# **Course outline for PHYS-109 (Semester 382: Spring 2018)**

**Textbook: PHYSICS FOR THE LIFE SCIENCES, THIRD EDITION.**

ZINKE-ALLMANG NEJAT GALIANO-RIVEROS BAYER CHEN, Cengage, 2017**.**

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| **From Sunday** | **Weeks** | **Chapters** | **Sections** | **Problems** |
| **Part I: Mechanics** | | | | |
| **21/01/18** | **01** | **01: Physics and the Life Sciences** | **1.1-1.7** | **1, 2, 3, 5, 10** |
| **28/01/18** | **02** | **02: Kinematics** | **2.1-2.6** | **1, 2, 5, 9, 23** |
| **04/02/18** | **03** | **03: Forces** | **3.1-3.11** | **1, 7, 25, 28, 31** |
| **11/02/18** | **04** | **04: Newton’s Laws** | **4.1-4.8** | **3, 7, 10, 11, 12** |
| **18/02/18** | **05** | **05: Centre of Mass and Linear Momentum** | **5.1-5.4** | **5, 7, 16, 20, 21** |
| **06: Torque and Equilibrium** | **6.1-6.6** | **1, 3, 23, 26, 27** |
| **25/02/18** | **06** | **07: Energy and Its Conservation** | **7.1-7.4** | **3, 9, 17, 19, 30** |
| **Part II: Thermodynamics and Fluid Mechanics** | | | | |
| **04/03/18** | **07** | **08: Gases** | **8.1-8.7** | **3, 6, 13, 15, 17** |
| **11: Static Fluids** | **11.1-11.6** | **4, 5, 7, 8, 11** |
| **11/03/18** | **08** | **12: Fluid Flow** | **12.1-12.4** | **1, 3, 4, 12, 15** |
| **Part III: Basic Electricity** | | | | |
| **18/03/18** | **09** | **16: Electric Force and Field** | **16.1-16.4** | **1, 11, 13, 17, 24** |
| **25/03/18** | **10** | **17: Electric Energy and Potential** | **17.1-17.5** | **1, 4, 5, 9, 15** |
| **01/04/18** | **11** | **18: The Flow of Charges** | **18.1-18.5** | **1, 3, 5, 7, 13** |
| **Part IV: Atomic, Electromagnetic, and Optical Phenomena** | | | | |
| **08/04/18** | **12** | **19: The Atom** | **19.1-19.3** | **2, 3, 4, 5, 7** |
| **20: Magnetism and Electromagnetic Waves** | **20.1-20.5** | **1, 2, 7, 9, 15** |
| **15/04/18** | **13** | **21: Geometric Optics** | **21.1-21.5** | **2, 7, 11, 13, 17** |
| **22/04/18** | **14** | **22: The Atomic Nucleus** | **22.1-22.3** | **2, 3, 7, 9, 12** |

**Credit hours distribution:**

**4 (3+0+2)**

**3 hours of lectures a week (14 weeks in the semester).**

**2 hours a week for 10 laboratory experiments: Table of forces, Ohm’s law, Lens, Newton’s law, Free fall, Viscosity, Friction, Hook’s Law and Simple Harmonic Motion, Boyle’s Law and Air Cart.**

**Marks distribution:**

1. **First Midterm Exam ------M1---------------------- = 15 marks**
2. **Second Midterm Exam ---M2---------------------- = 15 marks**
3. **Practical Work (Lab.)-----L------------------------ = 30 marks**
4. **Final Exam-------------------F------------------------ = 40 marks**

**Total---------- = 100 marks**

**Chapters Distribution for the Exams:**

**M1 (Monday 19/03/2018 from 7 to 8:30 pm): CHAP: 01-07**

**M2 (Monday 16/04/2018 from 7 to 8:30 pm): CHAP: 08, 11, 12, 16-18**

**F (Monday 07/05/2018 from 8 to 11 am): All the 17 CHAPTERS**

**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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