

Research methods: Sensing, Monitoring and the Internet of Things
Nepal - National Summer School
March 28th—March 30th 2018

Day 1 (28th March): Effective research communication

DAY 1	TIME	TITLE	TYPE	DESCRIPTOR
Session 1.0	09:00-09:30	Welcome and introductions	Presentation	<ul style="list-style-type: none"> • Aims and purpose of the 3-day workshop • Introducing the speakers & audience • Motivations for attending and delivering the workshop • The bigger picture of academic inclusion • Indicative learning content • Agenda and Setting expectations • TinyOS install help
Session 1.1	09:30-10:30	Scientific communications	Presentation	The session will explore topics including: <ul style="list-style-type: none"> • Why do we communicate research? • What are the common current means of research communication? • Choosing your communication method and audience, • Effective verbal communication and the <i>elevator speech</i>
Break	10:30-11:00			
Session 1.2	11:00-12:15	How effectively do you communicate?	Tutor-led exercises	Interactive exercises on verbal communications
Session 1.3	12:15- 12:30	Summary of morning sessions	Class discussion	Draw on the morning sessions and introduce the afternoon sessions
Lunch	12:30-13:30			
Session 1.4	13:30- 15:00	Abstract writing tutorial (1)	Tutor-led exercises	The session will focus on best practice for producing effective and concise abstracts.
Break	15:00-15:30			
Session 1.5	15:30- 16:30	Abstract writing tutorial (2)	Tutor-led exercises	Continuation of previous session
Session 1.6	16:30-16:45	3MT homework kick-off	Presentation	Homework 1: 3MT

Day 2 (29th March): 3MT presentations and an introduction to the Internet of Things

DAY 2	TIME	TITLE	TYPE	DESCRIPTOR
Session 2.0	09:00-09:15	Welcome	Presentation	Aims and purpose of the day
Session 2.1	09:15-10:30	3MT	3MT presentations	15 student 3MT presentations. 3 minutes for each presentation and time to swap.
Break	10:30-11:00			
Session 2.2	11:00-12:15	3MT	3MT presentations	15 student 3MT presentations. 3 minutes for each presentation and time to swap.
Session 2.3	12:15-12:30	3MT: Group feedback and discussion	Class discussion	Class discussion on how well the 3MT presentations went, plus general feedback from tutors
Lunch	12:30-13:30	Individual feedback (during lunch)	Tutor and attendee 1-2-1	During lunch attendees can individual feedback from the notes taken
Session 2.4	13:30-14:30	Introduction to the Internet of Things (IoT) and applications	Presentation	Lecture: From sensors to sensors networks and the Internet of Things
Session 2.5	14:30-15:00	IoT applications design by non-specialists	Group exercise	A group exercise to specify an IoT application that would solve a relevant, real-world problem in Nepal (be it economical, societal or natural hazards related)
Break	15:00-15:30			
Session 2.6	15:30-16:30	The HELP Project	Lecture	This lecture provides the background to the HELP project and demonstrates how IoT can help assess the impact of energy access on refugee and internally displaced communities.
Session 2.7	16:30-17:00	TinyOS Install help	1-2-1 help	Half hour to troubleshoot TinyOS installs required for day 3

Day 3 (30th March): TinyOS development

SESSION ID	TIME	TITLE	TYPE	DESCRIPTOR
Session 3.0	09:00-09:15	Welcome	Presentation by tutors	Aims and purpose of the day
Session 3.1	09:30-10:30	An introduction to TinyOS: Blink	Tutorial	This tutorial will show how TinyOS applications fits together and make a small change, e.g., speed up the LED's.
Break	10:30-11:00			
Session 3.2	11:00-11:45	TinyOS: Debugging and Sensing	Tutorial	This tutorial will demonstrate how to print messages to the terminal from a Telos mote, and display temperature readings.
Session 3.3	11:45-12:30	TinyOS: Networking	Tutorial	This tutorial focuses on how to broadcast and unicast data packets between 2 nodes.
Lunch	12:30-13:30			
Session 3.4	13:30-15:00	Project development (1)	Exercise for attendees	Attendees will develop a system in TinyOS, that will be presented in the next session.
Break	15:00-15:30			
Session 3.5	15:30-16:00	Project development (2)	Exercise for attendees	Continuation of previous session
Session 3.6	16:00-16:30	Demos	Exercise for attendees	Each group to present their system for 3-5 minutes each, link to 3MT
Session 3.7	16:30-16:45	Close	Presentation by tutors	Summarise and bring the workshop to a close