# University of Pretoria Yearbook 2017

# Adaptive systems 732 (ETA 732)

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| **Qualification** | Postgraduate |
| **Faculty** | Faculty of Engineering, Built Environment and Information Technology |
| **Module credits** | 32.00 |
| **Prerequisites** | Digital communications ETD 732 |
| **Contact time** | 32 contact hours per semester |
| **Language of tuition** | Module is presented in English |
| **Academic organisation** | Electrical, Electronic and Com |
| **Period of presentation** | Semester 1 or Semester 2 |

**Module content**

Adaptive systems ETA732 covers the fundamentals of adaptive systems within the context of adaptive signal processing. The basic linear filtering problem with associated models and filter structures is introduced. Furthermore, the topics of stationary processes and models, spectrum analysis, eigen analysis, Wiener filters, linear prediction, Kalman filters, stochastic gradient methods and least squares methods are covered. Blind adaptive methods are presented within the context of the blind deconvolution problem. Lattice filter methods are covered as an extention to the basic topics of this course. Adaptive systems ETA732 will supply the student with valuable tools for the solution of statistical detection and estimation problems in the diverse fields of communications, control, radar, sonar, seismology and biomedical engineering.