**PhD Physics course at Bari University (XXXIII Cycle)**

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| **Title** | Differential equations and physical phenomena |
| **Proponent** | SaverioPascazio |
| **# CFU**  **(1 CFU = 8 hours)** | 2 |
| **Schedule** | Eight two-hour lectures between March and July 2018 |
| **Brief Summary of the course** | An important part of the world in which we live can be understood in terms of differential equations. We present here an introduction to this topic and an elementary treatment of a selection of differential equations. Emphasys is on solutions and applications to problems from the physical sciences and engineering. |
| **Programme** | Ordinary differential equation.  Vector fields.  Linear and quasilinear equations.  Partial differential equations.  Characteristics.  Laplace equation.  Wave equation.  Heat equation. |
| **Recommended texts** | E. C. Zachmanoglou and D. W. Thoe, Introduction to PartialDifferentialEquations with Applications (Dover Publications, 1987) |
| **Assessment methods** | Final report onselectedtopic |