COMSATS Institute of Information Technology

Chak Shahzad, Islamabad

(Department of Physics)

May 10, 2011

Subject: <u>Scheme of Studies – MS (Physics) for Batch FALL 2009</u>

Reference to your letter no. CIIT/GC/SOS-MS/ISB-11/18598 dated March 21, 2011, please find enclosed herewith approved scheme of studies – MS (Physics) for batch FALL 2009 under notification no. CIIT-Reg/Notif163/11/824 dated May 04, 2011.
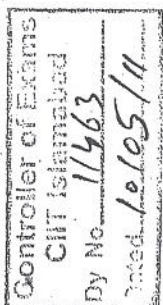
Dr. Ishaq Ahmed
Head of the Department
Department of Physics

<u>Assistant Controller of Examination</u>

Cc:
1. Additional Registrar (Acad)
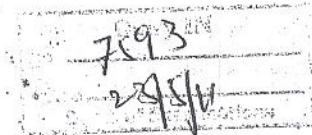2. Controller of Examination
3. I/C Academics

COMSATS Institute of Information Technology
Principal Seat, Islamabad.
Registrar Office

No: CIIT-Reg/Notif/63/11/824

May 4, 2011

<u>Notification</u>

In continuation to the letter # CIIT/DGS-10/2513/12, dated March 12, 2010 and consequent upon the request of Chairman Department of Physics, duly endorsed by the Dean Faculty of Science, the following Scheme of Studies of MS in Physics Program is hereby notified for the students admitted in Session Fall 2009:
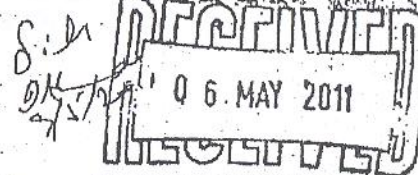
Core Courses

Course Code	Course Title	Credit Hours	Pre-requisite (s)
PHY503	Mathematical and Computational Methods in Physics	3(3, 0)	
PHY504	Advanced Quantum Mechanics	3(3, 0)	
PHY509	Advanced Electrodynamics	3(3, 0)	
PHY565	Graduate Laboratory	3(3, 0)	

Elective Courses

Course Code	Course Title	Credit Hours	Pre-requisite (s)
PHY501	Quantum Computation-I	3(3, 0)	
PHY505	Electrodynamics	3(3, 0)	
PHY506	Applied Quantum Mechanics	3(3, 0)	
PHY507	Statistical Mechanics	3(3, 0)	
PHY508	Relativistic Quantum Mechanics	3(3, 0)	
PHY510	Introduction to Quantum Field Theory-I	3(3, 0)	
PHY612	Advanced Statistical Mechanics	3(3, 0)	
PHY513	Introduction to Particle Physics Phenomenology	3(3, 0)	
PHY514	Group Theory	3(3, 0)	
PHY515	Gravitation and Cosmology	3(3, 0)	
PHY516	Standard Model (SWG)	3(3, 0)	
PHY517	Particle Physics I	3(3, 0)	
PHY520	Material Science-I	3(3, 0)	
PHY522	Vacuum Science & Technology	3(3, 0)	
PHY523	Introduction to Nanoscience & Technology	3(3, 0))	
PHY524	Surface Physics	3(3, 0)	
PHY525	Nonconventional Energy Resources	3(3, 0)	
PHY526	Conducting Polymers	3(3, 0))	
PHY527	Quantum Optics-I	3(3, 0)	
PHY530	Solid State Electronic Devices	3(3, 0)	
PHY531	Physics of Semiconductors & Devices	3(3, 0)	

Code	Course	Credit	Prerequisite
PHY532	Physics of Laser		
PHY534	Optical Communication & Network Design and Simulation	3(3, 0)	
PHY535	Electronic Materials Processing	3(3, 0)	
PHY537	Microsystem Technology	3(3, 0)	
PHY538	Optics Laboratory	3(3, 0)	
PHY540	Plasma Physics-I	3(3, 0)	
PHY541	Plasma Physics-II	3(3, 0)	
PHY542	Semiconductor Power Devices	3(3, 0)	
PHY550	Physics of Magnetism	3(3, 0)	
PHY551	Physics of Microfabrication Technology	3(3, 0)	
PHY555	Fundamentals of Optical Fibers & Optical Signal Processing	3(3, 0)	
PHY556	Optical Fiber Devices and Sensors	3(3, 0)	
PHY557	Atomic and Molecular Physics	3(3, 0)	
PHY558	Laser Systems and Engineering	3(3, 0)	
PHY559	Applied Photonics	3(3, 0)	
PHY560	Errors and Data Analysis	3(3, 0)	
PHY561	Material Processing with Laser	3(3, 0)	
PHY570	Nuclear Physics	3(3, 0)	
PHY572	Radiation Detection & Measurements	3(3, 0)	
PHY573	Principle, Method and Applications of Nuclear Tracks	3(3, 0)	
PHY574	Radiation Protection and Health Physics	3(3, 0)	
PHY575	Environmental Radiation Dosimetry	3(3, 0)	
PHY576	Radiation Laboratory	3(3, 0)	
PHY580	Environmental Physics	3(3, 0)	
PHY581	Heavy Ion Physics	3(3, 0)	
PHY582	Medical Physics	3(3, 0)	
PHY583	Geo Physics	3(3, 0)	
PHY602	Quantum Computation II	3(3, 0)	
PHY605	Particle Collisions	3(3, 0)	PHY501
PHY606	Quantum Chromo Dynamics	3(3, 0)	PHY 517, PHY 508 PHY 570
PHY610	Integrated Optics	3(3, 0)	PHY 510,PHY 510
PHY611	Quantum Field Theory II	3(3, 0)	PHY 531,PHY 532
PHY621	Material Science II	3(3, 0)	PHY510
PHY617	Gravitation and Cosmology	3(3, 0)	
PHY518	Particle Physics II	3(3, 0)	PHY514
PHY620	Condensed Matter Theory	3(3, 0)	PHY517
PHY622	Modern Semiconductor Structures	3(3, 0)	PHY504
PHY626	Thermal Transport Mechanics	3(3, 0)	PHY504, PHY531
PHY628	Quantum Optics II	3(3, 0)	PHY504, PHY354
PHY640	Advances in Thin Film Technology	3(3, 0)	PHY527
		3(3, 0)	PHY520

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PHY650	Advanced Topics in Magnetism	3(3, 0)	PHY550
PHY662	Ultrashort Lasers & Optics	3(3, 0)	PHY532
PHY665	Photonic Mesoscopic Systems	3(3, 0)	PHY531
PHY705	Finite Temperature and Density Field Theory for High Energy	3(3, 0)	PHY510
PHY707	Physics of Early Universe	3(3, 0)	PHY617
PHY708	Neutrino Physics	3(3, 0)	PHY517
PHY709	Supersymmetry	3(3, 0)	PHY510, PHY517
PHY710	Kinematics of Nuclear Reactions of High Energies	3(3, 0)	PHY517, PHY508 PHY570
PHY719	Quark Gluon Plasma (QGP)	3(3, 0)	PHY510, PHY517

Course Code	Course Title	Credit Hours	Pre-requisite (s)
PHY599	Research Thesis	6(0, 6)	

Niaz Ahmed Khaskheli
Additional Registrar

Distribution:

1. Dean Faculty of Science, CIIT.
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5. Controller of Examinations, CIIT.
6. Additional Registrar (Academics) CIIT, Islamabad Campus.
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CC:

1. Registrar, CIIT
2. PS to Rector