



UNIVERSITY OF CAPE TOWN  
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD  
DEPARTMENT OF ELECTRICAL ENGINEERING

EEE3095S/EEE3096S Practical 2 Demonstrations  
2022

Total Marks Available: 30

|                    | STUDENT 1 | STUDENT 2 |
|--------------------|-----------|-----------|
| STUDENT SURNAME    | Young     | Gamielien |
| STUDENT FIRST NAME | Fran      | Mogamad   |
| STUDENT NUMBER     | YNGFYNO01 | GMLMOG016 |
| STUDENT SIGNATURE  |           |           |

FLOCLAOOJ

Claire

Fielden

|                        |             |
|------------------------|-------------|
| TUTOR NAME + SIGNATURE | Cameron Ray |
| DATE [YYYY-MM-DD]      | 2022-09-19  |

| Section         | Action + Mark Allocation  | Mark |
|-----------------|---|------|
| Intro           | Introduce yourselves and briefly describe the purpose of the practical/demostration. [3 marks]  | 3    |
| Clock Frequency | Clear screenshot/picture of oscilloscope showing max GPIO toggling frequency. [2 marks]   | 2    |
| Timer           | Show that timer works for 1 second interval by toggling LED. [2 Marks]  | 2    |
| Timer           | [Question] Comment on timer accuracy for longer intervals. How can a better timer be implemented using onboard peripherals? [2 Marks]   | 2    |
| BCD             | Test <code>decToBcd()</code> and <code>bcdToDec()</code> conversion functions work as expected. [4 Marks]   | 4    |
| RTC             | Set time to Tuesday, September 20, 2022, 12:00:00 <del>AM</del> PM GMT+02:00. Fetch time from RTC and display via Putty. Show that RTC maintains time if unplugged. [8 Marks] | 8    |
| Epoch           | Convert RTC time to epoch time and display via Putty. For above date, timestamp is <b>1663675200</b> . [4]  | 0    |
| BCOS            | [Question] Explain why being able to generate delays and having access to current time is vital for embedded systems. [2 Marks]   | 2    |
| General         | Well-written, well commented code. Code uploaded to Git. Sensible variable names, functions in correct places etc. Overall preparedness for demo. [3 Marks]                   | 2    |
| TOTAL           |   | 25   |