|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Physics  Course  Matrix | 4th Draft |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Outcome | Learning  Objective | 105 | 105L | 206 | 206L | 167 | 167L | 168 | 168L | 191/291 | 243 | 244 | 245 | 245L | 250 | 308 | 322 | 325 | 336 | 350 | 380 | 384 | 387 | Measure |
| 1.  Students in Physics courses should demonstrate knowledge of the fundamentals of physics and/or or astronomy principles. | Our students will learn to explain and apply their understanding of mechanics | X |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  | X |  |  |  | MFT |
| Our students will learn to explain and apply their understanding of electricity, magnetism, and optics | X |  |  |  |  |  | X |  |  |  |  | X |  |  | X | X |  | X | X |  |  |  |
| Our students will learn to explain and apply their understanding of thermodynamics |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |
| Our students will learn to explain and apply their understanding of quantum mechanics |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  | X |  |  | X |
| Our students will learn to interpret and create mathematical models and/or simulations of physical phenomena. |  |  |  |  | X |  |  |  |  | X | X |  |  |  |  |  |  |  | X | X |  |  |
| Our students will be able to explain and apply their understanding of astronomical phenomena. | X | X | X | X |  |  |  |  |  | X | X |  |  |  |  |  | X |  |  | X |  |  |
| 2. Students who take laboratory courses in physics should be able to (C) conduct experiments using accepted experimental methodologies and/or (D) design experiments to explore problems of practical and theoretical importance | Our students will learn the skills that are necessary to conduct experiments that seek to elucidate physical phenomena |  |  |  |  |  | C |  | C |  |  |  |  | C,D |  |  |  |  |  | C,D |  |  |  | Lab Exam |
| 3.  clearly articulate theoretical and expermental concepts in oral and written presentations. | Students will learn how to make effective oral and written presentations. | X |  |  |  |  | X | X | X | X |  |  |  | X |  |  |  |  |  | X |  |  |  | Presentation |