



B.Tech CSE Syllabus

**Baba Ghulam Shah Badshah University
Rajouri (J&K)-185131**

**Syllabus First to Eighth Semester
B. Tech. Degree Course**

(2018-2022)

**Department of Computer Science & Engineering
School of Engineering and Technology
Baba Ghulam Shah Badshah University
Rajouri (J&K)-185234**



Semester-I

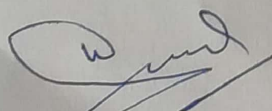
Theory Courses

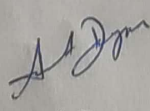
Course Code	Title	Credits	Scheme of Exam				Hrs./Week		
			Duration (Hrs.)	IA	UE	Total Marks	L	T	P
BSC-CSE-101	Mathematics-I	4	3	40	60	100	3	1	0
ESC-CSE-101	Basic Electrical Engineering	3	3	40	60	100	3	0	0
BSC-CSE-102	Engineering Chemistry	4	3	40	60	100	3	1	0
BSC-CSE-103	Engineering Physics	4	3	40	60	100	3	1	0
MC-CSE-101	Environmental Science*	0	3	40	60	100	2	0	0
Total		15		160	240	400			

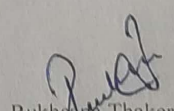
Laboratory Courses

ESC-CSE-111	Basic Electrical Lab	1	2	25	25	50	0	0	2
BSC-CSE-111	Engineering Chemistry Lab	1	2	25	25	50	0	0	2
BSC-CSE-112	Engineering Physics Lab	1	2	25	25	50	0	0	2
ESC-CSE-112	Engineering Graphics **	3	3	40	60	100	1	0	4
MC-CSE-111	Induction Program	0	-	0	0	0	0	0	2
Total		6		115	135	250			
Total (Theory + Lab)		21		275	375	650			

- N.B:** 1. *Environmental science course is non-credits and the student has to get at-least minimum pass marks to qualify the subject. Non-credits course marks are not included in total marks.
 2. ** The examination pattern of Engineering Graphics Lab shall be same as of other theory courses.
 3. Induction training is also non-credits and the student has to get at-least qualifying attendance to qualify the subject. The student has to qualify this course by attending the training which will be verified by concerned teacher.


Khalil Ahmed


Amit Dogra


Rukhsana Thaker



Semester-II

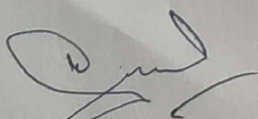
Theory Courses

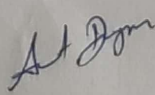
Course Code	Title	Credits	Scheme of Exam			Hrs./Week			
			Duration (Hrs.)	IA	UE	Total Marks	L	T	P
BSC-CSE-201	Mathematics-II	4	3	40	60	100	3	1	0
ESC-CSE-201	Basic Electronics	3	3	40	60	100	3	0	0
ESC-CSE-202	Engineering Mechanics	3	3	40	60	100	3	0	0
HSMC-CSE-201	Communication Skills	2	3	40	60	100	2	0	0
ESC-CSE-203	Computer Fundamentals & Programming	4	3	40	60	100	3	1	0
MC-CSE-201	Indian Constitution*	0	3	40	60	100	2	0	0
Total		16		200	300	500			

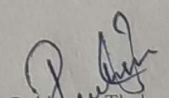
Laboratory Courses

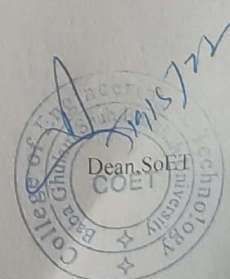
ESC-CSE-211	Basic Electronics Lab	1	2	25	25	50	0	0	2
HSMC-CSE-211	Comm. Skills Lab	1	2	25	25	50	0	0	2
ESC-CSE-212	Engineering Mechanics Lab	1	2	25	25	50	0	0	2
ESC-CSE-213	Computer Fundamentals & Programming Lab	1	2	25	25	50	0	0	2
ESC-CSE-214	Workshop Practice	2	-	50	0	50	0	0	4
Total		6		150	100	250			
Total (Theory + Lab)		22		350	400	750			

N.B: 1. *Indian constitution course is non-credits and the student has to get at-least minimum pass marks to qualify the subject. Non-credits course marks are not included in total marks.


Khalil Ahmed


Amit Dogra


Rukhsana Thaker



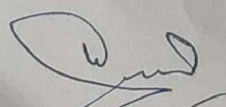
Semester-III

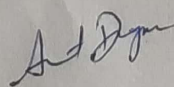
Theory Courses

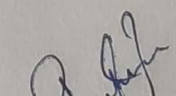
Course Code	Title	Credits	Scheme of Examination				Hrs./Week		
			Duration (hrs)	IA	UE	Total Marks	L	T	P
BSC-CSE-301	Mathematics-III	4	3	40	60	100	3	1	0
PCC-CSE-301	Data Structures Using C	4	3	40	60	100	3	1	0
PCC-CSE-302	Object Oriented Programming Using C ⁺⁺	4	3	40	60	100	3	1	0
PCC-CSE-303	Software Engineering	3	3	40	60	100	3	0	0
ESC-CSE-301	Digital Logic Design	4	3	40	60	100	3	1	0
HSMC-CSE-301	Entrepreneurship Development and Management	3	3	40	60	100	3	0	0
Total		22		240	360	600			

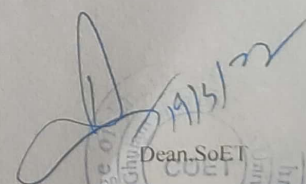

Laboratory Courses

PCC-CSE-311	Data Structures Using C Lab	1	2	25	25	50	0	0	2
PCC-CSE-312	Object Oriented Programming Using C ⁺⁺ Lab	1	2	25	25	50	0	0	2
ESC-CSE-311	Digital Logic Design Lab	1	2	25	25	50	0	0	2
Total		3		75	75	150			
Total (Theory + Lab)		25		315	435	750			


Khalil Ahmed


Amit Dogra


Rukhsana Thaker


Dean SoET
19/5/22


Semester-IV

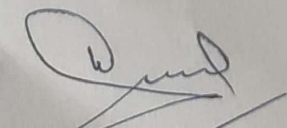
Theory Courses

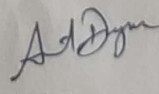
Course Code	Title	Credits	Scheme of Examination				Hrs./Week		
			Duration (hrs)	IA	UE	Total Marks	L	T	P
PCC-CSE-401	Discrete Mathematics	4	3	40	60	100	3	1	0
PCC-CSE-402	Python Programming	3	3	40	60	100	3	0	0
PCC-CSE-403	Computer Organization & Architecture	4	3	40	60	100	3	1	0
PCC-CSE-404	Database Management System	4	3	40	60	100	3	1	0
PCC-CSE-405	Operating System	4	3	40	60	100	3	1	0
HSMC-CSE-401	Management Information System	3	3	40	60	100	3	0	0
Total		22		240	360	600			

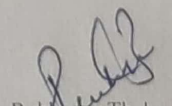
Laboratory Courses

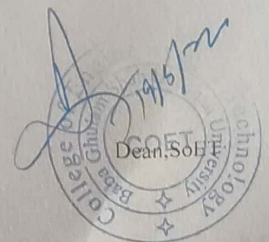
PCC-CSE-411	Python Programming Lab	1	2	25	25	50	0	0	2
PCC-CSE-412	Database Management System Lab	1	2	25	25	50	0	0	2
PCC-CSE-413	Operating System Lab	1	2	25	25	50	0	0	2
Total		3		75	75	150			
Total (Theory + Lab)		25		315	435	750			

- At the end of semester IV students are required to attend an Industrial Training-I for 6 weeks duration, during summer vacations in an Organization/Industry/Company. After the completion of training they have to prepare a detailed report of the training work which they have attended. Industrial Training shall be an essential component of curriculum to fulfill the eligibility criteria for appearing in semester V university examination. The evaluation of Industrial Training shall be done during semester V.


Khalil Ahmed


Amit Dogra


Rukhsana Thaker



Semester-V

Theory Courses

Course Code	Title	Credits	Scheme of Examination				Hrs./Week		
			Duration (hrs)	IA	UE	Total Marks	L	T	P
PCC-CSE-501	Theory of Automata	4	3	40	60	100	3	1	0
PCC-CSE-502	Computer Networks	4	3	40	60	100	3	1	0
PCC-CSE-503	Java Programming	3	3	40	60	100	3	0	0
PCC-CSE-504	Microprocessors and Interfacing	3	3	40	60	100	3	0	0
PEC-CSE-5XX	Professional Elective-I	3	3	40	60	100	3	0	0
OEC-CSE-5XX	Open Elective-I	3	3	40	60	100	3	0	0
Total		20		200	400	600			

Laboratory Courses

PCC-CSE-511	Computer Networks Lab	1	2	25	25	50	0	0	2
PCC-CSE-512	Java Programming Lab	1	2	25	25	50	0	0	2
PCC-CSE-513	Microprocessors and Interfacing Lab	1	2	25	25	50	0	0	2
PROJ-CSE-501	Industrial Training-I	1	-	25	-	25	0	0	2
Total		4		100	75	175			
Total (Theory + Lab)		24		300	475	775			

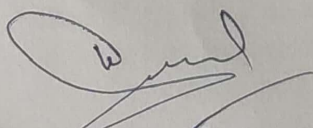
Professional Elective-I Courses (Code: PEC-CSE-501 to PEC-CSE-505)

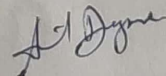
CODE	SUBJECT	CODE	SUBJECT
PEC-CSE-501	Data Warehousing and Data Mining	PEC-CSE-504	Internet and Web Technology
PEC-CSE-502	Software Project Management	PEC-CSE-505	Mobile Computing
PEC-CSE-503	System Software		

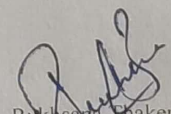
Open Elective I Courses

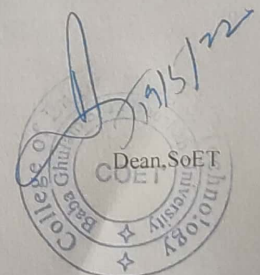
CODE	SUBJECT
OEC-CSE-501/ PCC-CE-303	Introduction to Fluid Mechanics
OEC-CSE-502/ PCC-CE-305	Disaster Preparedness and Planning
OEC-CSE-503/ PCC-EE-302	Electrical Machine I
OEC-CSE-504/ PCC-EE-303	Network Analysis and Synthesis
OEC-CSE-505/ PCC-ECE-303	Signals & Systems
OEC-CSE-506/ PEC-ECE-502	Electronic Multimedia Engineering

➤ A Minor Project will be allotted to each student/group of students at the end of semester V which has to be completed and shall be evaluated during semester VI.


Khalil Ahmed


Amit Dogra


Rukhsana Thaker



Semester-VI

Theory Courses

Course Code	Title	Credits	Scheme of Examination				Hrs./Week		
			Duration (hrs)	IA	UE	Total Marks	L	T	P
PCC-CSE-601	Compiler Design	4	3	40	60	100	3	1	0
PCC-CSE-602	Computer Graphics & Multimedia	3	3	40	60	100	3	0	0
PCC-CSE-603	Design & Analysis of Algorithms	4	3	40	60	100	3	1	0
PEC –CSE-6XX	Professional Elective-II	3	3	40	60	100	3	0	0
PEC –CSE-6XX	Professional Elective-III	3	3	40	60	100	3	0	0
OEC-CSE-6XX	Open Elective-II	3	3	40	60	100	3	0	0
Total		20		240	360	600			

Laboratory Courses

PCC-CSE-611	Compiler Design Lab	1	2	25	25	50	0	0	2
PCC-CSE-612	Computer Graphics & Multimedia Lab	1	2	25	25	50	0	0	2
PROJ-CSE-611	Minor Project	2	2	25	25	50	0	0	4
Total		4		75	75	150			
Total (Theory + Lab)		24		315	435	750			

Professional Elective II Courses (Code: PEC–CSE-601 to PEC –CSE-604)

CODE	SUBJECT	CODE	SUBJECT
PEC –CSE-601	Advanced Java	PEC –CSE-603	R-Programming
PEC –CSE-602	Unix/Linux & Shell Programming	PEC –CSE-604	Visual Programming

Professional Elective III Courses (Code: PEC –CSE-605 to PEC –CSE-609)

CODE	SUBJECT	CODE	SUBJECT
PEC –CSE-605	Computer Based Numerical Techniques	PEC –CSE-608	Cyber Crime and Laws
PEC –CSE-606	Grid Computing	PEC –CSE-609	Wireless Networks
PEC –CSE-607	Distributed Database System		

Open Elective II Courses

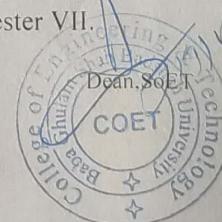
CODE	SUBJECT
OEC-CSE-601/ PCC-CE-404	Engineering Geology
OEC-CSE-602/ PCC-CE-405	Building Materials & Construction
OEC-CSE-603/ PCC-EE-401	Renewable Energy Sources
OEC-CSE-604/ PCC-EE-405	Electrical Measurements I
OEC-CSE-605/ PCC-ECE-403	Analog Communication Systems
OEC-CSE-606/ PCC-ECE-404	Linear Integrated Circuits & Pulse Switching

- At the end of semester VI students are required to attend an Industrial Training-II for 6 weeks duration, during summer vacations in an Organization/Industry/Company. After the completion of training they have to prepare a detailed report of the training work which they have attended. Industrial Training shall be an essential component of curriculum to fulfill the eligibility criteria for appearing in semester VII university examination. The evaluation of Industrial Training shall be done during semester VII.

Khalil Ahmed

Amit Dogra

Rukhsana Baker



Semester-VII

Theory Courses

Course Code	Title	Credits	Scheme of Examination				Hrs./Week		
			Duration (hrs)	IA	UE	Total Marks	L	T	P
PROJ-CSE-701	Major Project Phase-I based on Software Engineering	3	2	100	-	100	-	-	6
PCC -CSE-701	Fundamentals of Digital Image Processing	4	3	40	60	100	3	1	0
PCC -CSE-702	Artificial Intelligence	3	3	40	60	100	3	0	0
PEC -CSE-7XX	Professional Elective-IV	3	3	40	60	100	3	0	0
PEC -CSE-7XX	Professional Elective-V	3	3	40	60	100	3	0	0
OEC-CSE-7XX	Open Elective-III	3	3	40	60	100	3	0	0
Total		19		300	300	600			

Laboratory Courses

PCC -CSE-711	Fundamentals of Digital Image Processing Lab.	1	2	25	25	50	0	0	2
PROJ-CSE-712	Seminar on latest Trends	1	-	50	-	50	0	0	2
PROJ-CSE-713	Industrial Training-II	1	-	25	-	25	0	0	2
Total		3		100	25	125			
Total (Theory + Lab)		22		400	325	725			

Professional Electives IV Courses (Code: PEC -CSE-701 to PEC -CSE-706)

CODE	SUBJECT	CODE	SUBJECT
PEC -CSE-701	Cryptography and Network Security	PEC -CSE-704	Natural Language Processing
PEC -CSE-702	Internet of Things	PEC -CSE-705	Embedded System
PEC -CSE-703	Distributed Computing	PEC -CSE-706	Software Testing

Professional Electives V Courses (Code: PEC -CSE-707 to PEC -CSE-712)

CODE	SUBJECT	CODE	SUBJECT
PEC -CSE-707	Advanced Multimedia System	PEC -CSE-710	Big Data Analysis
PEC -CSE-708	Cloud Computing	PEC -CSE-711	Real Time Operating System
PEC -CSE-709	Fault Tolerant Computing	PEC -CSE-712	Communication System

Open Elective III Courses

CODE	SUBJECT
OEC-CSE-701/ PCC-CE-502	Environmental Engineering
OEC-CSE-702/ PCC-CE-505	Concrete Technology
OEC-CSE-703/ PEC-EE-501	Power Engineering
OEC-CSE-704/ PEC-EE-503	Engineering Material Science
OEC-CSE-705/ PCC-ECE-503	EM Wave Theory
OEC-CSE-706/ PEC-ECE-707	Biomedical Instrumentation

Khalil Ahmed

Ank Dogra

Ruchshana Khaker

Dean, SoET



➤ During semester VII every student shall be allotted a Major Project Phase-I based on Software Engineering under the supervision of an allotted mentor. Students are required to do preliminary exercise of survey of literature and preparation of a road map of the selected Project under the supervision of their allotted mentor. Major Project Phase-I based on Software Engineering is to be completed during semester VII and shall be evaluated internally as per university statutes by a committee consisting of:

- i) Head of the Department
- ii) One member nominated by Principal
- iii) Coordinator(s)/Supervisor(s)/Mentor(s) of project

Semester-VIII

Theory Courses

Course Code	Title	Credits	Scheme of Examination				Hrs./Week		
			Duration (hrs)	IA	UE	Total Marks	L	T	P
PROJ-CSE-801	Major Project-Phase II	8	2	250	200	450	-	-	16
PEC -CSE-8XX	Professional Elective-VI	3	3	40	60	100	3	0	0
OEC-CSE-8XX	Open Elective-IV	3	3	40	60	100	3	0	0
Total		14		330	320	650			

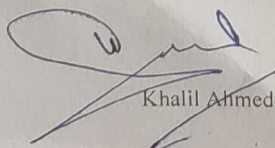
Professional Electives VI Courses (Code: PEC -CSE-801 to PEC -CSE-806)

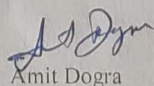
CODE	SUBJECT	CODE	SUBJECT
PEC -CSE-801	Advanced Computer Architecture	PEC -CSE-804	Neural Networks
PEC -CSE-802	Expert System	PEC -CSE-805	Pattern Recognition
PEC -CSE-803	Green Computing	PEC -CSE-806	Bio-Informatics

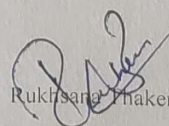
Open Elective IV Courses

CODE	SUBJECT
OEC-CSE-801/ PEC-CE-641	Construction Engineering and Management
OEC-CSE-802/ PEC-CE-648	Industrial Waste Treatment
OEC-CSE-803/ PCC-EE-603	Control Systems
OEC-CSE-804/ PEC-EE-603	Energy Audit and Management
OEC-CSE-805/ PEC-ECE-601	Mobile and Wireless Communication
OEC-CSE-806/ PCC-ECE-601	Digital Signal Processing

- After completing the Major Project-Phase I in semester VII the students are required to complete the Major Project- Phase II during semester VIII. Depending upon the infrastructure, computing and other laboratory facilities the students shall be offered in house project on campus or they can complete their project work in any organization/industry outside the campus. Major Project- Phase II shall be evaluated as per university statutes.
- **Open Elective-I, Open Elective-II, Open Elective-III, Open Elective-IV** are the courses to be taken by CSE students from other technical departments, each of three (approx.) credits.


Khalil Ahmed


Amit Dogra


Rukhsana Thaker

