**Course outline for Phys404 (Mathematical Physics III)**

(Sem2-1437-36, 2016)

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| **Week** | **Topic of the week** |
| 1 | Special Functions: Gamma Function (Factorial function) |
| 2 | Special Functions: Gamma Function (Factorial function) |
| 3 | Special Functions: Beta Function |
| 4 | Bessel Functions |
| 5 | Bessel Functions |
| 6 | Legendre Functions |
| 7 | Hermite Functions |
| 8 | Laguerre Functions |
| 9 | Fourier Series |
| 10 | Fourier Series |
| 11 | Fourier transforms |
| 12 | Fourier transforms |
| 13 | Laplace transforms |
| 14 | Laplace transforms |

**Marks distribution:**

First midterm exam…………………………………..20 marks

Second midterm exam……………………………….20 marks

Class activities…………….………………………....10 marks

Clikers quizzes……………………………………….10 marks

Final exam……………………………………………40 marks

Total…………………………………………………100 marks

**Textbook:**

Arfken and Weber, Mathematical Methods for Physicists, 6th edition, Elsevier (2006).