**Course Plan**

**Qualifying Courses: M.Sc.**

1. **Course Data**

|  |  |
| --- | --- |
| **Course Title** | Advanced Applied Mathematics Code: EMP 414 |
| **Academic Year / Semester** |  2014 / 2015 First Semester |
| **No. of Hours per week** | Lecture: 2 hours Tutorial: -- Total: 2 hours |
| **Course Coordinator** |  |
| **Course Instructor** |  |

1. **Course Contents and Lectures**

|  |  |
| --- | --- |
| **Lecture / Week** | **Topic** |
| 1 | Gamma and beta functions – Bessel functions |
| 2 | Gamma and beta functions – Bessel functions |
| 3 | Gamma and beta functions – Bessel functions |
| 4 | Improper integrals - Line, double and triple integrals |
| 5 | Improper integrals - Line, double and triple integrals |
| 6 | Improper integrals - Line, double and triple integrals |
| 7 | Stoke theorem and Gauss theorem |
| 8 | Stoke theorem and Gauss theorem |
| 9 | Stoke theorem and Gauss theorem |
| 10 | Electromagnetic theory |
| 11 | Electromagnetic theory |
| 12 | Electromagnetic theory |
| 13 | Electromagnetic theory |
| 14 | Electromagnetic theory |

1. **Assessment Details**

|  |  |  |  |
| --- | --- | --- | --- |
| Methods of Assessment | Grading Mode | Weighting % | Outline Details |
| Assignments / Reports | 100 |  33% |  |
| Attendance |  |  |  |
| Final Exam  | 200 | 67% | Week 15: 3 hours |

1. **References**

**Course Notes:**

* Lecture material and training sheets.

**Recommended Books:**

* McGraw Hill Encyclopaedia of Physics (2nd Edition), C.B. Parker, 1994, [ISBN 0-07-051400-3](http://en.wikipedia.org/wiki/Special%3ABookSources/0070514003).
* Quantum Mechanics, E. Abers, Pearson Ed., Addison Wesley, Prentice Hall Inc, 2004, [ISBN 978-0-13-146100-0](http://en.wikipedia.org/wiki/Special%3ABookSources/9780131461000)