**MONTGOMERY COLLEGE, ROCKVILLE**

**Department of Engineering and the Physical and Computer Sciences.**

**EE 222 Elements of Discrete Signal Analysis**

**Spring 2016 Schedule**

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| --- | --- | --- | --- |
| **Day #** | **Date** | **Lecture** | **Lab** |
| 1 | Jan 25 | College closed | College Closed |
| 2 | Jan 27 | Course Introduction  [Matlab Fundamentals](file:///C:\Users\UABANULO\Documents\AbanuloSite\ES%20240\Class%20Slides\EE222_Matlab_Fundamentals_1.pptx)  [Programming With Matlab](file:///C:\Users\UABANULO\Documents\AbanuloSite\ES%20240\Class%20Slides\EE222_Matlab_Programming_2.pptx) | [Matlab Fundamentals](file:///C:\Users\UABANULO\Documents\AbanuloSite\ES%20240\Class%20Slides\EE222_Matlab_Fundamentals_1.pptx)  [Programming With Matlab](file:///C:\Users\UABANULO\Documents\AbanuloSite\ES%20240\Class%20Slides\EE222_Matlab_Programming_2.pptx) |
| 3 | Feb 1 | L1: [Complex Numbers](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_1.pptx)  Problems: 1.8 | [Lab Assignment 1](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\EE%20222%20Lab%20Files\Laboratory%20Assignment%201.docx)  [Lab Report Format](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\EE%20222%20Lab%20Files\EE_222_LAB_Reports.doc) |
| 4 | Feb 3 | L2: [Lines/ Circles on the Complex Plane; Complex Multiplication and Division](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_2.pptx)  Problems: 1.9 |  |
| 5 | Feb 8 | L3: [Complex Exponentials, Continuous-Time Sinusoids](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_3.pptx)  Problems: 1.11, 1.14, |  |
| 6 | Feb 10 | L4: [Phasors, Discrete-Time Sinusoids](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_4.pptx)  Problems: 1.15, 1.16 1.19, 1.20 |  |
| 7 | Feb 15 | L5: [Sampling of Continuous-Time Sinusoids](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_5.pptx)  Problems: 1.21, 1.22 |  |
| **8** | **Feb 17** | L6: [Aliasing](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_6.pptx)  Problems: 1.21, 1.22 | Practice Test 1 |
| 9 | Feb 22 | **Test 1** |  |
| 10 | Feb 24 | L7: [Matrix-Vector Product, Matrix-Matrix Product](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_7.pptx)  Problems: 2.3, 2.4, 2.5, 2.6, 2.7 | Lab 1 Due  [Lab Assignment 2](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\EE%20222%20Lab%20Files\Laboratory%20Assignment%202.docx) |
| 11 | Feb 29 | L8: [Cascaded Linear Transformations, Matrix Transpose](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_8.pptx)  Problems: 2.9, 2.14 |  |
| 12 | Mar 2 | L9: [Matrix Inversion, Gaussian Elimination](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_9.pptx)  Problems: 2.15, 2.20 |  |
| 13 | Mar 7 | L10: [Inner Products, Norms and Angles; Projection](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_10.pptx)  Problems: 2.24, 2.26, 2.27, 2.33, 2.34 | [Practice Test 2](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Tests\EE222PracticeTest_2.doc) |
| **14** | **Mar 9** | **Test 2** |  |
| March 14, 16: Spring Break, No School | | | |
| 15 | Mar 21 | L11:[Introduction to Fourier Series](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_11.pptx) | Lab 2 Due  [Lab Assignment 3](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\EE%20222%20Lab%20Files\Laboratory%20Assignment%203.doc)  [mfiles](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\EE%20222%20Lab%20Files\Fourier) |
| 16 | Mar 23 | L12: [Fourier Transform](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_12.pptx) |  |
| 19 | Mar 28 | Practical Examples of DFT - Speech Processing |  |
| 20 | Mar 30 | L13: [Introduction to the Discrete Fourier Transforms](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_13(12).pptx) |  |
| 21 | Apr 4 | L14: [Examples of DFT and its Inverse; DFT of a real valued Signal](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_14(13).pptx) |  |
| 22 | Apr 6 | [Practice Test 3](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Tests\EE222PracticeTest_3.doc) |  |
| **23** | Apr 11 | **Test 3** |  |
| 24 | Apr 13 | Practical Applications of Discrete Signal Processing: Speech Processing | Lab 3 Due  [Lab Assignment 4](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\EE%20222%20Lab%20Files\Laboratory%20Assignment%204.doc)  [P\_4.m](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\EE%20222%20Lab%20Files\Lab%20Files\P_4.M)  [P\_4\_9.m](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\EE%20222%20Lab%20Files\Lab%20Files\P_4_9.M) |
| 25 | Apr 18 | L15: [Introduction to Linear Time-Invariant Filters](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_15(21).pptx) |  |
| 26 | Apr 20 | L16: [Response of FIR Filters to exponential inputs](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_16(22).pptx) |  |
| 27 | Apr 25 | L17: [Convolution](file:///C:\Users\UABANULO\Documents\AbanuloSite\EE%20222\Class%20Slides\EE222_Lecture_17(23).pptx) |  |
| **28** | **Apr 27** | **Practice Test 4** |  |
| **29** | **May 2** | **Test 4** |  |
| 30 | May 4 | Final Review |  |
|  | **May 9** | **Final**  **8am – 10am** | Lab 4 due |
|  |  |  |  |