

COMPUTER SCIENCE & ENGINEERING

COURSES/CREDIT DISTRIBUTION OF COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

I. Basic Science Courses (BSC)

Semester I					
Course code	Course name	L	T	P	Credits
PYN101	Oscillation and Optics	3	1	0	4
Semester II					
Course code	Course name	L	T	P	Credits
MAN105	Vector Calculus Fourier Series & Laplace Transform	3	1	0	4
PYN106	Electromagnetic Field Theory	3	1	0	4

II. Engineering Science Courses (ESC)

Semester II					
Course code	Course name	L	T	P	Credits
ESC205	Introduction to Electronics	3	1	0	4
Semester III					
Course code	Course name	L	T	P	Credits
ESC206	Basic Electrical Sciences	3	0	2	4
Semester IV					
ESC101	Engineering Drawing	02	00	04	4

III. Departmental Core Courses (DCC)

Course code	Course name	L	T	P	Credits
CSN101	Introduction to Computer Science & Engineering	0	0	0	2
CSN102	Data Structures	3	0	2	4
CSN103	Digital Electronic and Logic Design	3	0	2	4
CSN201	Discrete Structures for Computer Science	3	1	0	4
CSN202	Computer Architecture and Organization	3	1	0	4
CSN203	Object Oriented Programming	3	0	2	4
CSN204	Analysis and Design of Algorithms	3	1	0	4
CSN205	Technical Communication	0	0	3	2
CSN206	Engineering Analysis and Design	3	1	0	4
CSN207	Microprocessor and its Applications	3	0	2	4
CSN208	Database Management Systems	3	0	2	4
CSN209	Operating Systems	3	0	2	4
CSN210	Computer Networks	3	0	2	4
CSN301	Theory of Computation	3	1	0	4
CSN302	Software Engineering	3	0	2	4
CSN303	Web Technologies	3	0	2	4
CSN304	Computer Graphics	3	0	2	4
CSN305	Artificial Intelligence	3	1	0	4

IV. Departmental Elective courses (DEC)

Group-I

Course code	Course name	L	T	P	Credits
CSN401	Compiler Design	3	1	0	4
CSN402	Software Testing	3	0	2	4
CSN403	Soft Computing	3	0	2	4
CSN404	Digital Image Processing	3	0	2	4
CSN405	Cloud computing	3	1	0	4

Group-2*

Discipline Specialization 1

Course code	Course name	L	T	P	Credits
CSN406	Agile Software Development	3	0	2	4

CSN407	Natural Language Processing	3	0	2	4
CSN408	Software Project Management	3	0	2	4
CSN409	Big data Analytics	3	0	2	4
CSN410	Bioinformatics	3	0	2	4

Discipline Specialization 2

Course code	Course name	L	T	P	Credits
CSN411	Network Security	3	0	2	4
CSN412	Applied cryptography	3	0	2	4
CSN413	Computer crime investigation and forensics	3	0	2	4
CSN414	Biometric Security	3	0	2	4

Discipline Specialization 3

Course code	Course name	L	T	P	Credits
CSN415	Advanced Computer networks	3	0	2	4
CSN416	Advanced wireless and mobile networks	3	0	2	4
CSN417	Wireless Sensor Networks	3	0	2	4
CSN418	Mobile computing	3	0	2	4

*Offering of discipline specializations under Group 2 of Elective Courses is optional.

V. Open elective Courses (OEC)

Course code	Course name	L	T	P	Credits
CSN461	Object Oriented Programming	3	0	2	4
CSN462	Operating Systems	3	0	2	4
CSN463	Web Technologies	3	0	2	4

VI. Departmental Honors Courses (DHC)

Course code	Course name	L	T	P	Credits
CSN421	Machine Learning	3	1	0	4
CSN422	Advanced database systems	3	1	0	4
CSN423	Advanced software engineering	3	1	0	4
CSN424	Advanced algorithm design and analysis	3	1	0	4
CSN425	Advanced computer architecture	3	1	0	4

VII. Minor Specialization Courses (MSC)

Course code	Course name	L	T	P	Credits
CSN431	Data Structures and algorithms	3	0	2	4
CSN432	Computer Networks	3	0	2	4
CSN433	Computer crime investigation and forensics	3	0	2	4
CSN434	Database systems	3	0	2	4
CSN435	Software Engineering	3	0	2	4

TEACHING SCHEME FOR FIRST YEAR B.E. COMPUTER SCIENCE AND ENGINEERING

FIRST YEAR

Semester I

Course code	Subject	Credits	Category
MAN101	Mathematics-I	4	BSC
CSN101	Introduction to Computer Science and Engineering	2	DCC
CSN104/ CSN105	Computer Programming (Basic/Advance)	4	ESC
PYN101	Oscillation and Optics	4	BSC
HSS102	Communication Skills (Basic/Advanced)	2	HSSC
GSC101	Environmental Sciences	3	GSC
	Total	19	

Semester II

Course code	Subject	Credits	Category
MAN105	Vector Calculus Fourier Series & Laplace Transform	4	BSC
HSS101	Ethics and Self-Awareness	2	HSSC
PYN106	Electromagnetic Field Theory	4	BSC
ESC205	Introduction to Electronics	4	ESC
CSN102	Data Structures	4	DCC
CSN103	Digital Electronic and Logic Design	4	DCC
	Total	22	

SECOND YEAR

Semester I

Course code	Subject	Credits	Category
ESC206	Basic Electrical Sciences	4	ESC
CSN201	Discrete Structures for Computer Science	4	DCC
CSN202	Computer Architecture and Organization	4	DCC
CSN203	Object Oriented Programming	4	DCC
CSN204	Analysis and Design of Algorithms	4	DCC
HSS201	Economics	3	HSSMEC
CSN205	Technical Communication	2	DCC
	Total	25	

Semester II

Course code	Subject	Credits	Category
CSN206	Engineering Analysis and Design	4	DCC
ESC101	Engineering Drawing	4	ESC
CSN207	Microprocessor and its Applications	4	DCC
CSN208	Database Management Systems	4	DCC
CSN209	Operating Systems	4	DCC
CSN210	Computer Networks	4	DCC
CSN221	Educational Tour	Non-credit	DCC
	Total	24	

THIRD YEAR

Semester I

Course code	Subject	Credits	Category
CSN301	Theory of Computation	4	DCC
CSN302	Software Engineering	4	DCC
CSN303	Web Technologies	4	DCC
CSN304	Computer Graphics	4	DCC
CSN305	Artificial Intelligence	4	DCC
CSN321	Minor Project	4	DCC
	Total	24	

Semester II

Course code	Subject	Credits	Category
CSN331	Summer Internship*	20	DCC
	Total	20	

*Internship Seminar presentations may be held a week before the date of Registration in Semester-I of Fourth Year

FOURTH YEAR

Semester I

Course code	Subject	Credits	Category
	Open Elective	4	GSEC/MEC
	Departmental Elective Course – I	4	DEC
	Departmental Elective Course – II	4	DEC
CSN441	Major Project	2*	DCC
	Minor Specialization Course – I Departmental Honours Course – I	4	MSC/DHC
	Minor Specialization Course – II Departmental Honours Course – II	4	MSC/DHC
	Open Elective	4	GSEC/MEC

*Evaluation needs to be carried out in next semester

Semester II

Course code	Subject	Credits	Category
	Financial Management	3	
	Departmental Elective Course – III	4	DEC
CSN451	Major Project	6	DCC
	Minor Specialization Course – III Departmental Honour Course – III	4	MSC/DHC
	Minor Specialization Course - IV Departmental Honour Course – IV	4	MSC/DHC
	Minor Specialization Course - V Departmental Honour Course – V	4	MSC/DHC
	Total	13/25	DHC

COURSES OFFERED BY APPLIED SCIENCE DEPARTMENT TO ALL DEPARTMENTS

I. Departmental Elective courses (DEC)

Group-I

Course code	Course name	L	T	P	Credits
CHN 401	Modern Instrumental Methods Of Chemical Analysis	3	1	0	4
PYN 401	Advanced Physics	3	1	0	4
PYN 402	Crystal Physics	3	1	0	4
PYN 403	Solid State Physics	3	1	0	4
MAN 401	Operation Research	3	1	0	4
MAN 402	Optimization Techniques	3	1	0	4

II. Minor Specialization Courses For 7th Semester

Course Code	Course Name	L	T	P	Credits
Humanities Section					
HSM 401	Principles of Management	2	2	0	4
HSM 402	Business Environment and Business Laws	2	2	0	4
HSM 431	Managing Innovation and Change	2	2	0	4
Chemistry Section					
CHN 431	Inorganic Chemistry	3	0	3	4
CHN 432	Organic Chemistry	3	0	3	4
Physics Section					
PYN 431	Quantum Mechanics	3	1	0	4
PYN 432	Statistical Physics	3	1	0	4
Mathematics Section					
MAN 431	Algebra	3	1	0	4
MAN 432	Number Theory	3	1	0	4

Minor Specialization Courses For 8th Semester

Course Code	Course Name	L	T	P	Credits
Humanities Section					
HSM 404	Financial Management	2	2	0	4
HSM 405	Marketing Management	2	2	0	4
HSM 406	Human Resource Management	2	2	0	4
HSM 432	Business Research	2	2	0	4
Chemistry Section					
CHN 433	Physical Chemistry / Analytical Chemistry	3	1	0	4
CHN 434	Environmental Chemistry	3	1	0	4
CHN 435	Recent Advances in Chemical Sciences	3	1	0	4
Physics Section					
PYN 433	Nuclear Physics	3	1	0	4
PYN 434	Experimental Nuclear Physics	3	1	0	4
PYN 435	X-Ray Crystallography	3	1	0	4
Mathematics Section					
MAN 433	Fourier Series and Integral Transforms	3	1	0	4
MAN 434	Calculus of Variations	3	1	0	4
MAN 435	Algebraic Coding Theory	3	1	0	4