

Dyson School of Design Engineering

DE 2 Electronics 2

Final Laboratory Oral Examination Guidelines (2026)

Peter Cheung, version 2.6

Assessment on Lab 4 - 6 and the challenges will be in the form of a 20-minute oral examination **in pairs of lab partners together** with one of the five Assessors on Tuesday 17 March 10.00 to 12.00 and 13.00 – 14.20. If you and your partner are unable to attend the Lab Oral at the appointed time, please find another pair 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 Lab Oral will take place in the Digital Learning Hub, RCS1 110.

The purpose of the Oral examination is to establish how much you have learned in the second half of this term, and how much you have achieved in the Challenges. Questions will be asked to establish your level of understanding and how effectively you have conducted the experiments including the effective use of your logbook for Labs 4 - 6. You are expected to **keep your own logbook**. If you share a logbook, you must demonstrate that it is not a ONE PERSON's effort alone, i.e. you will be tested on contents in the logbook even if you were not the one who "kept" it!

During the oral, you are also expected to show what you have achieved for the challenges. I **strongly recommend that you take short videos of the challenge outcomes with your phone, even if you plan to demonstrate your achievement live.**

YOU MUST BRING YOUR SEGWAY ASSEMBLY, THE PYBENCH CARDBOARD BOX, ALL CABLES, ASSESSORIES AND BATTERY, BULB BOARD AND EVERYTHING ELSE ASSOCIATED WITH THIS MODULE TO YOUR LAB ORAL. NO MARKS WILL BE RECORDED OR RETURNED TO YOU UNTIL I HAVE RECEIEVED YOUR COMPLETE KIT.

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 4: IMU and OLED Display

How accelerometer and gyroscope can be used to measure pitch and roll angles; their strength and limitations; how the limitations of both type of sensors can be mitigated; how to write stand-alone program in uPy; what happens when you power up the PyBench hardware board; understanding of what the Matlab and uPy code do.

Lab 5: Motor speed measurement & Polling vs interrupt

Explain how motor speed can be measured using Hall effect sensors; demonstrate understanding of the difference between polling and interrupt and their relative advantages and disadvantages; explain how MicroPython can be used to set up various interrupt mechanisms so that interrupts happen; explain what is an interrupt service routine and how to write a good one.

Lab 6: Buffering and Beat Detection

Explain how timer can be used to determine and control the collection of real-time audio data at a fixed sampling rate; show how to use memory of the microcontroller to capture and store a block of data; instantaneous energy can be used to determine the beat of music; suggest possible improvement in the skeleton algorithm provided.

Weighting for the Final Week Lab Oral

The Final Week Lab Oral is worth 20% of the module. 15% will be on the performance in Lab 4-6. 5% of will be on the achievement with the challenges.

DESE50002 - Electronics 2 - Final week Lab Oral - Tue 17 March 2026

Surname	First Name	Time	Assessor
Ali	Leila	13.40 - 14.00	Assessor_1
Aphiphunya	Peppe	11.20 - 11.40	Assessor_2
Atsavasirilert	New	11.40 - 12.00	Assessor_5
Birch	Joseph	10.40 - 11.00	Assessor_5
Brand	Lucian	11.00 - 11.20	Assessor_5
Carpenter	Ted	10.20 - 10.40	Assessor_5
Chaisen	Preme	11.00 - 11.20	Assessor_1
Chen	Yanxu	11.20 - 11.40	Assessor_1
Chen	Joe	13.00 - 13.20	Assessor_5
Cowell	Josh	13.20 - 13.40	Assessor_1
Enebeli	Ikem	13.20 - 13.40	Assessor_5
Fadahunsi	Aliyah	10.20 - 10.40	Assessor_1
Fasoro	Amarie	13.00 - 13.20	Assessor_4
Fisher	Shaan	10.40 - 11.00	Assessor_5
Foschi	Chiara	13.40 - 14.00	Assessor_2
Fryer	Yasmin	11.00 - 11.20	Assessor_4
Garlapalli	Vaishnavi	13.00 - 13.20	Assessor_1
Garvey	Eliza-Mae	13.00 - 13.20	Assessor_1
Gaunt	Kaiyu	10.20 - 10.40	Assessor_2
Hampel	Nell	11.00 - 11.20	Assessor_3
Hett	Noah	13.20 - 13.40	Assessor_5
Huang	Zhuangyi	10.00 - 10.20	Assessor_3
Ishikawa	Coe	11.40 - 12.00	Assessor_4
Jones	Mayli	13.40 - 14.00	Assessor_1
Kan	Niki	11.00 - 11.20	Assessor_2
Kanagasabay	Emily	11.00 - 11.20	Assessor_2
Kancal	Arda	13.20 - 13.40	Assessor_2
Kara	Hanan	11.40 - 12.00	Assessor_2
Karim	Ayden	11.00 - 11.20	Assessor_4
Kaura	Devanshi	11.40 - 12.00	Assessor_4
Kim	Ellie	11.40 - 12.00	Assessor_5
Koteyar	Ananya	13.40 - 14.00	Assessor_4
Lee	Tiffany	10.20 - 10.40	Assessor_5
Li	Haoyang	10.00 - 10.20	Assessor_5
Li	Fiona	10.00 - 10.20	Assessor_1
Li	Yutong	10.20 - 10.40	Assessor_3
LIANG	LOK HANG	10.40 - 11.00	Assessor_4
Light	Curtis	13.20 - 13.40	Assessor_1
Liu	Yixuan	10.00 - 10.20	Assessor_2
Liu	Stanley	13.20 - 13.40	Assessor_3
Llinares Perales	Elena	10.40 - 11.00	Assessor_2
Long	Yile	10.40 - 11.00	Assessor_4
Luk	Janice	13.40 - 14.00	Assessor_3
Mcneill	Hamish	14.00 - 14.20	Assessor_2
Meng	Jiashuo	13.40 - 14.00	Assessor_5

Min	Rui	11.40 - 12.00	Assessor_1
Mooney	Dermot	11.00 - 11.20	Assessor_3
Mumtaz	Aliza	13.40 - 14.00	Assessor_3
Muntazir	Zayn	10.40 - 11.00	Assessor_3
Murdoch	Ruaridh	10.00 - 10.20	Assessor_4
Nam	Alex	11.00 - 11.20	Assessor_5
Neerukonda	Amey	13.00 - 13.20	Assessor_3
Nilforooshan	Tara	10.00 - 10.20	Assessor_1
Pan	Jingyi	11.40 - 12.00	Assessor_1
Pointon	Freddie	11.20 - 11.40	Assessor_5
Purcell	William	13.20 - 13.40	Assessor_4
Qazi	Safaa	13.40 - 14.00	Assessor_2
Ravisankar	Gautham	13.00 - 13.20	Assessor_3
Rodrigo	Udya	10.00 - 10.20	Assessor_2
Ryder	Aidan	11.20 - 11.40	Assessor_4
Salt	Charlie	10.00 - 10.20	Assessor_5
Shahabuddin	Yousuf	10.40 - 11.00	Assessor_3
Shao	Jiale	11.40 - 12.00	Assessor_3
Sheth	Suryansha	10.40 - 11.00	Assessor_2
Singh	Karanjeet	10.20 - 10.40	Assessor_2
Song	Cici	13.00 - 13.20	Assessor_2
Spawforth	Tim	10.20 - 10.40	Assessor_1
Srikakulam	Veda	13.20 - 13.40	Assessor_2
Sui	Zirun	11.20 - 11.40	Assessor_1
Surtani	Kyara	13.00 - 13.20	Assessor_4
Tam	Yau Yau	13.40 - 14.00	Assessor_5
Taylor-Robinson	Mia	11.20 - 11.40	Assessor_5
Tu	William	11.20 - 11.40	Assessor_3
Vivatanaprasert	Muk	11.00 - 11.20	Assessor_1
Wang	Chengyu	10.20 - 10.40	Assessor_4
Wang	Boxuan	10.40 - 11.00	Assessor_1
Wang	Jason	11.20 - 11.40	Assessor_2
Weng	Zipei	10.00 - 10.20	Assessor_3
Whitaker	Leia	11.20 - 11.40	Assessor_4
Wijeratne	Rhys	10.00 - 10.20	Assessor_4
Wolff	Maxim	13.20 - 13.40	Assessor_4
Xia	Simon	13.00 - 13.20	Assessor_5
Xu	Aaron	10.40 - 11.00	Assessor_1
Xu	Youcheng	11.20 - 11.40	Assessor_3
Xu	James	11.40 - 12.00	Assessor_3
Yin	Unico	13.20 - 13.40	Assessor_3
YU	Siyi	10.20 - 10.40	Assessor_4
Zhang	Jiarui	11.40 - 12.00	Assessor_2
Zhao	Jingyi	10.20 - 10.40	Assessor_3
Zhou	Yuxuan	13.00 - 13.20	Assessor_2
Zhou	Ziqi	13.40 - 14.00	Assessor_4

DE2 Electronics 2 – Final Week Lab Oral
Feedback Form

Students1		Lab Grade for 1:
Student 2		Lab Grade for 2:
Name of Assessor:		Grade on Challenges:

Performance on the Lab Experiments 4, 5 & 6. (use 1 & 2 to indicate individual's performances)

1. Logbook Quality and Effectiveness

Highly effective	<u>Effective</u>	OK	Contrived	Poor
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2. Ability to answer questions from the logbook

Excellent	Good	OK	Poor	Very poor
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3. Effort in completing Lab 4 to 6

Fully engaged Strong evidence	Good engagement Good evidence	Acceptable Engagement	Below expected Engagement	V. poor Engagement
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4. Examiner's opinion on candidates' depth of understanding in general

Broad & deep	Good	Average	Less than average	Poor
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5. Achievement on the Challenges (tick all boxes that apply)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Balancing Segway	Dancing Only	PID motor control	LED or IMU motor	None

Grade on Challenges: _____

Students have returned their Lab Kit: YES NOT YET

FEEDBACK TO STUDENT:
