Dyson School of Design Engineering

DE 2   Electronics 2 DRAW week Laboratory Oral Examination Guidelines

Peter Cheung, version 2.3

Assessment of Lab 1 to Lab 3 will be in the form of a 15-minute oral examination for each student with one of four assessors on Wed 14 Feb 9.30 to 12.00, or Thur 15 Feb 9.30 to 12.00, and 13.00 to 15.00. All orals will be conducted in person in Ground Floor Lecture Theatre. If you are unable to attend the Lab Oral at the appointed time, please find someone willing to swap with you and inform me via email. A schedule for the examination is shown below. **This is a formal assessment, and you are REQUIRED to be present at the allotted time**.

The purpose of the Oral examination is to establish how much you have learned in respect to the learning outcomes of these Lab Sessions. Questions will be asked which aim to establish your level of understanding and how well you have conducted the experiments including the effective use of your logbook. Your logbook MUST BE available during the oral examination, so that you can refer to its contents. Bring your laptop with you and have the logbook ready for the Assessor to read through quickly. Please arrive at the Library at least 5 minutes before your allotted time and wait quietly in the lobby area outside the phone booths on Level 3 until you are called.

The learning outcomes for each Lab are summarized below. It is helpful if you consider to what extend you have understood with respect to this list of learning outcomes.

Lab 1: Matlab basics

Learn to use basic Matlab features, e.g. plotting graphs; understanding of the time domain and frequency domain views of signals.

Lab 2: Signal Processing with PyBench & Matlab

How Pybench board communicate with Matlab programming environment; generation and capture of signals on the board; spectral domain analysis of sound captured by microphone; effect of under sampling and its consequence; interpretation of results returned by the fft(.) function in Matlab; frequency resolutions of spectrum; strength of harmonic components for periodic signals such as square waves and triangular waves; manipulation of sound files stored as .WAV files on a computer; signal segmentation using instantaneous energy; beat extraction of musical sound.

Lab 3: System Characterization and Transfer Function

DC response of a non-linear system; understand of system modeling in mathematics (in s-domain); meaning of transfer functions; how to obtain frequency response from the transfer function of a "black-box" system; step-response of a system; using Matlab to do the above; difference between the measured and predicted frequency response of the bulb board.

DE2 DRAW week Lab Oral Schedule (14, 15 Feb 2024)

You must arrive at the Library at least 5 minutes before your schedule time.

Surname	First Name	Date	Time	Examiner
Reynolds	Josh	Wed 14 Feb	09.30 - 09.45	Peter
Ahmad	Zain	Wed 14 Feb	09.45 - 10.00	Peter
Hussain	Danyaal	Wed 14 Feb	10.00 - 10.15	Peter
Garces Beavis	Daniella	Wed 14 Feb	10.00 - 10.15	Anna
Andrews	Charlotte	Wed 14 Feb	10.00 - 10.15	Yanran
Gok	Acar	Wed 14 Feb	10.00 - 10.15	Tianxiao
Cheah	Shawn	Wed 14 Feb	10.15 - 10.30	Peter
Lehrell	Patrick	Wed 14 Feb	10.15 - 10.30	Anna
Carlos	Caitlin	Wed 14 Feb	10.15 - 10.30	Yanran
Shu	Sicheng	Wed 14 Feb	10.15 - 10.30	Tianxiao
Irechukwu	Emmanuel	Wed 14 Feb	10.30 - 10.45	Peter
Wilton	Alex	Wed 14 Feb	10.30 - 10.45	Anna
Young	Imogen	Wed 14 Feb	10.30 - 10.45	Yanran
Seo	Yujeong	Wed 14 Feb	10.30 - 10.45	Tianxiao
Hasan	Daniel	Wed 14 Feb	10.45 - 11.00	Peter
Mabey	Leyla	Wed 14 Feb	10.45 - 11.00	Anna
Ioannides	Andria	Wed 14 Feb	10.45 - 11.00	Yanran
Jia	Haozhen	Wed 14 Feb	10.45 - 11.00	Tianxiao
Zhang	Yang	Wed 14 Feb	11.00 - 11.15	Peter
Cattaneo	Anastasia	Wed 14 Feb	11.00 - 11.15	Anna
Grose	Christian	Wed 14 Feb	11.00 - 11.15	Yanran
Feng	Zile	Wed 14 Feb	11.00 - 11.15	Tianxiao
Yang	Ashley	Wed 14 Feb	11.15 - 11.30	Peter
Isola	Edward	Wed 14 Feb	11.15 - 11.30	Anna
Gu	Sarah	Wed 14 Feb	11.15 - 11.30	Yanran
Yan	Tianle	Wed 14 Feb	11.15 - 11.30	Tianxiao
Liu	Ling	Wed 14 Feb	11.30 - 11.45	Peter
Ferguson	George	Wed 14 Feb	11.30 - 11.45	Anna
Kurzman	Solly	Wed 14 Feb	11.30 - 11.45	Yanran
Wancerski	Krzysztof	Wed 14 Feb	11.30 - 11.45	Tianxiao
Tie	Warren	Wed 14 Feb	11.45 - 12.00	Peter
Liu	Andy	Wed 14 Feb	11.45 - 12.00	Anna
Li	Flora	Wed 14 Feb	11.45 - 12.00	Yanran
Lee	Han Anne	Wed 14 Feb	11.45 - 12.00	Tianxiao
Iqbal	Zara	Thur 15 Feb	09.30 - 09.45	Peter
Zhang	Steven	Thur 15 Feb	09.30 - 09.45	Anna
Zhang	Jennifer	Thur 15 Feb	09.30 - 09.45	Yanran
Wright	Liberty	Thur 15 Feb	09.45 - 10.00	Peter
Lee	Gabriela	Thur 15 Feb	09.45 - 10.00	Anna
Li	Alex	Thur 15 Feb	09.45 - 10.00	Yanran
Cai	Yicheng	Thur 15 Feb	10.00 - 10.15	Peter
Rai	Akriti	Thur 15 Feb	10.00 - 10.15	Anna
Zhang	Alina	Thur 15 Feb	10.00 - 10.15	Yanran
Ball	Matthew	Thur 15 Feb	10.15 - 10.30	Peter
Langton	Michael	Thur 15 Feb	10.15 - 10.30	Anna
Singh	Vaibhav	Thur 15 Feb	10.15 - 10.30	Yanran
Hoang	Dylan	Thur 15 Feb	10.30 - 10.45	Peter
Silver	Anna	Thur 15 Feb	10.30 - 10.45	Anna
Vijayanand	Surya	Thur 15 Feb	10.30 - 10.45	Yanran
De la Fuente Guillen	Javier	Thur 15 Feb	10.45 - 11.00	Peter
Cheung	Jonathan	Thur 15 Feb	10.45 - 11.00	Anna
Lloyd White	Seamus	Thur 15 Feb	10.45 - 11.00	Yanran
Rastelli	Francesco	Thur 15 Feb	11.00 - 11.15	Peter
Viazmitinova	Lena	Thur 15 Feb	11.00 - 11.15	Anna
Wang	Yixin	Thur 15 Feb	11.00 - 11.15	Yanran
Haynes	Emily	Thur 15 Feb	11.15 - 11.30	Peter
Gray	Sam	Thur 15 Feb	11.15 - 11.30	Anna
Stobbs	Rafi	Thur 15 Feb	11.15 - 11.30	Yanran
Nicholson	Freddie	Thur 15 Feb	11.30 - 11.45	Peter
Kim	Erik	Thur 15 Feb	11.30 - 11.45	Anna
Ranaweera	Tharindu	Thur 15 Feb	11.30 - 11.45	Yanran
Phillips	Ella	Thur 15 Feb	11.45 - 12.00	Peter
Asensio Delgado	Cesar	Thur 15 Feb	11.45 - 12.00	Anna
Saar	Stefan	Thur 15 Feb	11.45 - 12.00	Yanran
Xiong	Shirley	Thur 15 Feb	13.00 - 13.15	Peter
Haji-Ioannou	Erietta	Thur 15 Feb	13.00 - 13.15	Anna
Yang	Kaitai	Thur 15 Feb	13.00 - 13.15	Yanran
Bloch	Angus	Thur 15 Feb	13.00 - 13.15	Tianxiao
Liu	Chris	Thur 15 Feb	13.15 - 13.30	Peter
Hall	Zoe	Thur 15 Feb	13.15 - 13.30	Anna
Tang	Miaoyan	Thur 15 Feb	13.15 - 13.30	Yanran
Wang	Zhuoxiaoyu	Thur 15 Feb	13.15 - 13.30	Tianxiao
Carpar	Tamara	Thur 15 Feb	13.30 - 13.45	Peter
Williams	Josh	Thur 15 Feb	13.30 - 13.45	Anna
Hamlet	Greg	Thur 15 Feb	13.30 - 13.45	Yanran
Wang	Zhihan	Thur 15 Feb	13.30 - 13.45	Tianxiao
Wu	Yifan	Thur 15 Feb	13.45 - 14.00	Peter
Fang	Gexing	Thur 15 Feb	13.45 - 14.00	Anna
Ramirez	Arancha	Thur 15 Feb	13.45 - 14.00	Yanran
Xiong	Chuwei	Thur 15 Feb	13.45 - 14.00	Tianxiao
Feng	Haoran	Thur 15 Feb	14.00 - 14.15	Peter
Rhodes	Sinai	Thur 15 Feb	14.00 - 14.15	Anna
Ing	Reiya	Thur 15 Feb	14.00 - 14.15	Yanran
Hu	Hongyi	Thur 15 Feb	14.00 - 14.15	Tianxiao
Miao	Constance	Thur 15 Feb	14.15 -14.30	Peter
Shi	Caesar	Thur 15 Feb	14.15 -14.30	Anna
Li	Qinxuan	Thur 15 Feb	14.15 -14.30	Yanran
Weill	Maxim	Thur 15 Feb	14.15 -14.30	Tianxiao
Dharmawardene	Chehara	Thur 15 Feb	14.30 - 14.45	Peter
Chen	Meihan	Thur 15 Feb	14.30 - 14.45	Anna
Liu	Jingyang	Thur 15 Feb	14.30 - 14.45	Yanran
Bendor	Aaron	Thur 15 Feb	14.30 - 14.45	Tianxiao
Gould	Harvey	Thur 15 Feb	14.45 - 15.00	Peter
Kennedy	Ruby	Thur 15 Feb	14.45 - 15.00	Anna
Mohammed	Ashraf	Thur 15 Feb	14.45 - 15.00	Yanran
Jung	Zoe	Thur 15 Feb	14.45 - 15.00	Tianxiao

Imperial College London

DE2 Electronics 2 – DRAW Week Lab Oral Feedback Sheet

Name of Student:

Names of Assessors: Date: Wed or Thur (am/pm)

GRADE:

Performance on the Lab Experiments

1.   Logbook Quality and Effectiveness

| Highly effective | Effective | OK | Weak | Poor |

2.   Ability to answer questions from the logbook

| Excellent | Good | OK | Poor | Very poor |

3.   Effort to completing Lab 1 to 3

| Fully engaged Strong evidence | Good engagement Good evidence | Acceptable Engagement | Below expected Engagement | V. poor Engagement |

Understanding and Learning Outcomes

5.   Understanding of experimental setup (i.e. Pybench, Matlab etc.)

| Excellent | Good | OK | Poor | Very poor |

5.   Explanation on theories behind experiments

| Excellent | Good | OK | Poor | Very poor |

6.   Examiner's opinion on candidate's depth of understanding in general

| Broad & deep | Good | Average | Less than average | Poor |

FEEDBACK TO STUDENT: