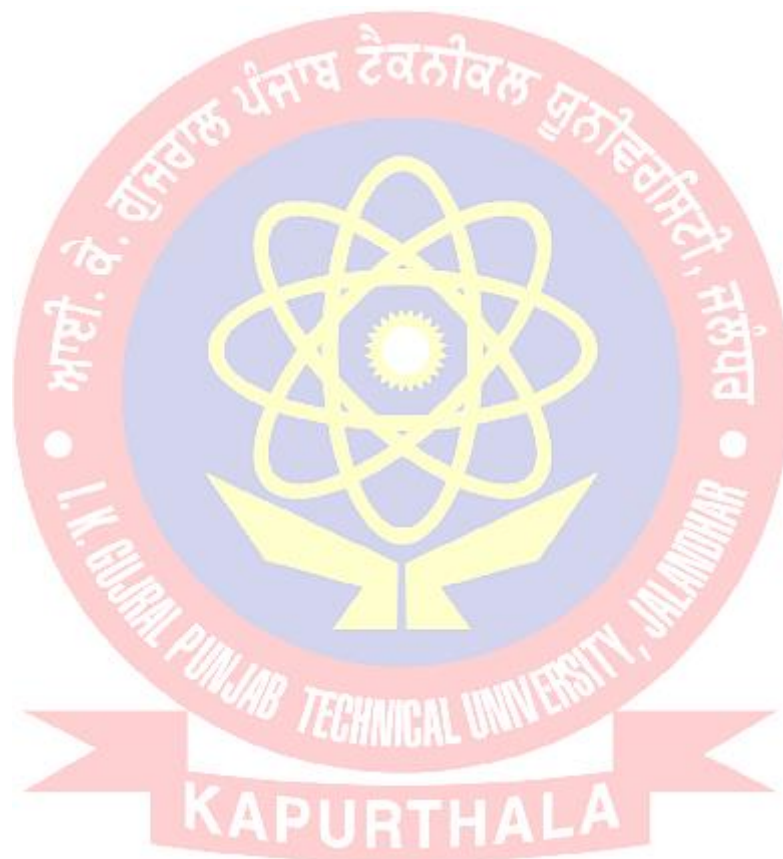


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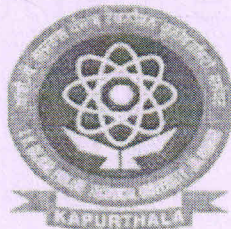
Institutional Initiatives-IRCUHV



UHV-II Implemented

Scheme & Syllabus of
Bachelor of Technology
Computer Science & Engineering

Batch 2018 onwards
(3rd -8th Semester)-
Affiliated colleges



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By

Department of Academics
IK Gujral Punjab Technical
University

[Handwritten signature]
Director
International Resource Centre
For Universal Human Values & Ethics
Punjab Technical University, Kapurthala

**IK Gujral Punjab Technical University,
Kapurthala**

Fourth Semester

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCS 401-18	Professional Core Courses	Discrete Mathematics	3	1	0	40	60	100	4
BTES 401-18	Engineering Science Course	Computer Organization & Architecture	3	0	0	40	60	100	3
BTCS 402-18	Professional Core Courses	Operating Systems	3	0	0	40	60	100	3
BTCS 403-18	Professional Core Courses	Design & Analysis of Algorithms	3	0	0	40	60	100	3
HSMC 122-18	Humanities & Social Sciences including Management Courses	Universal Human Values 2	2	1	0	40	60	100	3
EVS101-18	Mandatory Courses	Environmental Sciences	3	-	-	100	-	100	S/US
BTES 402-18	Engineering Science Course	Computer Organization & Architecture Lab	0	0	2	30	20	50	1
BTCS 404-18	Professional Core Courses	Operating Systems Lab	0	0	4	30	20	50	2
BTCS 405-18	Professional Core Courses	Design & Analysis of Algorithms Lab	0	0	4	30	20	50	2
Total			15	2	10	390	360	750	24

Students will take up summer internship of 4-6 weeks at industry or organizations of repute after 4th sem, that will be accredited in 5th semester.


Director
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For Universal Human Values & E
Punjab Technical University, Kapurthala

UHV-II Implemented

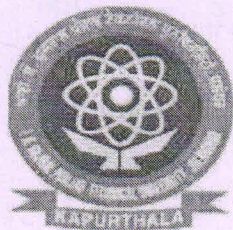
Scheme & Syllabus of

Bachelor of Technology

Information Technology

Batch 2018 onwards

(3rd-8thSem.)-Affiliated Colleges



Department of Academics

**IK Gujral Punjab Technical
University, Kapurthala**


**Director
International Resource Centre
For Universal Human Values & Ethics
Punjab Technical University, Kapurthala**

IK Gujral Punjab Technical University, Kapurthala
B. Tech, Information Technology

Fifth Semester

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTIT 501-18	Professional Core Courses	Formal Language & Automata Theory	3	0	0	40	60	100	3
BTIT 502-18	Professional Core Courses	Database Management Systems	3	0	0	40	60	100	3
BTIT 503-18	Professional Core Courses	Programming in Java	3	0	0	40	60	100	3
BTIT 504-18	Professional Core Courses	Software Engineering	3	0	0	40	60	100	3
MC12 2-18	Humanities & Social Sciences including Management Courses	Universal Human values-2	3	0	0	40	60	100	3
BTIT XXX-18	Professional Elective	Elective-I	3	0	0	40	60	100	3
MC	Mandatory Courses	Constitution of India/ Essence of Indian Traditional Knowledge	2	-	-	100	-	100	S/US
BTIT 505-18	Professional Core Courses	Database Management Systems Lab	0	0	4	30	20	50	2
BTIT 506-18	Professional Core Courses	Programming in Java Lab	0	0	2	30	20	50	1
BTIT 507-18	Professional Core Courses	Programming in Software Engg.	0	0	2	30	20	50	1
BTIT XXX-18	Professional Elective	Elective-I lab	0	0	2	30	20	50	1
	Professional Training	Industrial *Training	-	-	-	60	40	100	S/US
	Total		20	0	10	360	440	800	23

* 4-6 weeks industrial training undertaken after 4th semester in summer vacations.


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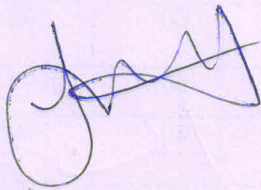
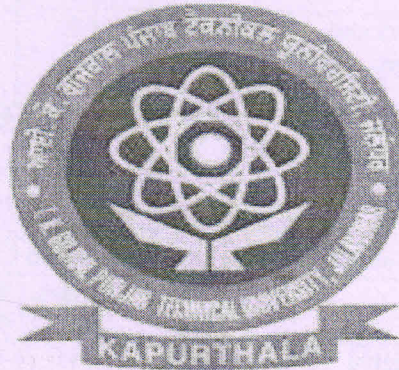
UHV-II Implemented

IKG Punjab Technical University

Syllabus (3rd-8th Semester)

for

Undergraduate Degree Programme



Bachelor of Technology

ELECTRONICS AND COMMUNICATION ENGINEERING

Scheme & Syllabus

2018 & onwards


Director
International Resource Centre
For Universal Human Values & Ethics
Punjab Technical University, Kapurthala

B.Tech Electronics & Communication Engineering (ECE) Study Scheme and Syllabus 2018 & Onwards
Board of Studies Electronics & Communication Engineering, Affiliated colleges, IKGPTU (18/05/2021)

Semester IV [Second year]										
Branch/Course: B.Tech. Electronics and Communication Engineering										
Sr. No.	Course code	Course Title	L	T	P	Hrs	Internal Marks	External Marks	Total Marks	Credits
1	BTEC-401-18	Analog Circuits	3	1	0	4	40	60	100	4
2	BTEC-402-18	Microprocessors and Microcontrollers	3	1	0	4	40	60	100	4
3	BTCS-301-18	Data Structures & Algorithms	3	0	0	3	40	60	100	3
4	BTEC-403-18	Signals and Systems	3	1	0	4	40	60	100	4
5	HSMC122-18	Universal Human Values - 2: Understanding Harmony	3	0	0	3	40	60	100	3
6	EVS-101-18	Mandatory Course- Environmental Sciences	3	0	0	3	100	0	100	Non-credit
7	BTEC-411-18	Analog Circuits Laboratory	0	0	2	2	30	20	50	1
8	BTEC-412-18	Microprocessors and Microcontrollers Laboratory	0	0	2	2	30	20	50	1
9	BMPD-341-18	Mentoring and Professional Development	0	0	2	2	Satisfactory/Un-satisfactory			Non-credit
Total			18	2	6	26	360	340	700	20
Semester V [Third year]										
Branch/Course: B.Tech. Electronics and Communication Engineering										
Sr. No.	Course code	Course Title	L	T	P	Hrs.	Internal Marks	External Marks	Total	Credit
1	BTEC-501-18	Analog and Digital Communication	3	1	0	4	40	60	100	4
2	BTEC-502-18	Digital Signal Processing	3	1	0	4	40	60	100	4
3	BTEC-503-18	Linear Integrated Circuits	3	1	0	4	40	60	100	4
4	BTEC-504-18	Control Systems	3	1	0	4	40	60	100	4
5	BTEC-901X-18	Professional Elective-1	3	0	0	3	40	60	100	3
6	BTEC-505-18	Project Management	3	0	0	3	40	60	100	3
7	BTEC-511A-18	Analog and Digital Communication Laboratory	0	0	2	2	30	20	50	1
8	BTEC-512-18	Digital Signal Processing Laboratory	0	0	2	2	30	20	50	1
9	BTEC-513-18	Linear Integrated Circuits Laboratory	0	0	2	2	30	20	50	1
10	BTEC-521-18	4-Weeks Industrial Training	0	0	6	6	60	40	100	0
11	BTEC-10X-18	Professional Elective-1 Lab (Optional)**	0	0	2	2	Satisfactory/Un-satisfactory			Non-credit

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Punjab Technical University, Kapurthala

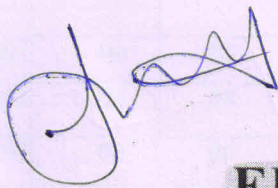
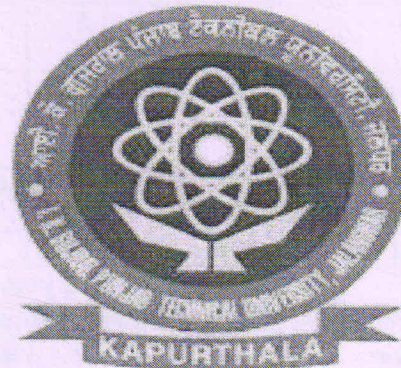
UHV - II Implemented

IKG Punjab Technical University

Syllabus (3rd-8th Semester)

for

Undergraduate Degree Programme



Bachelor of Technology

ELECTRONICS AND TELECOMMUNICATION ENGINEERING (ETE)

Scheme & Syllabus

2018 & onwards

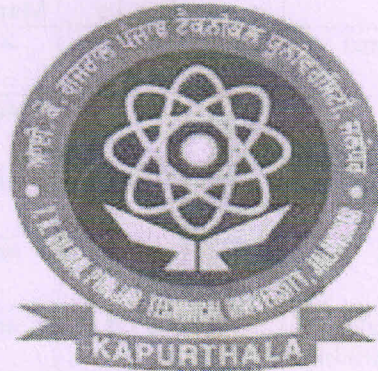
Director
International Resource Centre
For Universal Human Values & Ethics
Punjab Technical University, Kapurthala

B.Tech Electronics & Telecommunication Engineering (ETE) Study Scheme and Syllabus 2018 & Onwards
Board of Studies Electronics & Communication Engineering, Affiliated colleges, IKGPTU Kapurthala

Semester IV [Second year]										
Branch/Course: Electronics and Telecommunication Engineering										
Sr. No.	Course code	Course Title	L	T	P	Hrs	Internal Marks	External Marks	Total Marks	Credits
1	BTEC-401-18	Analog Circuits	3	1	0	4	40	60	100	4
2	BTEC-402-18	Microprocessors and Microcontrollers	3	0	0	3	40	60	100	3
3	BTCS-301-18	Data Structures & Algorithms	3	0	0	3	40	60	100	3
4	BTEC-403-18	Signals and Systems	3	1	0	4	40	60	100	4
5	HSMC122-18	Universal Human Values - 2: Understanding Harmony	3	0	0	3	40	60	100	3
6	EVS-201-18	Mandatory Course- Environmental Sciences	3	0	0	3	40	60	100	Non-credit
7	BTEC-411-18	Analog Circuits Laboratory	0	0	2	2	30	20	50	1
8	BTEC-412-18	Microprocessors and Microcontrollers Laboratory	0	0	2	2	30	20	50	1
9	BMPD-341-18	Mentoring and Professional Development	0	0	2	Satisfactory/Un-satisfactory			Non-credit	
Total			18	2	6	24	300	400	700	19

Semester V [Third year]										
Branch/Course: Electronics and Telecommunication Engineering										
Sr. No.	Course code	Course Title	L	T	P	Hrs.	Internal Marks	External Marks	Total	Credits
1	BTEC-501-18	Analog and Digital Communication	3	0	0	3	40	60	100	3
2	BTCS-602-18	Computer Networks	3	0	0	3	40	60	100	3
3	BTEC-503-18	Linear Integrated Circuits	3	0	0	3	40	60	100	3
4	BTEC-504-18	Control Systems	3	1	0	4	40	60	100	4
5	BTEC-901X-18	Program Elective-1	3	0	0	3	40	60	100	3
6	BTEC-511-18	Analog and Digital Communication Laboratory	0	0	2	2	30	20	50	1
7	BTEC-512-18	Digital Signal Processing Laboratory	0	0	2	2	30	20	50	1
8	BTEC-513-18	Linear Integrated Circuits Laboratory	0	0	2	2	30	20	50	1
9	BTET-521-18	4-Weeks Industrial Training-I	0	0	6	6	60	40	100	3
10	BMPD-351-18	Mentoring and Professional Development	0	0	2	Satisfactory/Un-satisfactory			Non-credit	

UHV - II Implemented



IKG Punjab Technical University

Syllabus (3rd-8th Semester)

for

Undergraduate Degree Programme

Bachelor of Technology

**ELECTRONICS AND
INSTRUMENTATION ENGINEERING**

Scheme & Syllabus

2018 & onwards


Director
International Resource Centre
For Universal Human Values & Ethics
Punjab Technical University, Kapurthala

B.Tech Electronics & Instrumentation Engineering (EIE) Year 2018 & Onwards: Scheme and Syllabus
Board of studies-Electronics & Communication Engineering, Affiliated Colleges, IKGPTU Kapurthala

Semester IV [Second year]										
Branch/Course: Electronics and Instrumentation Engineering										
Sr. No.	Course code	Course Title	L	T	P	Hrs	Internal Marks	External Marks	Total Marks	Credits
1	BTEI-401-18	Transducers and Signal Conditioning	3	1	0	4	40	60	100	4
2	BTEC-401-18	Analog Circuits	3	1	0	4	40	60	100	4
3	BTEC- 302-18	Digital System Design	3	0	0	3	40	60	100	3
4	BTEC-403-18	Signals and Systems	3	1	0	4	40	60	100	4
5	HSMC122-18	Universal Human Values – 2: Understanding Harmony	3	0	0	3	40	60	100	3
6	EVS-201-18	Mandatory Course- Environmental Sciences	3	0	0	3	100	00	100	Non-credit
7	BTEI-411-18	Transducers and Signal Conditioning Laboratory	0	0	2	2	30	20	50	1
8	BTEC-411-18	Analog Circuits Laboratory	0	0	2	2	30	20	50	1
9	BTEC- 312-18	Digital System Design Laboratory	0	0	2	2	30	20	50	1
10	BMPD-341-18	Mentoring and Professional Development	0	0	2	Satisfactory/Un-satisfactory			Non-credit	
Total			17	1	8	25	390	360	750	21

Semester V [Third year]										
Branch/Course: Electronics and Instrumentation Engineering										
Sr. No.	Course code	Course Title	L	T	P	Hrs.	Internal Marks	External Marks	Total	Credits
1	BTEI-501-18	Biomedical Instrumentation	3	0	0	3	40	60	100	3
2	BTEC-502-18	Digital Control Systems	3	1	0	4	40	60	100	4
3	BTEC-503-18	Linear Integrated Circuits	3	0	0	3	40	60	100	3
4	BTEC-402-18	Microprocessors and Microcontrollers	3	0	0	3	40	60	100	3
5	BTEI-906X-18	Professional Elective-I	3	0	0	3	40	60	100	3
6	BTOEI-XX1-18	Open Elective-I	3	0	0	3	40	60	100	3
7	BTEC-412-18	Microprocessors and Microcontrollers Laboratory	0	0	2	2	30	20	50	1
8	BTEC-513-18	Linear Integrated Circuits Laboratory	0	0	2	2	30	20	50	1
9	BTEI-521-18	4-Week Industrial Training -I	0	0	6	6	60	40	100	3
10	BMPD-351-18	Mentoring and Professional Development	0	0	2	Satisfactory/Un-satisfactory			Non-credit	

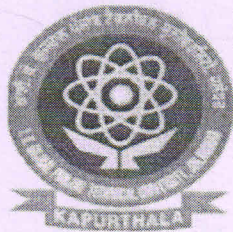

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 Punjab Technical University, Kapurthala

UHV-II

Implemented

Scheme & Syllabus of
Bachelor of Technology
Computer Science (IoT&Cyber
Security with Block Chain Technology)

Batch 2020 onwards
(3rd -8th Semester)



By

Department of Academics
IK Gujral Punjab Technical
University

Director
International Resource Centre
For Universal Human Values & Ethics
Punjab Technical University, Kapurthala

IK Gujral Punjab Technical University, Kapurthala
B. Tech,

Fourth Semester

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCS 401-18	Professional Core Courses	Discrete Mathematics	3	1	0	40	60	100	4
BTES 401-18	Engineering Science Course	Computer Organization & Architecture	3	0	0	40	60	100	3
BTCS 402-18	Professional Core Courses	Operating Systems	3	0	0	40	60	100	3
BTCS 403-18	Professional Core Courses	Design & Analysis of Algorithms	3	0	0	40	60	100	3
HSMC 122-18	Humanities & Social Sciences including Management Courses	Universal Human Values 2	2	1	0	40	60	100	3
EVS101-18	Mandatory Courses	Environmental Sciences	3	-	-	100	-	100	S/US
BTES 402-18	Engineering Science Course	Computer Organization & Architecture Lab	0	0	2	30	20	50	1
BTCS 404-18	Professional Core Courses	Operating Systems Lab	0	0	4	30	20	50	2
BTCS 405-18	Professional Core Courses	Design & Analysis of Algorithms Lab	0	0	4	30	20	50	2
Total			15	2	10	390	360	750	24

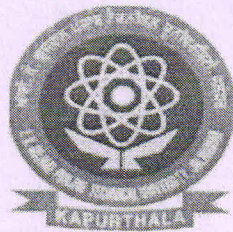
Students will take up summer internship of 4-6 weeks at industry or organizations of repute after 4th sem, that will be accredited in 5th semester.


 Director
 International Resource Centre
 For Universal Human Values & Ethics
 Punjab Technical University, Kapurthala

UHV-II Implemented

Scheme & Syllabus of
Bachelor of Technology
Computer Science Engg.
(Artificial Intelligence & Machine
Learning)

Batch 2020 onwards
(3rd -8th Semester)



By

Director
International Resource Centre
For Universal Human Values & Ethics
Punjab Technical University, Kapurthala

Department of Academics
IK Gujral Punjab Technical
University

IK Gujral Punjab Technical University, Kapurthala
B. Tech,

Fourth Semester

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCS 401-18	Professional Core Courses	Discrete Mathematics	3	1	0	40	60	100	4
BTES 401-18	Engineering Science Course	Computer Organization & Architecture	3	0	0	40	60	100	3
BTCS 402-18	Professional Core Courses	Operating Systems	3	0	0	40	60	100	3
BTCS 403-18	Professional Core Courses	Design & Analysis of Algorithms	3	0	0	40	60	100	3
HSMC 122-18	Humanities & Social Sciences including Management Courses	Universal Human Values 2	2	1	0	40	60	100	3
EVS101-18	Mandatory Courses	Environmental Sciences	3	-	-	100	-	100	S/US
BTES 402-18	Engineering Science Course	Computer Organization & Architecture Lab	0	0	2	30	20	50	1
BTCS 404-18	Professional Core Courses	Operating Systems Lab	0	0	4	30	20	50	2
BTCS 405-18	Professional Core Courses	Design & Analysis of Algorithms Lab	0	0	4	30	20	50	2
Total			15	2	10	390	360	750	24

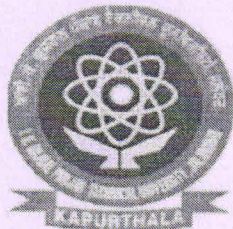
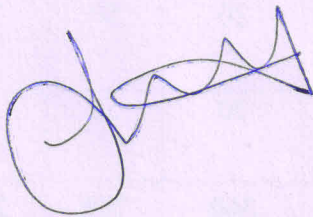
Students will take up summer internship of 4-6 weeks at industry or organizations of repute after 4th sem, that will be accredited in 5th semester.


Director
International Resource Centre
For Universal Human Values & Ethics
Punjab Technical University, Kapurthala

UHV-II Implemented

Scheme & Syllabus of
Bachelor of Technology
**Computer Science Engg. (Data
Science)**

Batch 2020 onwards
(3rd -8th Semester)



By



Director
International Resource Centre
For Universal Human Values & Ethics
Punjab Technical University, Kapurthala


Department of Academics
**IK Gujral Punjab Technical
University**

IK Gujral Punjab Technical University, Kapurthala
B. Tech,

Fourth Semester

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCS 401-18	Professional Core Courses	Discrete Mathematics	3	1	0	40	60	100	4
BTES 401-18	Engineering Science Course	Computer Organization & Architecture	3	0	0	40	60	100	3
BTCS 402-18	Professional Core Courses	Operating Systems	3	0	0	40	60	100	3
BTCS 403-18	Professional Core Courses	Design & Analysis of Algorithms	3	0	0	40	60	100	3
HSMC 122-18	Humanities & Social Sciences including Management Courses	Universal Human Values 2	2	1	0	40	60	100	3
EVS101-18	Mandatory Courses	Environmental Sciences	3	-	-	100	-	100	S/US
BTES 402-18	Engineering Science Course	Computer Organization & Architecture Lab	0	0	2	30	20	50	1
BTCS 404-18	Professional Core Courses	Operating Systems Lab	0	0	4	30	20	50	2
BTCS 405-18	Professional Core Courses	Design & Analysis of Algorithms Lab	0	0	4	30	20	50	2
Total			15	2	10	390	360	750	24

Students will take up summer internship of 4-6 weeks at industry or organizations of repute after 4th sem, that will be accredited in 5th semester.


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Punjab Technical University, Kapurthala

IK Gujral Punjab Technical University
Bachelor of Technology in Chemical Engineering

*UHV-II
Implemented*

Third Semester

Contact Hrs. : 25

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCHE301-18	Engineering Science Course	Engineering and Solid Mechanics	3	1	0	40	60	100	4
BTCHE302-18	Basic Science Course	Chemistry - II	3	1	0	40	60	100	4
BTCHE303-18	Professional Core Courses	Transport Phenomena	3	1	0	40	60	100	4
BTCHE304-18	Basic Science Course	Biology	3	1	0	40	60	100	4
BTCHE305-18	Professional Core Courses	Thermodynamics - II	3	1	0	40	60	100	4
BTCHE306-18	Engineering courses Science	Engineering Workshop*	1	0	4	30	20	50	3
BMPD301-18		Mentoring and Professional Development	0	0	2	Satisfactory / Un-Satisfactory			Non-Credit
TOTAL									23

*No theory exam to be conducted. Only practical exam will be conducted.

Fourth Semester

Contact Hrs. : 23

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCHE401-18	Professional Core Courses	Heat Transfer	3	1	0	40	60	100	4
BTCHE402-18	Professional Core Courses	Mass Transfer-I	3	1	0	40	60	100	4
BTCHE403-18	Professional Core Courses	Fluid Mechanics	3	1	0	40	60	100	4
BTCHE404-18	Engineering Core Courses	Materials Science	3	0	0	40	60	100	3
BTXXXXXX-18	Humanities And Social Sciences Including Management Courses	HASS- II (Foundation course in Humanities: Development of Societies/Philosophy)	3	0	0	40	60	100	3
BTCHE405-18	Professional Core Courses	Numerical Methods in Chemical Engineering	2	0	0	40	60	100	2
EVS101-18	Mandatory non-credit course	Environmental sciences	2	0	0	40	60	100	0
BTCHE406-18	Professional Core Courses	Numerical Methods in Chemical Engineering	0	0	2	30	20	50	1
BMPD401-18		Mentoring and Professional Development	0	0	2	Satisfactory / Un-Satisfactory			Non-Credit
TOTAL									21

Director
International Resource Centre
For Universal Human Values & Ethics
Punjab Technical University, Kapurthala

IK Gujral Punjab Technical University
Bachelor of Technology in Chemical Engineering

Fifth Semester

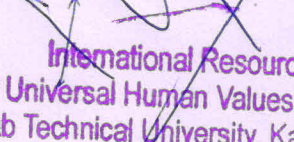
Contact Hrs. : 25

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCHE501-18	Professional Core Courses	Chemical Reaction Engineering- I	3	1	0	40	60	100	4
BTCHE502-18	Professional Core Courses	Mass Transfer- II	3	0	0	40	60	100	3
BTCHEXXX-18	Professional Elective Courses	Core Elective- I	3	0	0	40	60	100	3
	Open Elective Courses	Open Elective- I	3	0	0	40	60	100	3
BTXXXXXX-18	Humanities And Social Sciences Including Management Courses	HASS- III (Universal Human Values-II: Self, Society and Nature)	3	0	0	40	60	100	3
BTCHE503-18	Professional Core Courses	Chemical Engineering Lab-I	0	0	4	30	20	50	2
BTCHE504-18	Professional Core Courses	Particle & Fluid Particle Processing	3	0	0	40	60	100	3
BTCHE505-18	Mandatory course	Slot for MC [Constitution of India]	2	-	-	40	60	100	0
BMPD501-18		Mentoring and Professional Development	0	0	2	Satisfactory / Un-Satisfactory			Non-Credit
TOTAL									21

Sixth Semester

Contact Hrs. :22

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCHE601-18	Professional Core Courses	Chemical Reaction Engineering- II	3	0	0	40	60	100	3
BTCHE602-18	Professional Core Courses	Process Technology & Economics	3	0	0	40	60	100	3
BTCHEXXX-18	Professional Elective Courses	Core Elective- II	3	0	0	40	60	100	3
BTCHE603-18	Professional Core Courses	Process Control	3	0	0	40	60	100	3
BTXXXXXX-18	Humanities And Social Sciences Including Management Courses	HASS- IV (Humanities Elective)	3	0	0	40	60	100	3
BTCHE604-18	Professional Core Courses	Chemical Engineering Lab- II	0	0	4	30	20	50	2
	Open Elective Courses	Open Elective- II	3	0	0	40	60	100	3
BMPD601-18		Mentoring and Professional Development	0	0	2	Satisfactory / Un-Satisfactory			Non-Credit
TOTAL									20


Director
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