National Cheng Kung University

2019 EECS International Summer School at NCKU

Continuing the mission of providing an intensive professional training in a rich cultural backdrop of Tainan, Department of Electrical Engineering and Department of Computer Science and Information Engineering of National Cheng Kung University will jointly host the prospective international students from City University of Hong Kong and Texas Tech University for participating in the 2019 EECS International Summer School, starting from July 4th to August 13th of 2019. Besides, our local Taiwanese students will join this program to promote technical and cultural exchanges.

2019 EECS International Summer School focuses on providing professional topics and culture class during this 6-week program, such as Internet of Things, Traction Motors and Drives for Electric Vehicles, Java Programming, and Exploring Tainan. Students who join this program not only learn the basic knowledge and skills of the fields but also have chances to do hands-on practices through the courses.

EECS International Summer Program enables international students to obtain formal credits after the completion during their summer break, and offers international students a glimpse to the wonderfully historic city in southern Taiwan.

The information in details as follows.

(1) **Date:** July 4 to August 13, 2019.

(2) **Recruit number:** 24 undergraduates of City University of Hong Kong.

(3) **Fee:** Course fee and dormitory fee will be covered by NCKU. Students only need to be responsible for the payment of flight tickets, living expense and insurance fee.

(4) **Credits:** 6 credits.

(5) **Place:** EE department and CS department of NCKU.

(6) **Course and Instructors:**

Topic	Instructors	Hrs
Internet of Things	Prof. Sok-Ian (Ines) Sou	20
Traction Motors and Drives for Electric Vehicles	Prof. M.-F. Hsieh	20
Java Programming	Prof. Shin-Jie Lee	20
Explore Tainan/ Language Exchange	*TBD	54

National Cheng Kung University

Course1

Topic1: Internet of Things

- **Course Objective**

  Internet of Things (IoT) has attracted a lot of attention in recent years. In this topic, we introduce the three layers in IoT, including the sensors, communications networks and applications to the students. We also implement simple IoT applications through sensors, development boards and smartphone.

- **Course Outline**

  Introduction to IoT and its applications
  Implementation IoT applications with sensors
  Implementation IoT applications with smartphones

- **Contact with Teacher:**

  Prof. Sok-Ian (Ines) Sou: sisou@mail.ncku.edu.tw

- **Grading:**

Method	%
Final Project	100 %

Topic2: Traction Motors and Drives for Electric Vehicles

- **Course Objective**

  This course introduces the technologies required in electric vehicles (EVs) with an emphasis on traction motors and drives – the heart of EVs. The course aims to provide students with knowledge involving vehicle dynamics and traction motors/inverters requirement and designs. Some other topics, such as autonomous cars and charging would also be touched. Hands-on exercise covers traction motor designs/simulations and system level simulations including vehicles, traction motor and drives.

- **Course Outline**

  Introduction to Electric Vehicles and Technologies
  Principle of Traction Motors and Drives
  Hands-on Exercise (traction motor design/simulation)

Hands-on Exercise (system level)

- **Prerequisite Course**

  Fundamental of Electrical Machines, Electronics

- **Contact with Teacher:**

  Prof. M.-F. Hsieh: mfhsieh@mail.ncku.edu.tw

- **Grading:**

Method	%
Assignment	40 %
Test	20 %
Final Project	40 %

Topic3: Java Programming

- **Course Objective**

  This course aims to introduce the Java programming language based on software development practices, tools and methods. This course involves introduction to Java programming language, labs, and Java software project development. After taking this course, students will learn the basic skills on how to develop a Java application.

- **Course Outline**

  Language Fundamental, Console Input/Output, Flow of Control

  Defining Classes, Arrays, Inheritance, Polymorphism

  File IO, Swing, Thread, and Networking

  Java Project Development

  Oral Presentation

- **Contact with Teacher:**

  Prof. Shin-Jie Lee jielee@mail.ncku.edu.tw

- **Grading:**

Method	%
Final Project	100 %

National Cheng Kung University

Course2 Explore Tainan

- **Course Objective**

1. Unique Space and Time of Humanity: National Cheng Kung University is situated in Tainan, an important city with roots stemming from Taiwan's earliest known time. The city encompasses rich prehistoric and aboriginal history consisting of a unique and unparalleled cultural tradition.
2. Designing and Planning General Education Intercollegiate Core Courses: Integrating the historical formation of Tainan City, the pulse of urban development and the vision, as well as realizing the linkage between school teaching and social rhythms.

- **Course Outline**

Description		Time
Campus Tour		3hrs
Route 1 Zeelandia and the Retrospective Anping	Introduction to Anping Castle and Yanping (Anping) Old Street	3hrs
	Introduction to Haishan Hall, Old Tait & Co. Merchant House, and Anping Sio House (Salt Museum)	3hrs
	Onsite visit	4hrs
Route 2 Chikan Park Area and Historical Traces	Introduction to Chikan Tower and Sacrificial Rites Martial Temple (Sidian Wumiao)	3hrs
	Introduction to Grand Goddess Temple and The Big Wall (Da Jingtou)	3hrs
	Onsite visit	4hrs
Language Exchange/ Culture Exchange		13hrs
Taiwan Art & History		15hrs
Presentation	Final Project	3hrs

- **Contact with Teacher:**

  *TBD

- **Grading:** Final Project 100%

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(7) **Course Schedule:**

2019 International Summer School - NCKU Timetable (July 4th - August 13th)

Date				4-Jul	5-Jul	6-Jul	7-Jul
	Mon	Tue	Wed	Thur	Fri	Sat	Sun
09:00-11:30					EE Opening	Weekend	
14:00-17:00				Dorm Check in	Campus Tour		
Date	**8-Jul**	**9-Jul**	**10-Jul**	**11-Jul**	**12-Jul**	**13-Jul**	**14-Jul**
	Mon	**Tue**	**Wed**	**Thur**	**Fri**	**Sat**	**Sun**
09:00-11:30	Topic1-1	Topic1-2	Topic1-3	Topic1-4	Topic1-5	Weekend	
14:00-17:00	Explore Tainan1	Explore Tainan1	Culture1-Ex	Explore Tainan1	Free		
Date	**15-Jul**	**16-Jul**	**17-Jul**	**18-Jul**	**19-Jul**	**20-Jul**	**21-Jul**
	Mon	**Tue**	**Wed**	**Thur**	**Fri**	**Sat**	**Sun**
09:00-11:30	Topic1-6	Topic1-7	Presentation	Free		Weekend	
14:00-17:00	Taiwan Art-p	Taiwan Art-M	Culture2-Ex				
Date	**22-Jul**	**23-Jul**	**24-Jul**	**25-Jul**	**26-Jul**	**27-Jul**	**28-Jul**
	Mon	**Tue**	**Wed**	**Thur**	**Fri**	**Sat**	**Sun**
09:00-11:30	Topic2-1	Topic2-2	Topic2-3	Topic2-4	Topic2-5	Weekend	
14:00-17:00	Explore Tainan2	Explore Tainan2	Culture3-Ex	Explore Tainan2	Free		
Date	**29-Jul**	**30-Jul**	**31-Jul**	**1-Aug**	**2-Aug**	**3-Aug**	**4-Aug**
	Mon	**Tue**	**Wed**	**Thur**	**Fri**	**Sat**	**Sun**
09:00-11:30	Topic2-6	Topic2-7	Presentation2	Free	Free	Weekend	
14:00-17:00	Taiwan Art-p	Taiwan Art-M	Culture4-Ex	Explore Tainan Presentation			

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Date	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	10-Aug	11-Aug
	Mon	Tue	Wed	Thur	Fri	Sat	Sun
09:00-11:30	Topic3-1	Topic3-2	Topic3-4	Topic3-5	Topic3-7	Weekend	
14:00-17:00	Taiwan Art-p	Topic3-3	Culture5-Ex	Topic3-6	Free		

Date	12-Aug	13-Aug
	Mon	Tue
09:00-11:30	Presentation3	**Dorm check out**
14:00-17:00	**Close Ceremony**	**Sweet Home**

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Course Syllabus Summer Term 2019

Part I Course Overview

Course Title: Electrical Workshop

Course Duration: 6 weeks

Credit Units: 3

Part II Course Details

(1) **Course and Instructors:**

Topic	Instructors	Hrs
Internet of Things	Prof. Sok-Ian (Ines) Sou	20
Traction Motors and Drives for Electric Vehicles	Prof. M.-F. Hsieh	20
Java Programming	Prof. Shin-Jie Lee	20

Topic1: Internet of Things

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Prof. Sok-Ian (Ines) Sou: sisou@mail.ncku.edu.tw

- **Grading:**

Method	%
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- **Course Objective**

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- **Course Outline**

Introduction to Electric Vehicles and Technologies

Principle of Traction Motors and Drives

Hands-on Exercise (traction motor design/simulation)

Hands-on Exercise (system level)

- **Prerequisite Course**

Fundamental of Electrical Machines, Electronics

- **Contact with Teacher:**

Prof. M.-F. Hsieh: mfhsieh@mail.ncku.edu.tw

- **Grading:**

Method	%
Assignment	40 %
Test	20 %
Final Project	40 %

Topic3: Java Programming

- **Course Objective**

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Oral Presentation

- **Contact with Teacher:**

Prof. Shin-Jie Lee jielee@mail.ncku.edu.tw

- **Grading:**

Method	%
Final Project	100 %

National Cheng Kung University

Course Syllabus Summer Term 2019

Part I Course Overview

Course Title: Exploring Tainan

Course Duration: 6 weeks

Credit Units: 3

Part II Course Details

- **Course Objective**

1. Unique Space and Time of Humanity: National Cheng Kung University is situated in Tainan, an important city with roots stemming from Taiwan's earliest known time. The city encompasses rich prehistoric and aboriginal history consisting of a unique and unparalleled cultural tradition.

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	Onsite visit	4hrs

Language Exchange/ Culture Exchange		13hrs
Taiwan Art & History		15hrs
Presentation	Final Project	3hrs

- **Contact with Teacher:**
  (to be defined)

- **Grading:**

Method	**%**
Final Project	100%