



FACULTY DEVELOPMENT PROGRAMME FOR UNIVERSITY TEACHING

Start Date: 10th September 2021





CERTIFICATE TO BE OFFERED:

Post-Graduate Certificate (PgCe) in Learning & Teaching

In collaboration with UK, USA, Australian, Canadian, Chinese, and Malaysian Universities

***Special offer (or scholarship) for the Cambodian academic staff or potential future academics*

Background

The Cambodia University of Technology and Science (CamTech) offers a collaborative teacher training programme with high-profile academics and professionals from the UK, USA, Australian, Canadian, Chinese, and Malaysian universities. For excellence in university teaching, CamTech offers this comprehensive professional development programme for current academics and potential future lecturers (candidates must have at least an undergraduate degree) of global universities through the application of best practices. Below are the learning outcomes and the structure of the proposed faculty development programme.

Learning outcomes

By the end of the development programme, participants are expected to:

- Demonstrate the ability for effective communication to wider audiences, including quality slide presentations and directed learning.
- Demonstrate ability in class management, engagement, time management, and team skill development.
- Demonstrate knowledge of institutional philosophy, core values, culture, and background.
- Develop an understanding of various teaching and assessment methods at university.
- Demonstrate knowledge of various learning, motivation, and engagement theories in educational psychology.
- Demonstrate ability to teach hard and soft skills with a focus on research-informed teaching that corresponds to the industry, business and community needs.
- Demonstrate knowledge of curriculum development at university.
- Complete and present an assignment (Part-I) and a project (Part-II) on teaching and learning at university.
- Use technologies (includes digital, AR, VR and game technology) for teaching and lab sessions.
- Demonstrate knowledge of writing research proposals and research articles for quality publications.
- Demonstrate ability to create a positive, supportive and inclusive learning environment.

Learning activities



The teaching methods based on the principles of andragogy will be employed in this faculty development programme. There are eight principles of andragogy, which include active learning, problem-centric, previous experience, relevance, emotional connection, self-learning, alignment, and fun. Sessions in this faculty development programme will focus on lectures and activities based on problem- and project-based learning. Participants will be put in groups to discuss best practices and find solutions to the problems and projects related to teaching at university. All the lectures will be delivered in an interactive seminar fashion to ensure the engagement of all the participants. Some of the key activities for this faculty development programme are as follows.

- Teaching demo/Lecture demo/Lab demo.
- Presentation, individual project, group project and marking strategy for teamwork.
- Lectures/Seminars/Interactive workshops.
- Group discussion on critiques and reflection on adult learning theories with educational psychology.
- Problem-based and inquiry-based learning: Problems provided and lecturers working together to find solutions.

1. SEPTEMBER – OCTOBER 2021 (PART – I) (FEE: \$350)

Outline of the Sessions for September 2021(Half-day long), all of which will be conducted at CamTech University

Date & Time	Contents/Areas	Facilitators/Speaker
10 Sept. 9:00 - 9:10	Welcome & Introduction to the Programme Why this programme is important	Prof Alamgir Hossain
9:10 - 9:50	Humboldtian Model of Higher Education	Prof Dr Chhem Rethy
9:50 – 10:30	Priorities of the Professoriate	Dr Sothy Khieng
Tea Break	Break & Refreshment	Interns
10:30 – 11:00 Interactive Session	Questions/Answers of the previous speakers. Directed Study, Educational Psychology Articles & Assessment Methods. Know each other to work as a team.	Prof Alamgir Hossain & Mr Sathya Chea
12:00-13:00	Lunch and networking for future collaboration – teaching, research/innovation, teamwork, etc.	HR & Interns

Date & Time	Contents/Areas	Facilitators/Speaker
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17 Sept. 9:00 - 9:20	Situation Analysis (audience, resources, capacity, support, content, visibility, slide development strategy, etc.).	Dr Vatana Chea & Prof Alamgir Hossain &
9:20 – 10:30	Teamwork for Situation Analysis – team will be organised based on different interest.	
Tea Break	Break & Refreshment	Interns
10:30 – 11:00 Interactive Session	Outcomes of the Teamwork – each team needs to deliver a slide presentation (5 min). Other teams will evaluate and mark – best team will be awarded.	Mr Sathya Chea & Prof Alamgir Hossain
12:00-13:00	Lunch and networking for future collaboration – teaching, research/innovation, teamwork, etc.	Admin/Interns

Date & Time	Contents/Areas	Facilitator/Speaker
18 Sept. 9:00 - 9:20	Presentations, digital technology enhanced learning, teamwork, communication skills & best practices.	Mr Siritwat Chhem & Prof Alamgir Hossain
9:20 – 10:30	Teamwork to develop attractive presentation slides with design, art & animation	
Tea Break	Refreshment to be served	Interns
10:30 – 11:00 Interactive Session	Outcomes of the Teamwork – each team needs to deliver slide presentation (5 min). Other teams will evaluate and mark – best team will be awarded.	Mr Siritwat Chhem & Prof Alamgir Hossain
12:00-13:00	Lunch and networking for future collaboration – teaching, research/innovation, teamwork, etc.	HR/Interns

Date & Time	Contents/Areas	Facilitators/Speaker
01 Oct. 9:00 - 9:20	Positive, supportive & inclusive learning. Engagement (classroom, students' teamwork, technology driven learning), research informed teaching & directed learning.	Prof Alamgir Hossain
9:20 – 10:30	Teamwork to share best practices.	
Tea Break	Refreshment to be served	Interns
10:30 – 11:00 Interactive Session	Outcomes of the Teamwork – each team needs to deliver slide presentation. Other teams will evaluate and mark – best team will be awarded.	Prof Alamgir Hossain
12:00-13:00	Lunch and networking for future collaboration – teaching, research/innovation, teamwork, etc.	HR/Interns

Date & Time	Contents/Areas	Facilitators/Speaker
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02 Oct. 9:00 - 10:30	An Interactive Session on material preparation, student feedback, delivery observation, and review at the end of the semester. Module description, learning outcomes, assessment methods, marking schemes, etc.	Mr Pharino Chum & Prof Alamgir Hossain
Tea Break	Refreshment to be served	Interns
10:30 – 11:00 Individual Presentation	Individual Presentations on the Educational Psychology article (1 paper per person)	Prof Dr Chhem Rethy (lead evaluator) & Dr Sothy Khieng
12:00-13:00	Lunch and networking for future collaboration – teaching, funding, team building, etc.	HR/Interns

2. SEPTEMBER – OCTOBER 2021 (PART – I) (FEE: \$200)

Tentative Schedule

Each session will be conducted online and last two hours. Dates will be adjusted with the speakers/trainees.

Date & Time	Contents/Areas	Facilitators/Speaker
1 st October	Learning how to teach and learning how to learn	Prof Dr Chhem Rethy; Mr Siriwat Chhem
9 th October	Importance/Impact of innovation and knowledge Transfer Programme with industries/business	Prof Alamgir Hossain, CamTech
*20 th October (8:00AM Ontario = 7PM PP time)	Andragogy – adult learning principles and practices	Prof Kathy Hibbert
1 st Nov	Blended Learning & Online Student Engagement	Dr M Sarkar (Teesside University, UK)
8 th Nov	Teaching for STEAM Education with a focus on Industry 4.0	Prof Henry Wang (XJTLU, China)
15 th Nov	Research Ethics, supervision & publications	Prof Ruhul Sarkar (UNSW, Australia)
28 th Nov	Teaching Observation/feedback (lecturers' choice)	To be assigned
8 th Dec	Data privacy, protection, analysis for teaching research and innovation	Dr A Al-Mamun (Arizona University, USA)
10 th Dec	Tools and technologies for teaching and learning	To be assigned
15 th Dec	Quadruple helix model of University-Industry Engagement	Prof Shahir Liew, Malaysia



17 th Dec	Entrepreneurship & Innovation Internship and Mentorship	Mr Kang Leng, ISI Group; Mr. Leo Fernandez; Dr. Chea Vatana
22 nd Dec	Writing for Publication	Prof Heidi Dahles, University of Tasmania and Griffith University

Assessment and Evaluation

(Pass/Fail; unsuccessful staff can resubmit until pass)

- Classroom delivery observation and feedback (Date will be arranged with the candidate); Outcome: Pass/Fail.
- One Assignment based on the learning outcomes of the Part-I of the programme and self-reflection (Maximum 5 pages, 5000 words, font size Aril 11, single spacing). A framework will be delivered during the first session.

JANUARY 2022 – MAY 2021 (PART – III) (\$250)

The Part-II of the programme will be mainly based on a successful completion of the assigned project and acceptable project report. Details of the project template will be provided to the successful candidate of the Part-I. A half-day session on innovation/applied research project bid writing will be delivered by an expert.

Special Offer for the Successfully Completed Participants: A competition will be arranged for a digital game-based learning project using VR Technology. The best proposal will receive £10,000 for implementation with CamTech software development team.



Your course Conveners



Dr Sothy Khieng is the founding President of Cambodia University of Technology and Science and advises the National Council of Science, Technology and Innovation. He served as the Vice President (Research and Administration) at Kirirom Institute of Technology between 2019-2021. He is an experienced and accomplished scholars, educator and higher education administrator. Before joining KIT, he spent ten years at Cambodia's leading researching think-tank, Cambodia Development Resource Institute (CDRI). At CDRI, he co-founded and was the Head of Education Unit from 2014-2018 where he was a co-editor of Book on Cambodia Education 2015: Employment and Empowerment. He is also the author of a book on "The dawn of social enterprise in Cambodia?" which was published because of his doctoral research. His inter-disciplinary field of research interest includes post-secondary education, social entrepreneurship and innovation, and science and technology. He has held several research fellowship appointments, including at Griffith University, and University of Melbourne (Australia), and Swiss Federal Institute for Vocational Education and Training (Switzerland). Dr Khieng publishes peer-reviewed articles in various international journals. He co-founded the Comparative Education Society of Cambodia and is currently serving as a board member in this society and as an international advisory board member in Compare: A Journal of Comparative and International Education (UK). He has a PhD in Organization Sciences from Vrije Universiteit Amsterdam, Netherlands and an MA in International Development Studies from Ohio University, USA, under the Fulbright Scholar Program during which he was the President of Ohio University Fulbright Association between 2007-2008.

Professor Alamgir Hossain received the DPhil degree from the Department of Automatic Control and Systems Engineering, University of Sheffield, UK. He is currently serving as a Professor of Artificial Intelligence and Vice President of the Cambodia University of Technology and Science (CamTech). Prior to this, he also served in the Teesside University, UK (Professor & Research Lead, Centre for Digital Innovation), Anglia Ruskin University at Cambridge, UK (Professor & Director of IT Research Institute), University of Northumbria, UK (Professor & Head of Computational Intelligence Group), University of Bradford, UK, University of Sheffield, UK, Sheffield Hallam University, UK and University of Dhaka, Bangladesh (Chairman, Department of Computer Science and Engineering). He has extensive research experience in artificial intelligence, image processing, predictive modelling, cybersecurity, intelligent decision support systems, robotics and adaptive control systems. He has led many funded projects as an international lead investigator, worth over £16 million. With a publication in Nature, he has published over 350 refereed research articles, contributed to 12 books, received the "F C Williams 1996" award (UK) and Lifetime achievement award (Channel S, London). He has received over 12,000 citations (h-index 34) and won five best paper awards at international conferences. He had 17 successful PhD completions under his direct supervision. He also served as a guest editor of many high-quality journals and chair/co-chairs of many conferences.





Special Guest Speaker



Professor Kieth Rethy Chhem is a medical doctor, science diplomat, educator and historian with extended experience in Digital Science & Technology, Global Health Diplomacy, Nuclear Technology Policy, and Executive Education. He holds a MD, a PhD in Education and a PhD in History. He has published more than 100 scientific articles, edited 17 textbooks and has been invited as a keynote speaker in more than 70 countries. He was a Professor of Radiology in Canada (McGill), Singapore (NUS), Austria (Vienna Medical University) and Japan (Hiroshima, Nagasaki, Fukushima Medical University) for 30 years. He was the Chair of the Radiology and Nuclear Medicine Department of University of Western Ontario. He was the Director of the Division of Human Health at the International Atomic Energy Agency (IAEA) from 2008 to 2014.

From 2014 to 2019, he was the Executive Director of the Cambodian Development Resource Institute (CDRI), a leading think tank in Cambodia, in the Top 100 of the University of Pennsylvania Global Think Tank ranking. He is the cofounder of the China Studies Center at CDRI. Currently, he is an Honourary Distinguished Fellow at the Asian Vision Institute and a member of the Advisory Board of the International Center for Higher Education Innovation (UNESCO) at the Southern University of Science and Technology in Shenzhen. He is a distinguished visiting professor at the Royal University of Phnom Penh, Atomic Bomb Disease Institute, Nagasaki, Hiroshima and Fukushima Medical University. He is an international advisor to the China Institute of International Studies in Beijing. He serves also as an academic advisor to the Kirirom Institute of Technology and the National Institute of Posts, Telecoms, and ICT (NIPTICT).

In May 2019, Professor CHHEM Kieth Rethy was appointed Minister Delegate, Attached to the Prime Minister. In August 2020, he was appointed as Secretary of State at the newly created Ministry of Industry, Science, Technology and Innovation, in addition to his position at the Prime Minister Office. In these capacities, he oversees the National Institute of Science, Technology and Innovation (NISTI) and the National Institute of Diplomacy and International Relations (NIDIR).

Guest speakers/trainers

Dr Kathryn Hibbert is a professor and Associate Dean, Teacher Education at Western University in London, Canada. Over the past 40 years in education, she was a classroom teacher and consultant in public education for 18 years, and a university educator and scholar for the past 21 years. Kathy's interest in education across professions stemmed from observations and experiences of ongoing change over the past four decades. She is a scholar in teacher education, professional education (largely in medicine and health sciences) and a long-time collaborator with the International Atomic Energy Agency. She was the founding Director of the Interdisciplinary





Centre for Curriculum as a Social Practice, where scholars work to reconceptualize curriculum in our world. She has also served as a Distinguished Visiting Researcher with the Cambodia Development Resource Institute.



Prof Dr Shahir Liew obtained his BSCE and Ph.D., from Texas in 1983 and 1987, respectively. Dr Liew is a registered professional engineer in ASEAN and Malaysia, chartered engineer of UK, and is a Fellow member of the Energy Institute, the UK. He is currently the Vice President of the Malaysia Structural Steel Association and the Chairman of the Energy Institute, Malaysia. He has seen his time as an engineering consultant for more than two decades with projects' value totalling at more than 1 billion USD. He joined Universiti Teknologi PETRONAS in 2009 and is currently the Deputy Vice Chancellor of Research, Innovation, and Commercialization. He has published over 350 refereed articles, journals and conference proceedings and co-authored two books. His past experiences in the industry are the key impetus in incentivizing research and in bringing research products into the market.

Prof. Ruhul A Sarker received his PhD from the Department of Industrial Engineering, Dalhousie University, Halifax, Canada. He is currently a Professor in the School of Engineering and Information Technology (SEIT) at the **University of New South Wales** – UNSW Canberra, Australia, and leading the Canberra Evolutionary Optimization Research Group. He served as the Director of Faculty Postgraduate Research and the Deputy Head of School (Research) of SEIT in the past. Prof. Sarker's research interests include decision analytics, computational intelligence, and evolutionary optimization. He has published more than 400 papers in high impact journals and international conferences. As of Google Scholar, his publications are cited more than 10,200 times with *h*-index of 53. Prof. Sarker has successfully obtained more than A\$3 million in external research grants. He has been invited to deliver a key-note speech at several international conferences, including IEEE WCCI'2020. He is the lead author of the textbook *Optimization Modelling: A Practical Approach*, Taylor & Francis /CRC Press, Boca Raton. He has supervised 24 PhD theses to successful completion and is currently supervising 6 PhD students. Prof. Sarker is recognized as one of the top 2% of world's scientists-researchers by Stanford University (Research fields: Artificial Intelligence and Operations Research) based on Mendeley Data. He has received numerous awards from international conferences and algorithm competitions that include IEEE CEC and GECCO. Prof. Sarker was a technical co-chair for IEEE CEC'2003 and a proceeding co-chair for IEEE WCCI'2012. Currently, he is an associate editor of three international journals in his research field.





Prof. Henry Wang is currently the Head of Department of Mechatronics and Robotics. He is an IET Fellow and a senior member of IEEE. He is also a team leader of Talented Jiangsu Innovation and Entrepreneur Programme. He has broad academic working experience in China, England, Wales, and Scotland for more than 20 years. He has extensive research experience in Internet of Things (IoT), wireless mesh networks, indoor positioning, big data analytics, and applications for smart cities. Along with nearly 30 research projects sponsored from EU, UK EPSRC, Innovate UK, China NSFC, and industry, his research in each area has

led to an impactful industrial product. For example, the smart trolley, which has been deployed at more than 10 airports in China, he has developed with partners is the first in the world to provide an IoT solution aiming at providing intelligent airport services for passengers. His collaborative research in acoustic localisation with Zhejiang University has won the first place in Microsoft Indoor Localisation Competition in sound group. He has nearly 200 publications and filed dozens of patents, including 15 granted patents in the US, Japan, South Korea, and China. His research has been classified as World Leading at the UK's REF assessment. The highest citation number of a single technical paper is over 500. His current research interests include 6G networks and Industrial Internet of Things, indoor positioning and data services, acoustic localisation, communications and sensing, and smart services for group travellers. A team of collaborators inside and outside the university, including Oxford University and Zhejiang University, is working on these areas.

Dr. Mosharraf Sarker obtained his PhD in vascular physiology from King's College London (1991-1995), currently serving as the senior lecture at Teesside University, UK. The subject of his thesis was the mechanisms by which some inflammatory mediators increase cerebral microvascular permeability. Following this he undertook two postdoctoral research fellowships, firstly working with Dr Fraser and then with Dr. Fraser and Dr. Kevin Pedley at the Vascular Biology Research Centre, Cardiovascular Division, King's College London. Both Fellowships were funded by the Wellcome Trust where Dr. Sarker was the named applicant.



Dr. Sarker is still collaborating with Dr. Fraser at King's College London as a visiting lecturer. Dr. Sarker was also taught at the Pharmacy Department, Jahangirnagar University, Dhaka, Bangladesh. Dr. Sarker has also taken an active role in research management within the School of Science & Engineering and the University as Postgraduate Tutor (2007-to date); Chair of the University Research Degree Sub-committee (Oct 2013 –to date); member of the School Research Degree Committee (2004-2013) and University Research Degree Committee (2007-to date) and also was Vice Chair of the School Research Degrees Committee (SRDC) (2007-2009). He was an active member of the School Research Ethics Committee (2003-2010). Dr. Sarker is a senior academic fellow and received fund for his academic excellence project.



Dr. Abdullah Al-Mamun is an Assistant Professor of Health Outcomes Data Science in the Department of Pharmaceutical Systems and Policy in the School of Pharmacy at **West Virginia University (WVU)**. He received his Ph.D. in Computing and Information Sciences from the University of Northumbria at Newcastle, UK. Prior joining WVU, he worked as a researcher in multiple institutions (Cornell University and Yale University) and as a faculty in University of Rhode Island. In training, he is a health data scientist, specialized in the areas of health outcomes data science, and epidemiology. He brings interdisciplinary research experiences on building mathematical modelling and health data science tools (predictive models, machine learning) to understand disease dynamics both individual- and population-level. His research provides cutting-edge methods and tools to interpret and address the research questions related to health outcomes, big data, and epidemiological surveillance systems. His current research is expanded in three themes: (1) analysis of electronic health record data, (2) understanding opioid epidemic in USA, and (3) infectious disease and rural health. Currently, he leads a research lab **HealBig- Health Outcomes and BigData Informatics**. HealBig mainly focuses on understanding complex data problems in health outcomes and services-related research problems. HealBig develops and improves methods like mathematical and agent-based models, decision support systems, data mining, and machine learning within the health outcomes research domain.

In-house organizers/facilitators

Mr. Sathya Chea is currently the dean of the Faculty of Arts, Humanities, and Social Science, CamTech University. Prior to that, he was a lecturer of English, research, and education at the Institute of Foreign Languages, RUPP, from 2005. He did his master's degree in Educational Psychology at the Northern Illinois University from 2010 to 2012 on a Fulbright scholarship. He is currently a PhD candidate at the Education University of Hong Kong and expects to graduate in by the end 2021. His academic and research interest includes educational psychology, employability, and higher education.



Dr. Vatana Chea is Director of the Centre for Professional Education and Training and Research Coordinator in charge of Research and Innovation segment of CamTech. He holds a master's and a doctoral degree in Demography from Chulalongkorn University. Currently, he is also studying for another master's degree in Data, Economics, and Development Policy at the Massachusetts Institute of Technology (MIT). His research interest includes population projection, migration and development, human capital development, and economics of household.

Dr. Chea has authored and co-authored more than a dozen peer-reviewed scientific articles including book chapters and journals in ISI and SCOPUS database.



Mr Siriwat Chhem is Director of the Centre for Inclusive Digital Economy (CIDE), at Asian Vision Institute (AVI) - think tank. In addition, he is Director of Foundation Year and Digital Learning at Cambodia University of Technology and Science (CamTech), a Digital Business Consultant at Phnom Penh Commercial Bank (PPCBank), a Visiting Professor at Kirirom Institute of Technology (KIT), and a Digital Business Consultant at Jobify. He is a member of the Global Shapers Community (Phnom Penh Hub), an initiative of the World Economic Forum. Siriwat holds a Master in Digital Technology Management, specialising in Artificial Intelligence, from the Bologna Business School, at the University of Bologna in Italy. He is currently completing an MA in International Relations from the Pannasastra University of Cambodia. He also received his BSc, with a Combined Major in Chemistry, Physics, and Environmental Science, from the University of British Columbia in Canada.



Mr. Pharino Chum is the Dean of Faculty of Engineering of Cambodia University of Technology and Science. Mr. Pharino Chum, is currently a PhD candidate for Human Centred Studies, majoring in Information and Communication Engineering, at Tokyo Institute of Technology in Japan through the JICA program. He graduated with a master degree in Electrical and Electronics Engineering from Chung-Ang University in the Republic of Korea through Chung-Ang University Young Scientist Scholarship program. With engineering expertise and enthusiasm in advance robotic and biomedical engineering, he received various grants in forms of research projects and scholarships, including a grant for developing prototype mobile robot for disabled patients using brain-computer interface technology. He is a member of Robocon Cambodia Committee and an IEEE fellow. His publication can be found at <https://tinyurl.com/928kkbd3>.

Mr. Pakrigna Long is a lecturer at the Faculty of Engineering, CamTech University. Besides assisting and supervising students, he carries out research and produce publications and contribute to the development, planning and implementation of a high-quality curriculum. He holds a dual bachelor's degree in Computer Science and Informatics Engineering from Cambodia and Indonesia, and a master's degree in Computing in Engineering Systems from Thailand. He is now a PhD student in Electrical and Electronic Engineering at the Universiti Kuala Lumpur. Pakrigna used to work as an IT officer in Phnom Penh and a data analyst in Kuala Lumpur. His research interests are Natural Language Processing, Data mining and analytics and Renewable Energy.

