**Syllabus**

Mathematical Physics 1

PHYS-201

**Textbook:** Elementary Linear Algebra with Supplemental Applications,

Howard Anton and Chris Rorres, Eleventh Edition, 2015, Wiley

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| --- | --- |
| **Topics** | **Nb of Weeks** |
| **Chapter 01: Systems of Linear Equations** **1.1 Introduction to Systems of Linear Equations** **1.2 Gaussian Elimination and Gauss-Jordan Elimination** | **3** |
| **Chapter 02: Matrices** **2.1 Operations with Matrices** **2.2 Properties of Matrix Operations** **2.3 The Inverse of a Matrix** **2.4 Elementary Matrices** | **3** |
| **Chapter 03: Determinants** **3.1 The Determinant of a Matrix**  **3.2 Evaluation of a Determinant using Elementary Operations** **3.3 Properties of Determinants**  **3.4 Application of Determinants**  | **2** |
| **Chapter 04: Vector Spaces** **4.1 Vectors in *Rn*** **4.2 Vector Spaces** **4.3 Subspaces of Vector Spaces** **4.4 Spanning Sets and Linear Independence** | **2** |
| **Chapter 05: Dot, inner and Cross Products**  **5.1 Length of a vector** **5.2 Dot Product** **5.3 Inner Product**  **5.4 Cross Product** | **1** |
| **Chapter 06: Linear Transformations** **6.1 Introduction to Linear Transformations** **6.2 Matrices for Linear Transformations** **6.3 Similarity** | **1** |
| **Chapter 07: Eigenvalues and Eigenvectors** **7.1 Eigenvalues and Eigenvectors** **7.2 Diagonalization** | **2** |
| **Total** | **14** |

**Course Evaluation**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Exam*** | ***Marks*** | ***Date*** | ***Time*** |
| **1st Midterm** | **25** | **Monday 17-6-1439H** | **7-8:30 pm** |
| **2nd Midterm** | **25** | **Monday 16-7-1439H** | **7-8:30 pm** |
| **Two Quizzes** | **2x5** |  |  |
| **Final** | **40** | **Monday 21-08-1439** | **8-11 am** |
| **TOTAL** | **100** |  |  |

**Absence Policy:**

1. **Attendance percentage:**
* **Student should attend the course lectures during the 15 weeks of the semester.**
* **Students with absence hours more than 25% of the total course hours will be banned from the Final Exam.**
1. **Absence from Examinations:**
* **If you are unable to attend an examination (first or second midterm) owing to illness or other unavoidable circumstances, you should provide an acceptable evidence of ‘good cause’ for such absence to the competent commission. If the absence is regarded as authorized, student will grant a Makeup Exam only once.**
* **All Makeup Exams will be scheduled at the same time one week before the Final Exam.**
* **No other Makeup Exam will be done in the same semester. If you miss the Makeup Exam, you will have a mark of zero.**

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