

# Embedded Medical Devices

BME554L (Fall 2025)

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| Zephyr & Nordic SoC Overview  | <a href="#">Lecture Notes &amp; Slides</a>   | <a href="#">Completion Survey</a> (Due: TBD) <a href="#">Software Installs &amp; Tutorials</a> (Due: TBD)   |
| Event-Driven State Machines   | <a href="#">Lecture Notes &amp; Slides</a>   | <a href="#">Wireless HRM Event-Driven State Machine Lab</a>   |
| Version Control ( <a href="#">git</a> )                             | <a href="#">Lecture Notes &amp; Slides</a>   | <a href="#">Git Fundamentals Quiz</a> <a href="#">Git Fundamentals Lab</a>                                  |
| C Programming   | <a href="#">Lecture Notes &amp; Slides</a>   | <a href="#">C Programming Quiz</a> <a href="#">C Programming Lab</a> <a href="#">C Programming Lab</a>      |
| Devicetree, GPIO & Callbacks  | <a href="#">Lecture Notes &amp; Slides</a><br><a href="#">Nordic DevAcademy Lesson 2: Reading Buttons &amp; Controlling LEDs</a> | <a href="#">DT/GPIO/CB Lab</a>  |
| Timers & Work Queues<br><a href="#">Threads &amp; Kernel Events</a> | <a href="#">Lecture Notes &amp; Slides</a><br>(Optional) <a href="#">Zephyr RTOS: Beyond the basics</a>                          | <a href="#">Timers Lab</a><br><a href="#">Heartbeat &amp; Kernel Events</a><br><a href="#">Refactor Lab</a> |
| State Machine Framework   | <a href="#">Lecture Notes &amp; Slides</a>   | <a href="#">State Machine Framework</a><br><a href="#">Refactor Lab</a>                                     |
| Debugging   | <a href="#">Debugging DevAcademy Module</a>  | None  |
| Analog-to-Digital Conversion (ADC)                                  | <a href="#">Lecture Notes &amp; Slides</a><br><a href="#">Nordic DevAcademy: ADC</a>   | <a href="#">ADC Lab: Parts I &amp; II</a>   |
| Pulse Width Modulation (PWM)  | <a href="#">Lecture Notes &amp; Slides</a><br><a href="#">Nordic DevAcademy: PWM</a>   | <a href="#">PWM Lab: Parts III &amp; IV</a>   |

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|-------------------------------|---|---|
| UART/I2C/SPI & Sensors        | UART DevAcademy Module<br>& Serial Communication<br>DevAcademy Module | None                                    |
| Bluetooth Low Energy<br>(BLE) | Lecture Notes & Slides<br>DevAcademic: BLE (Lessons<br>1-4)           | ECG & Temperature Sensing<br>BLE Device |