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

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No: CIIT-Reg/Notif-644/12/968 July 3, 2012

NOTIFICATION

Scheme of Studies of Bachelor of Science (BS) in Chemistry

It is hereby notified that the Academic Council in its 13th meeting held on June 04, 2012 approved the following scheme of studies of Bachelor of Science (BS) in Chemistry program with effect from Fall 2012 at CIIT system:

i. Minimum Duration	04 years
ii Minimum No. of Semesters	08
iii. No. of Credit Hours in each Semester	12-19

iv. Course Work

	Min No. of Courses	Min No. of Credit Hours
i. Core Courses (List attached)	34	113
ii. Elective Courses(List attached)	06	20
Total No. of Courses	**40**	
Total No. of Credit Hours		**133**

v. Note:

i. Students have to study 4 elective courses of 03 credit hours and 2 elective courses of 04 credit hours from the list of electives

ii. Students will opt elective courses to form one of the following specialization on the recommendation of their respective supervisor:
   a) Physical Chemistry
   b) Analytical Chemistry
   c) Inorganic Chemistry
   d) Organic Chemistry
   e) Industrial Chemistry
   f) Environmental Chemistry

iii. The Regulations relating to Undergraduate Degree Programs approved by the Competent Authority and amended from time to time shall be applicable.

This issues with the approval of the Competent Authority.

Nadeem Uddin Qureshi
Additional Registrar

Encl: (pages 04 in total including this page)

Distribution:

1. Dean Faculty of Science, CIIT
2. All Directors CIIT System
3. Chairperson, Department of Chemistry, CIIT
4. All Incharges, Academic Sections, CIIT Campuses
5. All HoD's/Incharges, Department of Chemistry, CIIT Campuses
6. Controller of Examinations, CIIT
7. All Incharges, Examination Departments, CIIT Campuses

CC:

1. PS to Rector
2. PA to Registrar

LIST OF CORE COURSES

Sr #	Course Code	Course Title	Credit Hours	Pre-requisites
1.	BIO100	Fundamentals of Biology	3(2, 1)	
2.	BIO132	Principles of Biochemistry	4(3, 1)	
3.	BIO150	Fundamentals of Microbiology	3(2, 1)	BIO100
4.	BIO232	General Physiology	3(3, 0)	
5.	BIO240	Introductory Molecular Biology	3(3, 0)	BIO132
6.	BIO251	Microbiology and Immunology	4(3, 1)	
7.	BIO320	Fundamentals of Environmental and Biotechnology	4(3, 1)	BIO240
8.	BIO345	Essential Techniques in Biochemistry and Molecular Biology	3(0, 3)	BIO240
9.	CHM101	General Chemistry	3(3, 0)	
10.	CHM121	Chemistry of Environment	3(2, 1)	CHM101
11.	CHM141	Fundamentals of Organic Chemistry	3(2, 1)	CHM101
12.	CHM211	Introduction to Physical Chemistry	3(2, 1)	CHM101
13.	CHM231	Basic Inorganic Chemistry	3(2, 1)	CHM101
14.	CHM312	Physical Chemistry	4(3, 1)	CHM211
15.	CHM321	Introduction to Analytical Chemistry and Data Handling	3(2, 1)	CHM101
16.	CHM322	Classical Methods in Analytical Chemistry	4(3, 1)	CHM211
17.	CHM332	Inorganic Chemistry	4(3, 1)	CHM231
18.	CHM342	Organic Chemistry	4(3, 1)	CHM141
19.	CHM351	Introduction to industrial Chemistry	3(2, 1)	CHM101
20.	CHM352	Industrial Chemistry	4(3, 1)	CHM351
21.	CHM499	Advanced Practical / Research	6(0, 6)	
22.	CHM645	Research Methodology and Chemical Data Handling	3(3, 0)	HUM102
23.	CSC101	Introduction to Computing	3(2, 1)	
24.	ENV273	Environmental Toxicology	3(2, 1)	CHM121, ENV101
25.	HUM100	English Comprehension and Composition	3(3, 0)	
26.	HUM102	Report Writing Skills	3(3, 0)	HUM100
27.	HUM103	Communication Skills	3(3, 0)	HUM100
28.	HUM110	Islamic studies	3(3, 0)	
29.	HUM111	Pakistan Studies	3(3, 0)	
30.	HUM200	Business Communication workshop	3(3, 0)	HUM100
31.	HUM220	Introduction to Psychology	3(3, 0)	
32.	HUM431	German	3(3, 0)	
33.	MTH100	Mathematics I	3(3, 0)	
34.	MTH161	Introduction to Statistics	3(3, 0)	

LIST OF ELECTIVE COURSES

Sr. #	Course Code	Course Title	Credit Hours	Pre-requisites
1.	CHM411	Chemical Thermodynamics and Kinetics	4(3, 1)	CHM211, CHM312
2.	CHM412	Electrochemistry and Group Theory	4(3, 1)	CHM211, CHM312
3.	CHM413	Quantum Chemistry and Spectroscopy	3(3, 0)	CHM211, CHM312
4.	CHM414	Surface and Catalytic Chemistry	3(3, 0)	CHM211, CHM312
5.	CHM415	Photochemistry and Polymers	3(3, 0)	CHM211, CHM312
6.	CHM416	Statistical Thermodynamics and Nuclear Chemistry	3(3, 0)	CHM211, CHM312
7.	CHM421	Potentiometry	3(3, 0)	CHM312
8.	CHM422	Polarographic and other related techniques	3(3, 0)	CHM312
9.	CHM423	Molecular Spectroscopy	4(3, 1)	CHM322
10.	CHM424	Atomic Spectroscopy	4(3, 1)	CHM322
11.	CHM425	Thermal Analytical Techniques	3(3, 0)	CHM322
12.	CHM426	Modern Separation Techniques	3(2, 1)	CHM322
13.	CHM431	Advanced Inorganic Chemistry	4(3, 1)	CHM332
14.	CHM432	Spectroscopic Methods of Analysis	4(3, 1)	CHM332
15.	CHM433	Organometallic Chemistry	3(3, 0)	CHM332
16.	CHM434	Polymer Chemistry	3(3, 0)	CHM332
17.	CHM435	Nuclear Chemistry	3(3, 0)	CHM332
18.	CHM436	Magneto Chemistry	3(3, 0)	CHM332
19.	CHM441	Structure Elucidation of Natural Products	3(3, 0)	CHM141, CHM342
20.	CHM442	Organic Synthesis	4(3, 1)	CHM141, CHM342
21.	CHM443	Reaction Mechanism	4(3, 1)	CHM141, CHM342
22.	CHM444	Heterocyclic Chemistry	3(3, 0)	CHM141, CHM342
23.	CHM445	Synthetic Applications of Name Reactions	3(3, 0)	CHM141, CHM342
24.	CHM446	Chemistry and Biosynthesis of Secondary Metabolites	3(3, 0)	CHM141, CHM342
25.	CHM451	Industrial Processes and Quality control	3(3, 0)	CHM351
26.	CHM452	Iron and Coal Industries	4(3, 1)	CHM351
27.	CHM453	Advanced Industrial Chemistry	3(3, 0)	CHM351
28.	CHM454	Polymer Industry	4(3, 1)	CHM351
29.	CHM455	Introduction to Catalysis and Industrial Application	3(3, 0)	
30.	CHM456	Introduction to Nano science and Nanotechnology	3(3, 0)	

	Course Code	Course Title	Credit Hours	Pre-requisites
31.	CHM461	Atmosphere Chemistry	4(3, 1)	CHM322, ENV121
32.	CHM462	Hydrosphere Chemistry	4(3, 1)	CHM322, ENV121
33.	CHM463	Lithosphere Chemistry	3(3, 0)	CHM322, ENV121
34.	ENV361	Basic Environmental Impact Assessment	3(3, 0)	CHM322, ENV121
35.	ENV413	Applied Environmental Biotechnology	3(2, 1)	BIO320, CHM322, ENV121
36.	ENV433	Environmental Hazards and Management of Natural Disasters	3(3, 0)	ENV342