DEPARTMENT OF PHYSICS
SCHOOL OF MATHEMATICAL AND PHYSICAL SCIENCES
CENTRAL UNIVERSITY OF KERALA
(Established under the Central Universities Act 2009)
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Minutes of the Meeting: PG Board of Studies

29.07.2016

Members Present:

1. Professor K J Thomas (Chairman)
2. Professor P. Kolandaivel, Bharathiar University
3. Dr. Alok Sharan, Pondicherry University
4. Dr. Vincent Mathews
5. Vijay Shenoy, IISc, Bangalore (on Skype)

The meeting began at 11.00 AM on 29.07.2016 in the office of the Dean, SPS. The members of the board have discussed and deliberated on the content of the Programme Structure. After the deliberations, the Board of Studies has suggested some modifications to the existing syllabus. The modified programme structure is approved and enclosed herewith.

The programme structure with the modified syllabus will be in force for students admitted in 2016-17 academic year onwards.

Professor P. Kolandaivel

Dr. Alok Sharan

Dr. Vincent Mathew

Professor K J Thomas

PHY5205 Experimental Physics II

Course Code	PHY5205	Semester	II
Course Title	*Condensed Matter Physics*		
Credits	4	Type	Core

Course Outcome

In Students achieve ability to:

1. Set up testing strategies and select proper instruments to evaluate performance characteristics of electronic circuit

2. hands on training on different types of electronic circuit and analyse their operation at different operating conditions

Course Structure

Theory: Measurement and instrumentation. Transducers. Bridge circuits. Noise reduction techniques. 555 timer and PLL applications. Active filters.

General Physics: Thermo-luminescence, optoelectronics devices, dielectric constant, Faraday rotation, magnetic hysteresis, Franck-Hertz experiment, Compton effect, Balmer series, GM counter etc.

Electronics: Instrumentation amplifier, active filters, multivibrators, waveform generation, PLL: capture range and lock range, FM modulation and detection, transducer with bridge, AC bridge circuits, A/D and D/A converter, precision voltmeter, peak detector etc.

(Selection of experiments shall be done by instructor)

Suggested Books

1. D.W. Preston and E.R. Dietz, The Art of Experimental Physics, Wiley (1991)
2. R.A. Dunlap, Experimental Physics: Modern Methods, Oxford (1997)
3. A.C.Melissinos and J. Napolitano, Experiments in Modern Physics, Academic Press (2003)
4. S. Franco, Design with Operational Amplifiers, McGraw Hill (2002)
5. M.M.S. Anand and L.K.Maheshwari, Laboratory Experiments and PSpice Simulation in Analogue Electronics, PHI (2006)
6. A.Peyton, Analogue Electronics with Op-Amps, Cambridge (1993)
7. T.H. O'Dell, Circuits for Electronic Instrumentation, Cambridge (2005)