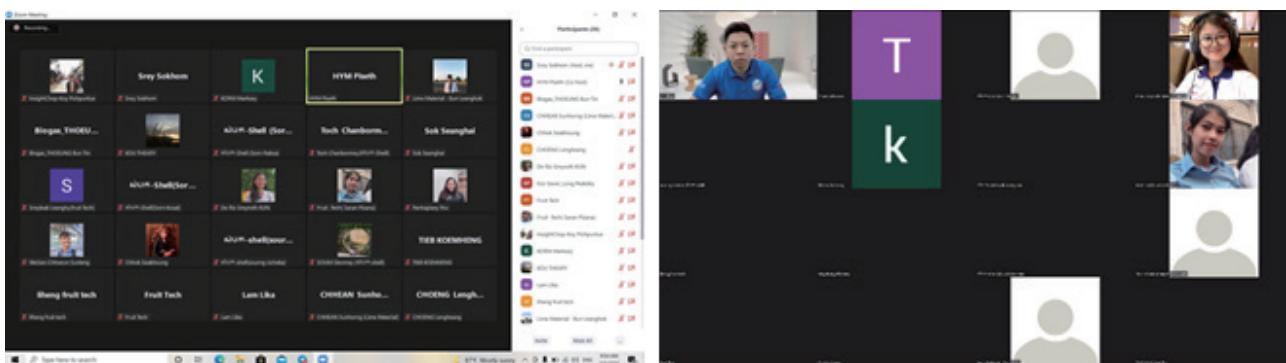


Figure 2. Some Activities

The final pitching took place on 28th May 2022, after finishing 10 modules of Business models. The purpose of this final pitch is to select the best 3 teams of all among 8 teams that joined and trained so well for 10 weeks that made good progress in their startup to reach their business goal to get 3400\$ funded. Here is the agenda of the final pitch day

Saturday, May 28th, 2022 Final Pitching		
08:00 - 08:30	Arrival of participants (Online)	Coordinator
08:30 - 08:35	Welcome Speech, Launch the final pitching program	Coordinator
08:35 - 08:40	Welcome Speech from Smart Axiata	Mr. Sajid SALIM, Digital Transformation Project Manager, Smart Axiata
08:40 - 08:45	Welcome Speech from KE	Mr. Sunsatya Chea, Entrepreneurship Development Manager of Khmer Enterprise
08:45 - 08:50	Welcome and Opening Speech from ITC	Dr. Chunhieng Thavarith, Advisor of ministry MoEYS to Institute of Technology of Cambodia
08:50 - 09:00	Welcoming to the Judging Committee	Coordinator
09:00 - 10:00	Video of each team pitching and Q&A	Judging Committee (3 groups) 10 min Presentation and 10 min Q&A
10:00 - 10:15	15 min Break	
10:15 - 11:15	Video of each team pitching and Q&A	Judging Committee (3 groups) 10 min Presentation and 10 min Q&A
11:15 - 11:25	Jury discussion	
11:25 - 11:30	Announce the final result,	
11:30 - 11:40	Acknowledgments to participants for providing information for the next activity and closing program	Mr. LAY Heng, Project Leader and Vice Dean, Faculty of Electrical and Energy Engineering
End of program		

The program will invite judges experienced in various fields of the business world to select the top three teams. Here is our judge's panel



Figure 3. Judges Panel

## Winner Teams

After 10 weeks of training in the Techno Pre-Incubation Program 2022, the 8 teams were selected to compete with each other in the Final Pitch Techno Pre-Incubation Program 2022 in order to find out the top 3 teams. In addition, the three teams with the highest scores from the judges were selected, which are as follows:

Eco Saver: producing food containers out of rice straw fiber which is 100% biodegradable. Rice straw will be buried in open soil at a size of 5x20 cm and a depth of about 5cm within 6 months.

Insightchop: providing used chopsticks a second life by transforming and elevating used chopsticks into new materials and valuable products.

Lime Material: Made of a lightweight hollow wall panel with C&D waste aggregate, plastic pellets, and glass fine in replacement of up to 50% of natural aggregate. The product aims to provide better quality, cost, and time-saving for our customers.

### ► Team winner



Team InsightChop



Team Lime Material



Team Eco-Saver

### ► Team prototype



**InsightChop**  
: new materials transform from  
chopsticks



**Lime Material**  
: Wall Panel



**Eco-Saver**  
: food containers out of rice straw

## Implications

**Difficulty:** It cannot be applied to all activities and has some technical problems due to telecommunication, low internet usage of applicants, prototyping (slide closed), etc.

## References

### Special notes [Special notes]

Techno Innovation Challenge Cambodia's Facebook page, [https://www.facebook.com/innovationchallengecambodia/?ref=page\\_internal](https://www.facebook.com/innovationchallengecambodia/?ref=page_internal)



Dr. Chunhieng Thavarith



Mr. Sunsatya Chea



Mr LAY Heng

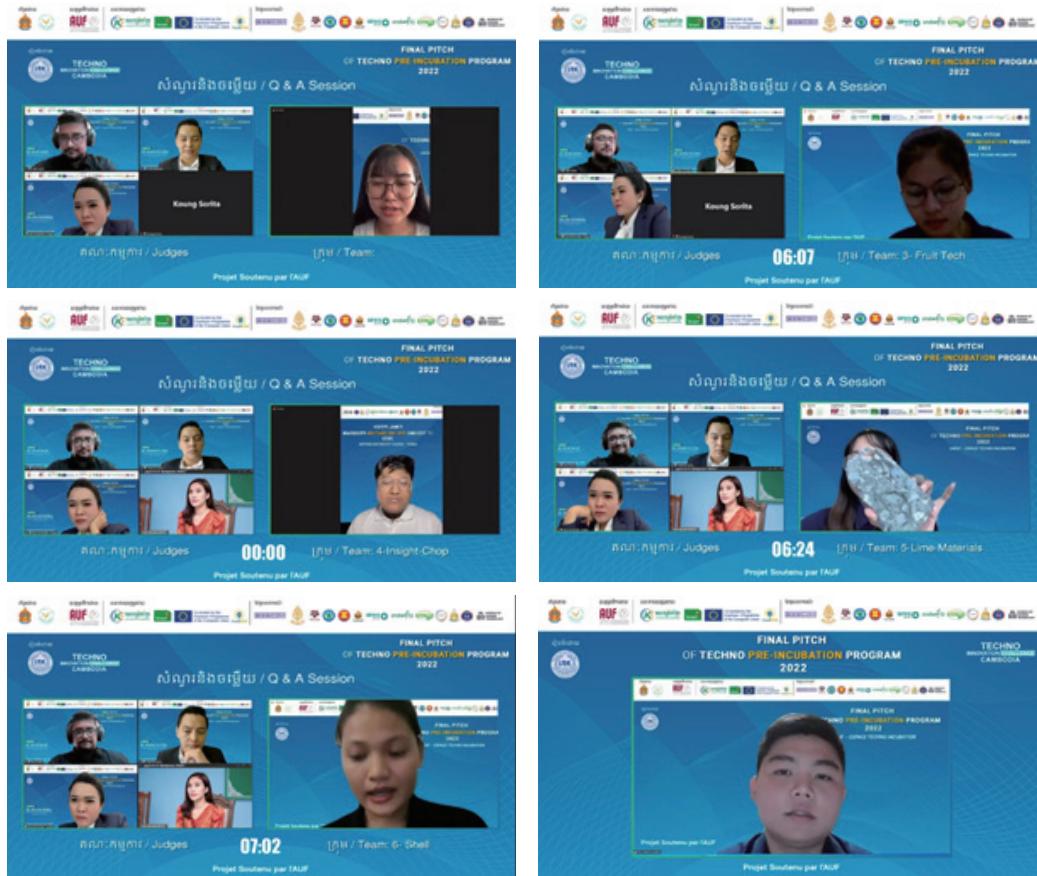


Mr. Sajid SALIM



Judges Panel

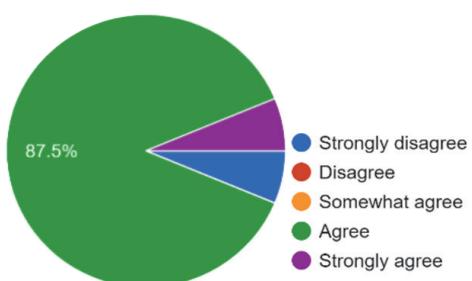
The Techno Pre-Incubation Program, implied by the objective of the center, aims to



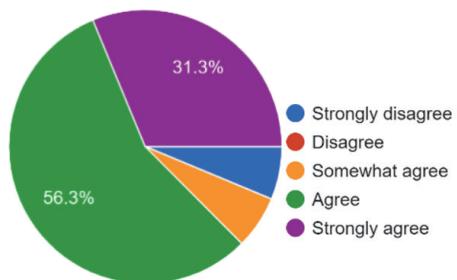
Teams Panel

Promote entrepreneurship culture and practice among students by commercializing innovative ideas. The program is open to the public and students in all universities in Cambodia (both public and private). For this year, the program selected 8 groups from Techno Innovation Challenge Cambodia 2022 to train about the business modules. Here is some feedback from contestants (17/32 contestants)

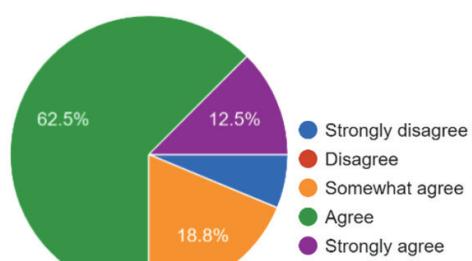
### 1. Needs Analysis



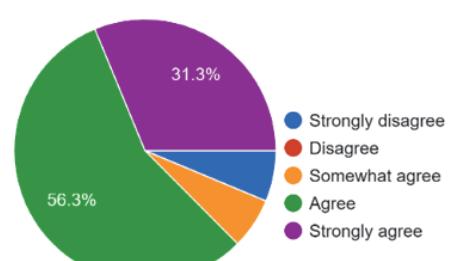
### 2. I can improve my Technical skill and Entrepreneurship



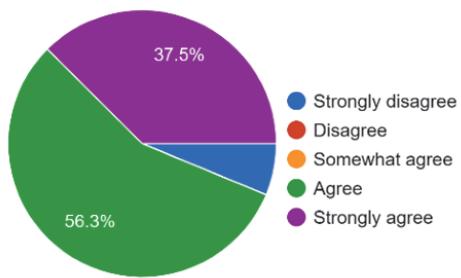
### 3. I can understand the complete design experience



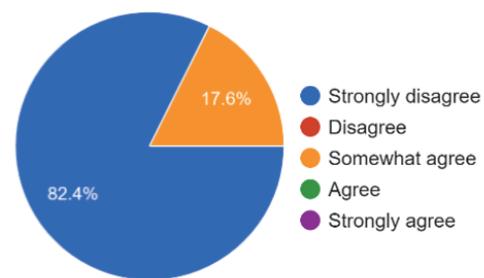
### 4. I can increase my soft skills: creativity, Presentation skill, Problem-solving, teamwork and/or Self-confidence.



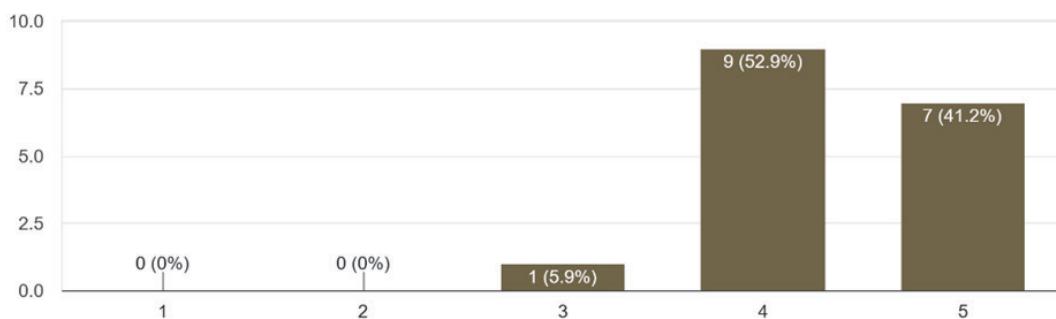
**5. I would recommend this event to my friends and others.**



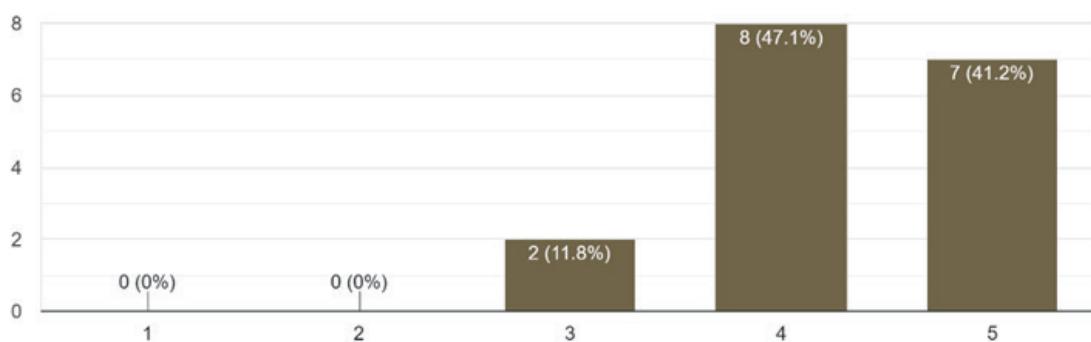
**6. I will continue work on your project or similar project after the event**



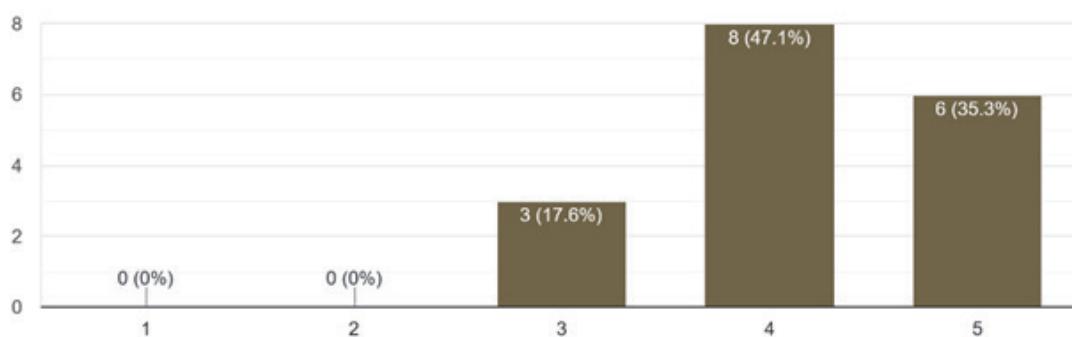
**7. How satisfied were you are with the program**



**8. How relevant and helpful do you think it was for your future career?**



**9. How satisfied were you with the session content**



# GIC Summer Online Training 2022

## # GIC Summer Training 2022

Ms. CHOM Sreylam / ITC



The summer training program is conducted for about 4 weeks, and it starts on 18th August 2022 on two main courses, such as basic Programming C/C++ and Basic Web Development by our Department of Information and Communication Engineering (DICE or GIC in French) at the Institute of Technology of Cambodia (ITC). The program aims to share knowledge from seniors to juniors and improve communication between students in the same department. The training is conducted online using Microsoft Team. Most participants are from the new I3 GIC year 1, year 2 at ITC and everyone who is interested in the above-mentioned courses. It is free of charge.

**01**

## Summer training at Department of Information and Communication Engineering, Institute of Technology of Cambodia 2022

Department of Information and Communication Engineering at the Institute of Technology of Cambodia, our programs are built based on a very solid curriculum that covers fundamental theories in computer science and information technologies. Upon completion of the programs, students will be able to gain technical expertise consisting of critical thinking and problem-solving skills involving analysis, design, implementation, and evaluation of computer-based systems. The programs also give an introduction to research in advanced domains, such as image processing, natural language processing, artificial intelligence, machine learning, and distributed systems. In addition to the technical competency, our programs are enhanced with soft skill development through teamwork tasks in class and obligatory internships to a real working environment for the readiness of the students for their professional lives. Also, GIC organizes a summer training program for two main courses: basic Programming C/C++ and basic web development. By practicing the knowledge-sharing culture in our department from year to year, we have volunteered trainers who have just finished their year 3 and will start their year 4 program in the next academic. For the summer program this year, we got around 10 volunteers to train in the above-mentioned two courses to our juniors. The training is conducted online on a Microsoft team. The training schedule is attached below.



Time/Day	Monday	Tuesday	Wednesday	Thursday	Friday
<b>8:00-9:30am</b>	Basic Programming C/C++ -Theory: 40mn -Practice: 50mn	Basic Programming C/C++ -Theory: 40mn -Practice: 50mn		Basic Programming C/C++ -Theory: 40mn -Practice: 50mn	Basic Programming C/C++ -Theory: 40mn -Practice: 50mn
<b>10:00-11:30am</b>	Basic Web Development Theory: 40mn -Practice: 50mn	Basic Web Development Theory: 40mn -Practice: 50mn		Basic Web Development Theory: 40mn -Practice: 50mn	Basic Web Development Theory: 40mn -Practice: 50mn
<b>1:00-2:00pm</b>	Student practise, review and do homework (self study)	Student practise, review and do homework (self study)		Student practise, review and do homework (self study)	Student practise, review and do homework (self study)
<b>2:00-5:00pm</b>					

**Remark:** Training will start from 18th August - 8th September 2022

Figure 1. Summer training schedule:

This program runs for 3 hours a day, 4 days a week, for approximately 4 weeks, and began on August 18, 2022. In addition, for two main courses, such as basic Programming C/C++ and basic web development. The first course, basic Programming C/C++, C++ is an object-oriented programming (OOP) language that is viewed by many as the best language for creating large-scale applications. C++ is a superset of the C language. A related programming language, Java, is based on C++ but optimized for distributing program objects in a network such as the Internet. Also, we have two main points about theory and practice: Learning how to solve problems step-by-step and Coding with C/C++. The Second course, Basic Web Development, also has theories and practices such as learning basic web programming (HTML, CSS, JS, Bootstrap...) and practicing and solving real problems. The training poster is attached below.



Figure 2. Poster for the summer training program 2022

Figure 2 shows the poster of the program. Before the training program, the information is publicly shared with our students on our website (<https://gic.itc.edu.kh/events/150>) and our official Facebook page(<https://www.facebook.com/dept.dice.itc>). There are six volunteered senior students. They will be in year 4 in the upcoming academic year program.

In conclusion, all classes are operated online in the context of the pandemic. This year's summer training program, organized by the Department of Information and Communication and Engineering of the Institute of Technology of Cambodia, was conducted online using Microsoft Teams. Six senior students volunteered and provided two training courses, such as two main courses, basic Programming C/C++ and basic web development. We have seen the culture of knowledge sharing in our department is fruitfully distributed. Seniors and juniors now know each other well, especially experience sharing from seniors is necessary and valuable for their future development.

## References

GIC Website, Summer training program 2022, <https://gic.itc.edu.kh/events/152>

### 01 Introduction CSS

#### Content

- What is CSS?
- Ways to include CSS
- CSS syntax
- CSS selector
- CSS color
- CSS background
- CSS Specificity

Prepare by: KHY MENGHUOT

### What is HTML, CSS and JS ?

- **HTML (Hyper Text Markup Language)** : is the standard markup language for create web pages.and describes the structure of a Web page, consists of a series of elements.
- **CSS (Cascading Style Sheets)** : is the language we use to style a Web page or is a language of style rules that we use to apply styling to our HTML elements, for example setting background colors and fonts, and laying out our content in multiple columns.
- **JS (Java Script)** : it is a high level language that can allow us use to make web page interactive and add behavior to web page.

Prepare by: KHY MENGHUOT



## 2023 Trend Report of Higher Education & e-Learning in ASEAN