AGENDA

for

26th ACADEMIC COUNCIL

Date : 13th September, 2006

Time : 1130 hours

Venue : Chitkara Institute of Engineering & Technology, Jansla (Distt. Patiala)

PUNJAB TECHNICAL UNIVERSITY

Jalandhar

Agenda for the 26th meeting of the Academic Council scheduled to be held on 13.9.06 at Chitkara Institute of Engg. & Technology, Vill. Jansla (Distt. Patiala)

Item No. 26.1 To confirm the minutes of the 25th meeting of the Academic Council held at GNAIMT, Phagwara

Minutes of the 25th meeting of the Academic Council held on 30 June 2006 at 1100 hours at GNA-IMT Phagwara are placed at **Appendix A**

The minutes were circulated among the members. The University has not received any comment from any of the members. The minutes may be taken as confirmed.

Item No. 26.2 Action taken report on the minutes of the 25th meeting of the Academic Council.

Action taken report of the 25th meeting of the Academic Council is placed at **Appendix B**

Item No. 26.3 To brief on the decisions taken on the 23th meeting of the BOG.

The Board of Governors, PTU, in its 23rd meeting deliberated the proceedings and recommendations of the Academic Council. The following decisions were taken by the BOG :

(A) Amendment to Academic Regulations 2001/2004

The Board approved the recommendations of the Academic Council on modifications to the Academic Regulations -2004 pertaining to examination and attendance. The recommendations of the council were also made applicable to the students governed by Academic Council Regulations 2001.

Further the BOG implemented the changes prospectively and not with retrospective effect. Consequently Academic Regulations-2004 Para 6.1 and 6.2 stand repealed and replaced by the following:

6.1 Examination: any bonafide student, subject to provisions of regulation 3.2 and 6.2, who appears for the examination conducted by the University, shall be promoted to the next higher semester and shall carry forward, all course(s) in which he / she is declared fail. The student shall have to pass all papers within the stipulated maximum duration to qualify for the award of university degree.

The same shall be applicable, mutatis mutandis, to students governed by Academic Regulation 2001 in super session of relevant provisions therein.

6.2 Attendance:

(a) Student detained, due to shortage of attendance, in any subject, shall have to repeat the course and then only appear in the concerned subject, whenever it is offered as a regular course. However, if a student is short in attendance in all the courses offered during a semester, he/she shall be required to repeat the semester, along with the next batch of students.

(b) A student absent consecutively, without any notice or intimation, in writing to the concerned Principal/Director, for more than 45 days consecutively in a semester shall be deemed to have withdrawn from the course and his/her enrolment shall stand cancelled. Save the amendments proposed hereinabove, all other provisions of Academic Regulations 2004/2001 shall remain unaltered.

The above shall be applicable, mutatis mutandis, to students governed by Academic Regulation 2001 in super session of relevant provisions therein. The modified Academic Regulations-2004 as applicable to Engineering are placed at **Appendix C.** These shall be mutatis mutandis, applied to all undergraduate and MBA / M Sc/ MCA courses.

The members of the Academic Council are informed accordingly. Any clarifications of ambiguity must be brought to the notice of the University in writing within 90 days of implementation of these provisions. The University alone shall be the competent

authority to issue any Clarifications to remove any doubts or hardship to any individual or group of students enrolled in the University.

(B) Examination in the latest syllabus

The Board did not approve conduct of examination as per the latest revised curriculum in respect of students who had failed to clear the subject. The Board referred the case to the Academic Council with the following recommendations:

(a) To study the pattern being followed by the other universities particularly technical universities for similar courses.

(b) To set multiple copies of papers for each set of syllabus and to use these question papers as question paper bank.

(C) Amendment to Chapter XVI of the regulations relating to use of unfair means in or in relation to examination

The Board approved the amendment as proposed. It was decided that the amendment must be given a vide publicity and cautionary notice must be displayed at appropriate places in the institute / exam hall. The amendment approved is as appended below:

10 (z)" (i) Carriage of mobile or other means of electronics communication inside the examination hall (even in off condition).
(ii) Communicating or trying to communicate, by any means whatsoever, through electronic media or otherwise with any other person in a manner that is indicative of help being sought/ given in an examination".

Item No. 26.4 To approve the list of the students for Convocation

It is planned to hold 4th convocation of the university in the last week of the October. List of the eligible students is under preparation. The same shall be circulated to all the colleges. The Council may approve award of degree to the eligible candidates.

Item No. 26.5 To consider about the relaxation of passing Marks from 50% to 40% in respect of Ms. Simaran Singh D/o Shri Kuldeep Singh, Roll NO. 29725492, 2nd semester B.Pharamcy (Maths re-appear examination)

A request letter as appended at **Appendix D** is placed before the Academic Council for opinion of the council.

Item No. 26.6 To deliberate on the issue of the students who had failed to register themselves up to the last date of the registration (31.8.06)

The last date for the submission of registration forms in the colleges was 31.8.06. However, some students failed to register themselves for the current semester. The university has received 30 applications from students through their respective Principals. The same are appended at **Appendix E.** The council may deliberate in respect of the following students:

(a) Who have submitted their Registration Forms duly forwarded by their Principal.

(b) Similarly placed students who have as yet not registered with the University.

The matter is placed before the Council.

Item No. 26.7 To approve the syllabi, fee structure and eligibility conditions of the new courses.

Meetings of the BOS were arranged to consider the formulation of syllabi, fee structure and the eligibility conditions for the new courses. The minutes of the same are appended at **Appendix - F** for the information of the council.

Item No. 26.8 To approve the syllabus for Diploma Course (Electrical & Mechanical stream, 1st and 2nd sem) at UPS- ONGC Dehradun.

The University had conducted diploma courses in Mechanical Engineering for ONGC under Unnati Prayas Scheme. This year the university has received request from ONGC for diploma courses in Mechanical and in Electrical Engineering. It is endeavoured to have a common curriculum in the first two semesters. The number of students enrolled in the diploma courses is as follows:

(a)	Mechanical	13
(b)	Electrical	12
	Total	**25**

The curriculum for the first two semesters has been prepared. Details of the syllabus for Diploma Course (Electrical & Mechanical stream, 1st & 2nd semester) at UPS- ONGC Dehradun is appended at **Appendix - G** for the approval of the council.

Item No. 26.9 **To approve affiliation of colleges for the session 2006-07.**

The list of the colleges affiliated for the session 2006 -07 is appended at **Appendix-H** for information and deliberation of the council.

Item No. 26.10 **Award of Honoris Causa of the University.**

Regulations regarding the award of Honorary Causa have been included in the Regulation of the University (refer page 39 of the calendar, 2005). It is proposed that Academic Council may constitute a committee for making recommendations for award of the coveted degree.

Item No. 26.11 **To deliberate on the proposal to set up a Regional Centre of the University at Khadoor Sahib in Tarantaran.**

The University had received a proposed from the DC of Taran Taran District for setting up an engineering college at Khadoor Sahib.

The matter was discussed in the 27th Board meeting held at Chandigarh on August 9th, 2006. The proposal was in principal agreed by the Board on the recommendations of the Finance Committee for establishing a regional centre at Khadoor Sahib Tarantaran as a joint venture. The Board desired that the Vice Chancellor shall appoint a Committee to examine the viability and to work out a detailed project report for establishing the said Regional Centre.

In the meanwhile the University has already initiated discussions with various reputed industries and chambers such as Hero Honda Group, Ranbaxy Group, Ph.D. Chamber of Commerce and Industries, APJ Satya Group etc. The University has yet to receive a positive intent from any of such agencies.

The University has tentatively prepared an initiation plan in which it is desired that the requisite land may be given by the district administration of Tarantaran district and the

total expenditure to start the said regional centre would be around 50 crores for building construction, equipments, ICT enabled services and projected manpower cost. The proposed centre shall work as a self-financing centre and the recurring expenditure would be met out of the revenue generated from the said centre. The only investment would be for a total cost of 50.00 crores which shall be spread over a period of 5 years. It is desired that the State Government may like to sanction part funds to the tune of about 20 crores and the rest would be met out of the joint venture with the industrial house which will participate in the said regional centre.

It has already been tentatively decided that the University shall start the following under graduate and post graduate courses in the said regional centre: -

1. B. Tech. Bio Technology
2. B. Tech. Bio Informatics
3. B. Tech. Electronics Communication
4. B. Tech. Information Technology
5. M. Tech. Nano Technology and other Allied Technologies

The matter is placed before the Academic Council for consideration.

Item No. 26.12 **Any other points with the permission of the chair.**

Registrar

APPENDIX - A

Proceedings of the meeting of the Academic Council Meeting held on 30th June 2006 at 1130 hrs in the Conference Hall of GNA Institute of Management & Technology, Phagwara

Members as per the list given at **Appendix A** attended the meeting.

Briefing on CET-06

In his opening address, the Chairman welcomed the members to the meeting. He congratulated the members on the record number of applications received by the University for CET – 06. He informed the Council that as many as 17103 candidates had taken the written exam CET-06 held on 28 May 2006. The result of the test was declared on 12 June and the counseling of the reserved categories had been completed. This year there was a record turn over for admission to Engineering, Pharmacy & Architecture. He also informed the Council that a similar trend had been reported for other courses under the University. The image of the University had improved. This he said, had been possible only because of efforts made by the constituent colleges. If the stakeholders were holding the University in high esteem, the credit is to the affiliated college management.

He mentioned that a large number of foreign universities had approached seeking collaboration for education. The UGC and AICTE are in process of formulating rules and regulations for entry of foreign universities in India. This was likely to make the competition tougher. He asked the members that our efforts in improving quality of education could not be diluted. Things could not be left to themselves and continuous concerted efforts must be made.

The Vice-Chancellor briefed the Council that construction work of the University administrative block was in progress. The Hon'ble CM, Punjab had laid the foundation stone of the building on 22 March 2006 at a function. He also informed the Council on

the progress made in setting up of PTU-CAPARO School of Excellence in Manufacturing Technology.

The Secretary informed the Council that some new members had joined the Council while a few others had come back on shifting from one college to another.

The following were introduced to the Council:

(i)	Dr. S.P. Tayal	Principal, CTIET
(ii)	Prof.(Ms.) G.V. Patil	Principal, Global College of Pharmacy, Ropar
(iii)	Dr. N.K. Dutta	Principal, PCTE, Lalru Mandi
(iv)	Dr. N.L Arora	Director, SSIET, Patti
(v)	Dr. A.S. Bansal	Director, Bhutta College of Engg. & Technology, Bhutta
(vi)	Dr. V.J. Dhar	Doaba College of Pharmacy, Gharaur
(vii)	Dr. S.C. Chauhan	LIT, Phargwara

Dr. (Mrs.) H.K. Grewal, officiating Principal GNDEC brought to the notice of the council that GNDEC had been successful in gaining 19th position in India Today's standing amongst all the institutes imparting engineering. This, she informed, included IIT's, NIT, deemed Universities and others. The Chairman congratulated the management & staff of the college and asked all the members to work towards achieving such laurels.

The Registrar briefed the council that examination for May 2006 had been completed for 2k2 batch onwards. The result for final semester of engineering / pharmacy & MCA had been announced in respect of most of the colleges. Examination in respect of batches prior to 2k2 was in progress and was being conducted in four nodal centers. The Chairman also informed the Council that unique exam in respect of PTU –Gian Jyoti School of Excellence in TQM & Entrepreneurship (open book) had also been conducted.

Thereafter the regular agenda was taken up:

Item No. 25.1 To confirm the minutes of the 24th meeting of the Academic Council at RIET, Kaithajra

The Registrar informed the council that the proceedings of the 24th meeting had been circulated to all the members on 03 April 2006, the University had not received any comments from any of the members. The council confirmed the proceedings.

Item No. 25.2 Action taken report on the minutes of the 24th meeting of the Academic Council

To report on Action taken report on the minutes of the 24th meeting of the Academic Council:

(a) Dean Academics briefed on the action taken under the following:

(i) 24.8 M. Pharma Fee Structure

(ii) 24.10 Review of Ph.D. Regulations.

(iii) 24.11 New courses (The council recommended approval of status of new courses)

(b) Some of the members informed the council that they have missed out on applying for the new courses for various reasons. The Chairman directed that all applications for new courses and increase in intake must reach the University by 7.7.06. Thereafter no applications shall be entertained for the current academic session.

The Chairman also directed that the syllabus for the new courses should be referred to the respective Board of Studies within one weeks' time. In case Board of Studies for the proposed course did not exist, it would have to be constituted. The council authorized the Vice-Chancellor to approve the scheme of syllabus as prepared by the respective Board of Studies.

(c) Dean Examination briefed the Council on the issue of regulations for providing a scribe for students who were incapacitated to record in writing their response to an examination. After deliberations, it was decided that a scribe may not be provided where:

(i) Evaluation of dexterous skills is involved

(ii) An alternative, such as Braille computer is available

(iii) The individual has any other improvised means of writing

The issue of level of knowledge of the scribe was also deliberated upon and it was decided that the local controller of examination is the best judge and may take appropriate decision.

The council recommended the regulations for incorporation.

(c) Dr. V.P. Sandlas, Chairman of the committee for the award of dual degree under Item No. 24.17 informed the council that a meeting of the committee had been convened at 0930 on 30 June 2006. The committee in its meeting had deliberated on the issue and had proposed a tripartite MoU in all such cases. The parties involved would be:

(i) PTU

(ii) The college / institute proposing

(iii) The University which would provide the second degree.

Modalities, however, would require to be worked out in case to case basis. The detailed minutes of the meeting would be circulated to all the members.

Item No. 25.3 To brief on decision taken in the 22nd meeting of BOG

The Registrar briefed the Council on the decisions taken by the BOG on recommendations made to it. The Registrar also briefed on other decisions of the BOG as included in the agenda under Item No. 25.3 para 2 (a) & (b). The Council noted the decisions.

Item No. 25.4 To inform on status of construction of the University building

The Registrar briefed on the current status of the construction work of the administrative block as also the new works approved by the BOG.

Item No. 25.5 **To approve Academic Calendar 2006-07**

The Council approved the academic calendar.

(a) While deliberating on the Academic Calendar, it was brought out that the students' registration has been allocated for two days only. Since most of the students have either proceeded on training or on vacations, it may not possible to inform all the students to report to register for on these two days only.

The Registrar informed that the issue of the registration had been considered by the council under item no. 24.19 (b). The registration forms in the form of OCR are printed and available in the University (free of cost). However, registration for the next semester (odd) may be extended.

The Chairman directed the following:

(i) Registration shall be carried out by the colleges between 31.7.06 to 7.8.06. The forms of all the students registered must reach to the university by 10 Aug 2006.

(ii) Extended registration may be conducted by the colleges up to 16 Aug 06 on payment of fine of Rs. 500/- per student and up to 23 Aug on payment of Rs. 1000/- per student. All forms under this category must reach the university (Registrar's Office) by 25 August 06.

(iii) The students who do not register upto 23 Aug 06, would have to pay a fine of Rs. 3000/- . Such fine shall be applicable up to cease work of 31 Aug 06. Forms under this category must reach the university on 02 Sep 06 (Saturday).

(iv) There shall be no registration after 31 Aug 06

(v) The Chairman relaxed the condition of registration for the semester starting from Aug –06 in respect of the students who have proceeded on six months industrial training.

The above relaxations (I-iv) are for the session starting from Aug-06. Even semester registration may be reviewed in the next meeting of the council.

It was resolved that as far as possible the same must be strictly adhered to.

m No. 25.6 To approve examination of a subject in the latest syllabus

e Council recommended an amendment to the academic regulations to incorporate amination in the latest syllabus applicable. The Council also recommended termination of an equivalent subject by the BOS in case a subject had been taken off scheme or declared obsolete.

m No. 25.7 Ratification of new colleges and increase in intake.

e council recommended the colleges, which had been found to be suitable for nduct of courses under PTU. The Council also authorized the Chairman to include y other new college that may come up. The Chairman may recommended an rease / decrease in the existing courses /colleges.

m No. 25.8 To review date sheet and to make recommendations

e Chairman constituted the following committee to review the date sheet proposal and system of examination and make recommendations:

1.	Dr. K.N.S. Kang	Director, PCTE, Baddowal
2.	Prof. C.L. Kochher	Principal, DAVIET, Jalandhar
3.	Dr. H.S. Sahota	Director, SIIC, Pathankot
4.	Col. H.S. Sangha	Director, GNIMT, Ludhiana
5.	Dr. N.L. Arora	Director, SSIET, Patti
6.	Dr. S.C. Prashar	Principal, LIT, Phagwara
7.	Dr. K.D. Mannan	Vice-Principal, LCET, Katani Kala

m No. 25.9 Nomination to NSS / Sports Cultural Councils

e Council appreciated the efforts of the three councils. It was proposed that the work ne be brought on record. The Academic Council approved the three councils to ntinue for the academic session 2006-07. The Chairman may co-opt more members deemed necessary.

Item No. 25.10 **Proposal to install 'Technology Satambh" Award to recognize work of eminent Technologists, Engineers, Scientists and Academicians**

The Council approved installation of Technology Satambh" Award to recognize work of eminent Technologists, Engineers, Scientists and Academicians. It was decided that there should be:

(a) Specified criteria for award.
(b) Modalities of award to be worked out
(c) Methodology of award may be laid.
(d) Peer-recognition to be given importance while specifying criteria.

The following committee was constituted for the purpose:

(i)	Dr. V.P. Sandlas	Chairman
(ii)	Dr. J.K. Sharma	Principal, SPCET, Julan Kalan
(iii)	Dr. R.P. Singh	Principal, RIET, Railmajra
(iv)	Dr. A.S. Bansal	Director, Butta College of Engg. & Tech. Bhutta

The award would carry financial benefit of Rs. 12 lacs and number of award to be maximum of five. This would normally be bestowed on the annual convocation day.

Item No. 25.11 Proposal of Celebrate Technology Day in the month of July

The Council approved the agenda point

Item No. 25.12 To hold 5th convocation of the University in Sep – 2006

It was deliberated that Hon'ble PM may be invited to be the Chief Guest to the convocation.

Item No. 25.13 **To review Regional Centres and their functioning**

It was discussed and brought out that the university regional centers are not performing the intended function. Need to review the whole system was identified. It was approved that such review should not hold admissions to the centers during the current session. Hence we may continue with the system for the session 2006-07. In the mean time weak areas and centers not performing the desired task satisfactorily, could be identified and remedial measures proposed.

The Chairman informed the council that Dean (Exam), Dr. Siby John has been permitted to return to his parent department at his own request. The Chairman brought out that during the period of tenure of Dr. Siby John as Dean (Exam) the following had been accomplished:

(a) The overall picture of PTU had improved raising image of the University.
(b) There was absolute transparency in the system.
(c) Dr. John had worked in a system, which had constraints. Despite these constraints, Dr. John had been able to announce results accurately and within the specified time frame.
(d) The section had been able to maintain secrecy and bring out the result in time.

The Council members proposed that their appreciation may be put on record.

Item No. 25.14 **To deliberate on number of candidates , a Supervisor may be Guide in Pharmaceutical Specialties.**

The council deliberated on the issue and it was resolved that the matter may be referred to the committee constituted under item no. 24.10 in the 24th meeting of the Academic Council.

Item No. 25.15 **To approve special migration in 5th semester on medical grounds.**

The University has received applications from the following students for migration in 4th semester on medical ground:

Sr. No.	Particulars	From	To
1.	Kirandeep Singh S/o Gurdev Singh, Univ. Roll no. 40704027 B.Tech (ECE)	GGS college of Engg. & Tech. Kharar	Shiv Shankar Institute of Engg. & Tech
2.	Dupinder Kaur, D/o S. Santokh Singh, Univ. Roll No. L-42825060	Rayat College of Pharmacy, Railmajra	LIT (Pharmacy), Phagwara.

Supporting Medical certificates in respect of the above students have been received. The academic council has recommended the migration for approval of the Board.

Item No. 25.16 **To receive abstract for award of Ph.D. Degree in respect of Shri Harsh Kumar Verma to make recommendations.**

The Council recommended to the BOG for the award of Ph.D. to Shri Harsh Kumar Verma on "Numerical Solution and Software Development of Volterra Integral and Integro-differential Equations using Spline Interpolations".

Supplementary Agenda

Item No. 25.17 **To review the Academic Regulations –2004 and its implications. To approve repealing of clause 6.1 and 6.2 in Academic Regulations-2004.**

The Academic Council recommended the agenda for approval of the BOG.

There being no other points the meeting came to an end with a vote of thanks to the chair.

(Dr. M. S. Grewal)
Registrar
12 July 2006

Action taken report on 25th Academic Council held on 30th June, 2006 at 1130 hrs in the Conference Hall of GNA Institute of Management and Technology, Phagwara

Item No.	Item	Action taken
25.2	Action taken report on the minutes of the 24th meeting of the Academic Council	Regulations for Ph.D, M. Tech.(Full time and Part Time) is under progress.
25.3	To brief on decision taken in the 22nd meeting of BOG	New courses as approved by the BOG have been inducted during the current academic session. The details of the dual degree has been worked out and is under compilation.
25.5	To approve Academic Calendar 2006 -07	Academic Calendar as approved has been implemented.
25.6	To approve examination of a subject in the latest syllabus	Item had been referred to the BOG and the same has been referred back to the Academic Council for review (Covered under item No 26.3)
25.8	To review date sheet and to make recommendations	The committee held a meeting. The revised datesheet as recommended by the committee shall be issued in due course of time. The other recommendations of the committee shall be put up in the next meeting.
25.9	Nomination of NSS / Sports Cultural Councils.	NSS / Sports Cultural Council has been constituted.
25.10	Proposal to install "Technology Satambh Award to recognize work of eminent Technologists, Engineers, Scientists and Academicians	The BOG approved installation of Technology Satabmbh. Committee for working out modalities has been convened
25.11	Proposal to Celebrate Technology Day in the month of July	Technology Day could not be held in July. The same shall be held whenever possible next.
25.12	To hold 5th convocation of the University in Sept – 2006	It is proposed to hold convocation in the last of October, 2006. Necessary action to invite the Chief Guest has been initiated.
25.13	To review Regional Centres and their functioning	Admission to M. Tech. in Regional Centres was conducted on 6th August, 2006. Second Counselling for the same is due on 19 September, 2006. One Centre at SSIET, Dera Bassi has been closed.
25.15	To approve migration in 5th semester on medical grounds	Migrations have been notified, however, one candidate had withdrawn.
25.16	To receive abstract for award of Ph.D. Degree in respect of Shri Harsh Kumar Verma to make recommendations	BOG has approved award of Ph.D. Degree to Shri Harsh Kumar Verma, the same shall be awarded in the next convocation.
25.17	To review the Academic Regulations – 2004 and its implications. To approve repealing of clause 6.1 and 6.2 in Academic Regulations - 2004	Covered under item No. 26.3

REGULATIONS FOR BACHELOR OF TECHNOLOGY / BACHELOR OF ENGINEERING COURSES

General

The University shall undertake and supervise the instructions and award of Bachelor's Degree in the following disciplines and nomenclature as notified by the All India Council for Technical Education (AICTE): -

i. Aeronautical Engineering
ii. Agricultural Engineering
iii. Automobile Engineering
iv. Applied Electronics and Instrumentation
v. Automation and Robotics
vi. Biomedical Engineering
vii. Bio-Technology
viii. Ceramic Engineering/Technology
ix. Chemical Engineering
x. Civil Engineering
xi. Computer Science & Engineering
xii. Electrical and Electronics Engineering/Electrical Engineering
xiii. Electronics & Communication Engineering
xiv. Environmental Engineering
xv. Food Technology
xvi. Industrial Engineering & Management
xvii. Information Technology
xviii. Instrumentation & Control Engineering
xix. Leather Technology
xx. Marine Engineering
xxi. Materials Science & Technology
xxii. Mettalurgical Engineering
xxiii. Mechanical Engineering
xxiv. Mining Engineering
xxv. Oil and Paint Technology
xxvi. Polymer Science and Rubber Technology
xxvii. Printing Technology
xxviii. Production Engineering
xxix. Pulp and paper Technology
xxx. Sugar technology
xxxi. Textile Engineering/Technology
xxxii. Transportation Engineering

and any other discipline or nomenclature as introduced from time to time.

1. Duration

The duration of Bachelor of Technology/Engineering, course will be four years, divided into eight semesters. The duration of each semester will be 90 teaching days, according to the following schedule :-

August to December	:	Odd Semester (1, 3, 5, 7)
January to May	:	Even Semester (2, 4, 6, 8)
June to July	:	Summer Workshop / Industrial Training / Tours etc.

2. Eligibility for Admission

The admission to the above courses will be based on merit in an entrance test provided the candidate is otherwise eligible for admission.

2.1 The candidate must have passed 12th Class examination on 10+2 pattern with Physics and Mathematics as compulsory subjects, along with any of the following subjects:

(i) Chemistry (ii) Bio-technology (iii) Computer Science (iv) Biology.

from the State School Education Board or any other State or Central Board recognized by the Punjab Technical University which is equivalent to 12th class examination of 10+2 pattern.

2.2 The eligibility for admission shall be as per the notification of All India Council for Technical Education (AICTE) from time to time.

2.3 He/ She should bear a good moral character.

2.4 He/ She must be in a good mental and physical health. Each candidate before admission will have to undergo a medical fitness examination and shall have to produce a medical fitness certificate, as prescribed by the University.

2.5 A student admitted to B. Tech. / B.E. programme must be on the rolls of an affiliated Engineering College/ Institute to attend the classes regularly as per rules and shall pay such fees to the College/ Institute as decided by the University / College / Institute from time to time.

2.6 Change of discipline from one branch of Engineering to another within the same College will be allowed after completion of 2nd semester and before the start of 3rd semester. It will be strictly according to the rules as framed by the University from time to time.

3. Examinations

3.1 General

3.1.1 The University examination shall be held at the end of each semester as per the prescribed scheme of examination for each discipline and date sheet notified by the University.

3.1.2 It will be the responsibility of the candidate to collect all information regarding examination schedule, roll number slip and result etc. from the College/ Institute office. Students will collect the University Roll Number slips at least one day before the commencement of the examination.

3.1.3 The College/ Institute office shall display on the Notice Board, the schedule of examination/ date sheet etc. as soon as it is received from the University. The University will supply this information not less than fifteen days before the start of examination.

3.1.4 No candidate will be allowed to appear in the University examination without the Roll Number Slip.

3.1.5 The medium of instruction and examination shall be English

3.2 Eligibility

3.2.1 In order to be eligible to appear in any semester examination, a candidate must have had his Examination form submitted to the Registrar through the Principal of his/ her College/ Institute along with the following certificates signed by the Principal :-

(i) of good character.

(ii) of having remained on the rolls of the College, and

(iii) of having attended not less than 75% of the aggregate scheduled periods, in each prescribed course of Theory (Lectures plus Tutorials) and Practical (including Workshop Training, Seminar, Project, Industrial Training etc.);

(iv) A student shall have to attend 75% of the scheduled lectures together with Theory & Practical, otherwise he/ she shall not be allowed to appear in that subject in the University exam. A student detained in the course (s) would be allowed to appear in the subsequent university exams only on having completed the attendance in the subject, when the course is offered as regular course(s), as per the rules.

(v) The Dean of the University in case of University/constituent college and Principal/Director in case of affiliated institutions may condone attendance shortage upto 10% in the total for reasons to be recorded in writing (owing to serious illness, calamity, participation in any game / sports / competitions with approval of the institution etc.). However, under no circumstances, a student who has an aggregate attendance of less than 65% in a semester shall be allowed to appear in the semester end examination.

(vi) Attendance shall be counted upto seven days prior to the date of commencement of the University theory examinations. Dean of the University/Director/Principal, as the case may be, shall announce the names of all such students who are not found eligible to appear in the semester end examinations at least 7 calendar days prior to start of the semester end examinations and simultaneously intimate the same to the controller of examinations.

(vii) In case any student appears in the examinations by default, who in fact has been detained by the institute, his/her results shall be treated as null and void.

3.3 Examination Fee

3.3.1 The amount of examination fee to be paid by a candidate and the last date by which his / her examination form and fee must reach the Registrar, shall be notified by the University.

(i) Examination forms will be accepted with late fee of Rs 1000/- upto 7 days before the commencement of examinations.

(ii) Under very special circumstances, examination forms shall be accepted by the University upto two days before the commencement of examination on payment of late fee of Rs 2000/-

(iii) Examination form shall be accepted upto the evening previous to the date of examination on payment of late fee of Rs 5000/- with the approval of the Vice - Chancellor.

3.3.2 The examination fee for one or more reappear/ repeat papers of any examination shall be the same as for the whole of semester examination. Separate admission forms for papers belonging to different semesters are to be filled by the candidate indicating paper(s) offered for each semester examination.

3.4 Reappear

3.4.1 In case of reappear papers, candidate shall be required to submit their Examination Forms within 15 days from the date of declaration of the result, or the regular date for submission of examination forms, whichever is later.

4. Evaluation System

4.1 In a theory paper, the question paper will be set by an examiner appointed by the Vice Chancellor from a panel of examiners, proposed by the Board of Studies of that discipline. A sample question paper of the concerned discipline will be supplied to the paper setter for guidance. The paper setter shall be a teacher from some other University or of the affiliated College/ Institute of the University preferably not teaching that course in that semester.

4.2 The answer books will be evaluated by table marking in the University or evaluation centres set up in affiliated colleges / institutes. For each subject, a panel of evaluators will be appointed. These panel of examiners will be constituted by the Board of Studies of the concerned discipline from amongst the teachers of affiliated Colleges of the University preferably teaching that course in that semester.

4.3 Practical examination in each practical subject will be conducted jointly by an internal and an external examiner. The internal examiner will be from the College, where examination is being conducted, while the external examiner may be from any of the affiliated Colleges of the University or from outside. The lists of the examiners will be prepared by the Board of Studies of the concerned discipline. The external examiner will be appointed by the Vice Chancellor from the panel of examiners proposed by the board of studies.

4.4 In case an examiner for practical examination does not report at the scheduled date, the Principal of the College will make the alternative arrangement from within the College or from outside and intimation of the same will be sent to the University immediately.

5. Certification

5.1 Conditions for Certification

5.1.1 Every candidate shall be examined in the subjects according to the syllabi and course outlines prescribed from time to time.

5.1.2 Each paper shall be of 100 marks, out of which the candidate shall be examined for 60 marks on the basis of external paper setting & evaluation. Remaining 40 marks in each paper, excluding project report seminars and practicals, shall be assigned to internal assessment. It will be based on performance of the students in house tests, take-home assignements and class participations, etc. The project report seminars and practicals, shall be evaluated with weightage of 60% internal and 40% external examinations.

5.1.3 To pass in a subject a candidate will be required to obtain a minimum of 40 %marks. However, to become eligible for the award of degree, a student must obtain a minimum of 50 % of the total marks of all the courses prescribed for the 8 semesters.

5.1.4 In case the student fails to obtain a total of 50% marks in any subject at any stage, he/she may improve the percentage of marks by reappearing in the subject(s) of his/ her choice at the time the subject(s) are being offered next within the specified maximum duration of the course, provided that at the end of 8 semesters improvement shall be allowed only to those students who get an aggregate of less than 50 % marks and the maximum duration of the course is not over.

5.1.5 Reappear / Improvements exams will be taken along the scheduled exams of the coming batches

5.1.6 The enrolment / registration number of the candidate for the course will be valid for the maximum period for the completion of the course mentioned in clause 7.1

5.1.7 The internal assessment/ sessional will be based on the continuous evaluation of the students, through class tests / mid semester tests, quizzes, seminars, home assignments and class work. A minimum of three class tests / mid semester tests will be held during the semester, out of which, the best two shall be considered for awarding internal assessment marks.

5.1.8 The sessional marks will be submitted to the University within fifteen days after the close of classes for the semester.

5.1.9 The sessional marks submitted by different Institutions will be moderated by a Moderation Committee appointed by the Vice – Chancellor, if required.

5.1.10 There shall be no reappear in the sessional / internal assessment of Theory and Practical subjects. The marks obtained by the students in sessionals / internal assesment of both Theory and Practicals shall be added as such to the marks obtained in written Theory and External Practical examinations respectively.

5.1.11 The students will have to obtain a minimum of 40 % marks in written Theory and external Practical examination separately to pass the subject.

5.1.12 At the end of each semester the University will conduct semester examination. A student will be supplied detailed marks card (DMC) indicating the marks obtained in each course passed, credits earned and upto date credits earned.

5.1.13 The University will publish the final result and the division obtained by each candidate when the candidate has cleared all the papers / subjects of all the eight semester examinations.

5.2 Award of Degree

A student will be awarded degree subject to the following conditions:

(i) must have obtained a total of 50 percent marks at the end of eight semesters of study, as applicable.

(ii) must have enrolled for NCC or NSS and should have attended the prescribed number of camps/ projects as prescribed by the University.

(iii) has paid all the fees and other charges including fines, if any, due from him to the University and the College.

(iv) has no case of indiscipline pending against him/ her.

5.3 Divisions

The University shall publish the final result indicating the marks obtained in aggregate marks for 8 semesters and the division obtained by each student on the following basis:-

	Division	**Percent Marks**
(i)	First with Distinction provided all examinations are passed in first chance with regular classes in the normal duration of 4 years	More than 70%

as applicable without any reappear at any stage.

(ii) First 60% or more

(iii Second 50% or more but less than 60%

5.4 Award of Prize or Medal

Candidate shall be eligible for the award of a prize or a medal, if

i. he / she passes the Bachelor of Engineering / Technology examinations in four years, and
ii. has passed all the subjects in the first attempt available to him /her.

6. Conditions for Promotion

6.1 Examination

Any bonafide student, subject to provisions of regulations 3.2 and 6.2 (a)(b), who appears for the examination conducted by the University, shall be promoted to the next higher semester and shall carry forward, all course(s) in which he/ she is declared fail. The student shall have to pass all papers within the stipulated maximum duration to qualify for the award of university degree, as and when these papers are conducted by the University.

6.2 Attendance

a) **Student detained, due to shortage of attendance, in any subject, shall have to repeat the course afresh and then appear in the concerned subject, whenever it is offered as a regular course. However, if a student is short in attendance in all the courses offered during a semester, he shall be required to repeat the semester, along with the next batch of students.**

b) **A student absent without any notice or intimation, in writing to the concerned Principal/ Director, for more than 45 days consecutively in a semester shall be deemed to have withdrawn from the course and his/ her enrolment shall stand cancelled.**

7. Maximum Duration for completion of the Degree requirements

7.1 **To qualify for the award of a degree, the student shall have to pass all the courses and to fulfill all other requirements for completion of degree including attaining the required aggregate within time period of twice the normal duration of the course, failing which, the candidature of the student shall stand cancelled, and no degree shall be awarded.**

8. Powers of Clarification

Notwithstanding anything contained in any of the regulations 'for the time being in force' the University alone, shall be competent to issue clarifications on any of the provisions contained in these Regulations and such clarifications shall not be amenable to challenge in any appropriate forum.

9. Powers of the Vice Chancellor

Notwithstanding any thing contained in these regulations the Vice - Chancellor shall be competent to allow any relaxation subject to ratification by the Board of Governors.

APPENDIX D

Office of the Vice Chancellor
Rec... no. 1220
Date 25.7.06
Sent to Reg./Dean Acad

Result
Dean (Academic)
We may discuss in next Academic council
25/7

To
The Principal
Lovely Institute
Jalandhar

SUB :- REQUEST FOR THE RELAXATION OF PASSING MARKS FROM 50% TO 40% FOR MS. SIMARAN SINGH D/O SH. KULDEEP SINGH WITH ROLL NO. 29725492 FOR SECOND SEMESTER B-PHARMACY MATHS RE-APPEAR EXAMINATION.

Sir,

With due respect it is stated that my ward Ms. Simaran Singh bearing Roll No. 29725492 had appeared for the re-appear examination of Mathematics subject for second semester held on March 2006. She has secured 32 marks as per the result declare which does not fulfills the requirement of passing marks of 50% as per rules. This condition of securing 50% of marks was applicable about 2-3 yrs back and subsequently the PTU amended and relaxed this condition of pass marks from 50% to 40%. It is worth mentioning here that she has cleared all the semesters of this course and also cleared the GATE test for getting admission into Master degree of Pharmacy for various Universities. So this is the most unfortunate situation for her for not getting 50% marks for Maths –2nd yrs re-appear as mentioned above.

Since she is brilliant student and is keen to obtain higher studies in Pharmacy, it is humbly requested that she may be given relaxation from 50% to 40% of passing marks.

Hence, it is finally prayed that her case may kindly be sympathetically recommended to the worthy Dean of the Punjab Technical University for considering her case for relaxation of percentage of passing marks from 50% to 40%, so that she can get admission to the higher studies of M. Pharmacy.

Thanking you in anticipation.

Yours sincerely

Kulvinder Singh
C/o Ms. Simran Singh
Roll No. 29725492

Recommended & forwarded to Dean (Exam.), PTU for necessary action.
for Navjeet Gulati
25/7/06
Principal
Lovely Institute of Technology (Pharmacy)
Chehru, Phagwara

26th Academic council file
25/7

Appendix- E

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Details of Registration forms received after last date of Registration

S.No.	Regd. No.	Name	Sem.	Branch	Institution
1.	42711011	Sanjeev Kumar	5th	Mech.	GGSCET, Talwandi Sabo
2.	42711009	Sachin Kumar	5th	Mech.	GGSCET, Talwandi Sabo
3.	42711005	Gorav Aditya Mishra	5th	Mech.	GGSCET, Talwandi Sabo
4.	L-52711018	Deepak Kumar	5th	Mech.	GGSCET, Talwandi Sabo
5.	327117013	Jagmindher Singh	7th	Mech.	GGSCET, Talwandi Sabo
6.	527032446	Deepshikha	3rd	CSE	GGSCET, Talwandi Sabo
7.	527032447	Hitesh Madan	3rd	CSE	GGSCET, Talwandi Sabo
8.	527032442	Anupam Sharma	3rd	CSE	GGSCET, Talwandi Sabo
9.	527032450	Karan Sethi	3rd	CSE	GGSCET, Talwandi Sabo
10.	527032444	Ashish Chopra	3rd	CSE	GGSCET, Talwandi Sabo
11.	327043701	Bhupinder Grover	7th	CSE	GGSCET, Talwandi Sabo
12.	598033375	Vareshwar	3rd	CSE	DBEC, Mandi Gobindgarh
13.	59803347	Amit Verma	3rd	CSE	DBEC, Mandi Gobindgarh
14.	5981112822	Arun Kumar Toni	3rd	Mech.	DBEC, Mandi Gobindgarh
15.	40705001	Akaljot Singh Virdi	5th	Electrical	GGS, Kharar
16.	306/05-L	Pankaj Oberoi	3rd	Electrical	GGS, Kharar
16.	307030631	Sumit Sharma	7th	CSE	GGS, Kharar
17.	216042941	Abhinav Kumar	3rd	ECE	GZSCET, Bathinda
18.	514010020	Kamaljit Singh	3rd	CE	GNDEC- Ldh.
19.	L59703024	Dikshit Guleria	5th	CSE	Swami Parmanand
19.	322127432	Gurvesh Sachdeva	7th	PE	SBSCET- Ferozepur
20.	322127433	Harsh Aggarwal	7th	PE	SBSCET- Ferozepur
21.	322127441	Pawan Joshi	7th	PE	SBSCET- Ferozepur
22.	322127443	Ramandeep S. Bhullar	7th	PE	SBSCET- Ferozepur
23.	322127446	Sunpreet Singh	7th	PE	SBSCET- Ferozepur
24.	322127448	Sunny Amardeep S.	7th	PE	SBSCET- Ferozepur
25.	322127450	Varun Joshi	7th	PE	SBSCET- Ferozepur
26.	5031110361	Abhay Kumar Yadav	3rd	ME	BMSCE- Muktsar
27.	5291112077	Narinder Singh	3rd	ME	SSCET, Badhani
28.	5291112102	Vinay Kumar	3rd	ME	SSCET, Badhani
29	39025202	Deepak Kumar arora	7th	B.Pharm.	BISCOP Gagra
30	L-49025060	Ram Niwas Saini	5th	B.Pharm.	BISCOP Gagra

Proposed Fee Structure for B.Sc. (Hotel Management & Catering Technology) / B.Sc. (Media Entertainment & Film Technology) /B.Sc. (Bio-Technology)

No.	Head	Fee (in Rs.)		
		Annual	Odd Semester	Even Semester
	Tuition Fee	23,000/-	11,500/-	11,500/-
	Development Charges	3,500/-	1,750	1,750
	Securities (Refundable) : College Security* Library Security*	 1000/-* 1000/-*	--	--
	Other Charges:			
	Admission Fee	500/-	250/-	250/-
	Library Fee	200/-	100/-	100/-
	Computer Development Fund & Internet Services	1,000/-	500/-	500/-
	Sports & Recreation Admission Fee	50/-	25/-	25/-
	Club Admission Fee	50/-	25/-	25/-
	Magazine & Library activities	200/-	100/-	100/-
	Medical & Health Care Fee	100/-	50/-	50/-
	Souvenir Fee	100/-	50/-	50/-
	Student Welfare Fund and Aid fund	50/-	25/-	25/-
	Periodical Test Fee	200/-	100/-	100/-
	Library Book replacement Fee	50/-	25/-	25/-
	A V Aids	150/-	75/-	75/-
	Identity Card	50/-	25/-	25/-
	Sports Fee	100/-	50/-	50/-
	Club Fee	100/-	50/-	50/-
	Student Amenities Fee	200/-	100/-	100/-
	Alumni Association & house charges	100/-	50/-	50/-
	Placement Charges	500/-	250/-	250/-
	Industrial Visits	250/-	125/-	125/-
	Lab Charges	2500/-	1250/-	1250/-
	University Related Fee (To be remitted to the University)	575/-	575/-**	--
	Hostel Charges: i. Room Rent	1200/- Per Annum (j) Single Seater 1200/- P.A. per student (k) Two Seater 900/- per student (l) Three seater 600/- per student Room with more more than 3 seats 400/- P.A. per student		
	xi. Other charges (Water supply, fan rent, electricity charges and security charges)	600/- P.A.		
	xii. Hostel maintenance Fund (Hostel & Mess Establishment charges)	600/- P.A.		
	xiii. Mess equipment & Utensil Fees	100/- P.A.		

* To be paid at the time of admission only.

**Rs. 575/-for first year and Rs. 275/- for subsequent years.

Note: Fee is to be charged semester-wise.

Punjab Technical University
Course contents for
B.Tech (Bio-Medical Engg)

Course Code	Course Title	Hours Per Week			Ext. Awards	Int. Awards	Total
BM-201	Electronic devices and circuits	4	1	-	60	40	100
BM-202	Network Analysis	3	1	-	60	40	100
BM-203	Biomedical Instrumentation-I	3	1	-	60	40	100
BM-204	Biochemistry	3	1	-	60	40	100
BM-205	Anatomy & Physiology	4	1	-	60	40	100
BM-206	Electric devices and Bio-instrumentation	-	-	3	60	40	100
BM-207	Biochemistry Lab	-	-	3	20	30	50
BM-208	Anatomy and Physiology Lab	-	-	3	20	30	50

BM-201: Electronic devices and circuits

Internal Marks:40
External Marks:60
Total Marks :100

L T P
4 1 0

1. Diode Circuits
pn junction diode, concept of band structure, potential barrier, diode as a circuit element, half wave, full wave and bridge rectifier and determination of rms, average value, ripple factor and regulation, capacitor input, inductor input, RC and RL filter circuits, special propose diode; LED, LCD and Photo- diodes.

2. Bipolar junction Transistors
pnp & npn, transistor construction and characteristics in CB, CE and CC modes. Graphical analysis of transistors as an amplifier, special purpose transistors, UJT (construction and characteristics only), photo- transistors.

3. Field Effect Transistors
Construction and characteristics of junction field effect transistor (JFET), MOSFET (both depletion and enhancement type), CMOSFET's, parameters and equivalent circuit of an FET, biasing of FETs, FET as an amplifier in CS configuration.

4. Transistor Biasing and Stabilization
Operating point, bias stability, various biasing circuits, stabilization against Ico, VBE and beta. Bias compensation methods and thermal runaway.

5. Small Signal Low Frequency Transistor
Analysis of transistor amplifier using h-parameters in CB, CE and CC configuration. Comparison of three configurations in term A1, A21, R1, R0. Frequency response of amplifier. Effect of an emitter bypass capacitor, coupling capacitor, emitter resistance and shunt capacitors on frequency response of amplifier. Analysis of emitter follower using Miller's theorem.

6. **Oscillators:** Condition of Oscillators , Different types of oscillators: RC Phase shift , Wein Bridge, Hartley, calpitt & Crystal Oscilators, Derivation of expression for frequency and amplitude of these oscillators

7. INTRODUCTION TO OPERATIONAL AMPLIFIERS: Block diagram of a typical Op-Amp, Schematic symbol, integrated circuits and their types, IC package types, Pin Identificationand temperature range, Interpretation of data sheets, Overview of typical set of data sheets, Characteristics and performance parameters of and Op-Amp, Ideal Op-Amp, Equivalent circuit of an Op-Amp, Ideal voltage transfer curve, Open loop configurations : Differential, Inverting & Non Inverting. Practical Op-Amp: Input offset voltage, Input bias current, Input offset current, total output offset voltage, Thermal drift, Effcet of variation in power supply voltages on offset voltage, Change in Input offset voltage and Input offset current with time, Temperature and supply voltage sensitive parameters, Noise, Common Mode configuration and common mode rejection Ratio.

BM-202: Network Analysis

Internal Marks:40
External Marks:60
Total Marks :100

L T P
3 1 0

Circuits Concepts : Circuits elements,
Independent and dependent sources, signals and wave forms; periodic and singularity voltages, step, ramp, impulse, Doublet. Loop currents and loop equations, node voltage and node equations, Network Theorems, Superposition, Thevenin's Nortan's Maximum Power Transfer, Reciprocity.

Time and Frequency Domain Analysis :
Representation of basic circuits in terms of generalised freq. & their response, Laplace transform of shifted functions, transient & steady response. Time domain behaviors from poles and zeros. Convolution Theorem.

Network Synthesis :
Network functions, Impedance & Admittance function, Transfer functions, Relationship between
transfer and impulse response, poles and zeros and restrictions, Network function for two terminal pair network. Sinusoidal network in terms of poles & zeros. Real liability condition for impedance synthesis of RL & RC circuits. Foster and Cauer forms.

Filters Synthesis :
Classification of filters, characteristics impedance and propagation constant of pure reactive network, Ladder network, T section, IT section, terminating half section. Pass bands and stop bands. Design of constant-K, m-derived filters. Composite filters.

Books:

1. Network Analysis & Synthesis by Van Valkenberg
2. Network Analysis and Synthesis by Sudhakar Sham Mohan
3. Network Synthesis by IVS Iyer
4. Electric Circuits by JA Administer
5. Circuit Theory by Chakraborty

BM-203: Biomedical Instrumentation-I

Internal Marks:40
External Marks:60
Total Marks :100

L T P
3 1 0

Measurment:
Fundamentals of Medical Instrumentation : Types of Medical Instruments Recording and Monitoring Instruments: Fundamentals of Medical Instrumentation, Bioelectric signals (ECG, EMG, ECG, EOG & ERG) and their characteristics, Bioelectrodes, electrodes tissue interface, contact impedance, effects of high contact impedance, Biomedical recorders,Recording Systems ,

Oximetry
Blood Flowmeters,Cardiac Output Measurement,Pulmonary Function Analyzers,Clinical Laboratory Instruments, Blood Gas Analyzers,Blood Cell Counters,Audiometers and Hearing Aids

Biosensors and transducers
Biological sensors in human Body, Physiological monitoring , Need for sensor system in diagnosis.
Transducers for Biomedical Application Resistive transducers - Muscle force and Stress (Strain guge), Spirometry (Potentiont), humidity, (Gamstrers), Respiration (Thermistor) Inductive Transducers - Flow measurements, muscle movement (LVDT) Capacitive Transducers - Heart sound measurement, Pulse pick up Photoelectric Transducers - Pulse transducers, Blood pressure, oxygen Analyses Piezoelectric Transducers - Pulse pickup, ultrasonic blood flowmeter Chemcial Transducer - Ag-Agfallas (Electrodes, PH electrode)

Patient Monitoring and diagnostic Systems
Digital Pulse Monitor, Digital Heart Rate Monitor, Diagnostic Aids Electronic Stethoscope, Digital Tele – Thermometer, ECG,EEG, Electromyograph, Digital Electronic Algometer,Biomonitors,PH meters

RECOMMENDED BOOKS

1. Medical Instrumentation by John. G. Webster –John Wiley
2. Principles of Applied Biomedical Instrumentation by Goddes & Baker – John Wiley
3. Biomedical Instrumentation & Measurement by Carr & Brown-Pearson
4. Biomedical Instrument by Cromwell-Prentice Hall of India, New Delhi
5. Hand book of Medical instruments by R.S. Khandpur –TMH, New Delhi
6. Medical Electronics and Instrumentation by Sanjay Guha – University Publication
7. Introduction to Biomedical electronics by Edwand J. Bukstein –sane and Co. Inc. USA
8. HB OF BIOMEDICAL INSTRUMENTATION: by Khandpur, R.

BM-204: Biochemistry

Internal Marks:40
External Marks:60
Total Marks :100

L T P
3 1 0

Introduction to biochemistry:
Biomolecules cells and biochemical methods, Biochemistry & Medicine, water and PH, structure functions biosynthesis of proteins & Enzymes: Amino Acids, Peptides , Myoglobin and Haemoglobin, Mechanism structure and regulation of Enzymes, DNA, RNA

Bioenergetics and the Metabolism of carbohydrates and Lipids:
Bioenergetic and ATP Cycle, Biological oxidation, Metabolic and energy transfer Pathways. Physiological significance of carbohydrates, Lipids. Metabolism of unsaturated fatty Acids, cholesterol synthesis transport and excretion

Physical Biochemistry : Molécular motion,. Kinetic theory of gases. Maxwell-Boltzmann. Transport phenomena, Fick's laws, diffusionequation. Applications to biochemistry: dialysis, liquid chromatography, sedimentation,electrophoresis.Chemical and biochemical kinetics. General kinetics. Differential and integrated rate laws. Mechanisms of chemical and biochemical reactions, enzyme kinetics. Transition state theory. Diffusion-limited processes. Kinetics methods in biochemistry. Diffraction, Scattering. :X-ray, electron, neutron diffraction, crystal structures, space symmetry groups. Structure determination of biomacromolecules. Thermodynamics of solutions, Gibbs-Duhem equation, Biological Thermodynamics

Biochemistry of Various biological Systems:
Structure and functions of Vitamins, Biochemistry of Nutrition, Digestion & Absorption, Plasma Proteins immunoglobulins & clotting factors`

BM-205: Anatomy & Physiology

Internal Marks:40
External Marks:60
Total Marks :100

L T P
4 1 0

ANATOMY

Introduction of anatomy and Histology, Elementary Histology of cell, Tissues of the body organs and system, Elementary Anatomy and Histology of :-Skeletel System :Development of bones, types of bones, Micro-anatomical and gross structure of bones, Osteology of human skeleton and various movement of joints.
Muscular System: Structure and type of muscles in human body, important muscles and their group action.
Criculation System: Structure of heart and blood vessels, Systemic criculation, pulmonary circulation, Portal criculation, and coronary circulation.Lymphatic System:Lymph vessels, Lymph nodes and Lymphoid organs, their structure and functions.

Elementary Anatomy and Histology of Digestive System: Gastrointestinal tract and associated glands (Salivery Glands, Liver, Pancreas etc).Respiratory System:Trachea, Lungs including other air passages.Urinary System, Kidney, ureter and urinary bladder etc..Endocrine System:Thyroid glands, Parathyroid glands, Adrenal glands and Pituitary glands. i.Femal and Male reproductory organs System. Skin and its appendages, Special sense organs: Eye, Ear, Nose Taste buds, Subcutaneous sense organs.
I.Nervous System: Brain, Spinal cord and peripheral nerves.

Physiology of Blood:
Blood volume, composition and function of blood, haemopoesis, blood coagulation, blood groups, body fluids. Cardiovascular System :General plan of circulatory system, function of heart and blood vessels (arteries, arterioles, capillaries and veins) heart sound and E.C.G. nervous control of heart and blood vessels, regular of blood pressure. Respiratory System: Functional anatomy of respiratory system, mechanism of breathing and exchange of gases in the lungs. Regulation of respiration, Oxygen and. carbondioxide carriage, anoxia, dysproes, cyanisis, artificial respiration and pulmonary function test. Gastrointestinal System : Alimentary canal and its various glands, digestion of food in mouth, stomach and small intestines, gastro-intestinal tract movements and absorption. Function of liver and liver function tests and metabolism.

Physiology of Excretory System: Structure and function of kidney and Urinary bladder, Structure and function of skin.Endocrine Glands & Reproductive System: Endocrine glands and their function. Regulation of endocrine secreation. Physiology of male and female reproductive System. Muscular System: Types of muscles, innervation of muscles, neuromuscular transmission, mechanism of muscular contraction. Nervous System : Neuron and its function, spinal cord and reflex action, sensory end organs and sensory path ways, cerebral cortex and motor path ways. Maintenance of posture and locomotion, automatic nervous system, Physiology of vision, hearing test and olfaction.

BM-206: ELECTRONIC DEVICES AND CIRCUITS AND BIOINSTRUMENTATION

Internal Marks:40 L T P
External Marks:60 0 0 3
Total Marks :100

1. Study of Half wave, full wave & Bridge rectifiers.
1. 2. Study of simple capacitive, T & filters
2. Study of Zener regulator.
3. To plot the input and output characteristics of CE configuration.
4. To plot the input and output characteristics of CB configuration.
5. Determination of h- parameters of a transistors using output characteristics.
6. Design of transistor biasing circuits.
7. Study of frequency response of RC coupled amplifier.
8. Study of an emitter follower circuit.
9. To plot JFET characteristics in CS configuration.
10. Study of parameters of practical op-amp
11. Use of op-amps- Non-inverting and Inverting amplifier, buffer, adder, subtractor
12. Study of different amplifier configurations and the corresponding frequency responses for an RC-coupled amplifier with BJT/FET.
13. Study the working of Electronic Stethoscope, Digital Tele – Thermometer, ECG, Biometers, Blood Gas Analyzers, Blood Cell Counters,Audiometers and Hearing Aids,Biomonitors,PH meters

BM-207: Biochemistry Lab

Internal Marks:30
External Marks:20
Total Marks :50

L T P
0 0 3

1. PH and buffer solutions: determination of PH using Indicators,Titaration of Muixture of strong and a weak acid , Titaration of strong acid with a strong base. Titaration of weak acid with a strong base. Pka determination, Pka value of dicarboxylic acid, Acetate buffers, titration curves of Amino Acids
2. separation of amino acid by ion exchange chromatography,
3. Separation of protein by ion exchange chromatography /partition chromatography
4. Separation of lipids by thin layer chromatography gel filtration
5. The preparation of an affinity coulmn
6. The preparation of serum proteins by electrophoresis on cellulose acetate
7. Polyacrylamide gel electrophoresis
8. Gradient Gel electrophoresis of protein and multiple molecular forms of acetylcholinesterase.
9. Quantitative Precipitin test
10. Immunoelectrophoresis
11. Determination of albumin by Laurell Rocket Immunoelectrophoresis
12. Demonstration of BEER 's Law
13. The Validity of BEER's Law for chlorimetric estimation of Creatinine
14. Determination of Pka value of P-nitrophenol
15. Experiments with hemoglobin
16. Sensitivity of Fluorescence assays
17. The quantitaive estimation of amino acids using the Ninhydrin reaction
18. Estimation of carbohaydrate by the anthrone method
19. The Sponification value of a fat
20. Yeast isocitrate dehydrogenase : an allosteric enzyme
21. Effect of Cholestrol on anion permeability of a phospholipid Membrane
22. The Respiration of mitochondria and oxidative phosphyrelation
23. Isolation of bacterial DNA

BM-208: Anatomy and Physiology Practical

Internal Marks:30
External Marks:20
Total Marks :50

L T P
0 0 3

1. Study of various organs of human body on chart as well as human anatomy kits.
2. EMG electrode placement and skin preparation
3. Determine HR via palpation of the radical artery
4. Determine HR telemetrically
5. Determine blood pressure using a manual sphygmomanometer
6. ECG electrode placement and skin preparation
7. Undertake a spirometric test to determine FVC, FEV1.0 and MVV pred
8. Determine MVV using a Douglas bag and dry gas meter
9. Undertake a graded exercise test without making physiological measurements
10. Determine VE during exercise
11. Determine resting metabolic rate
12. General methods of physical examination manual and with electronic instruments like stethoscope , sphygmomanometer, Biomonitor etc

Punjab Technical University, Jalandhar.
B.Sc Biotechnology
Study Scheme

1st Semester

S. No.	Course No.	Course Title	L	T	P	Internal Marks	External Marks	Total Marks
1.	BSBT- 101	Technical Writing & Communication Skills	2	-	-	40	60	100
2.	BSBT-103	Inorganic Chemistry	3	1	-	40	60	100
3.	BSBT-105	Introduction & Fundamentals of Biotechnology	3	1	-	40	60	100
4.	BSBT-107	Computer Application in Biotechnology	3	1	-	40	60	100
5.	BSBT-09(M)	Basic Math & Biostat	4	-	-	40	60	100
6.	BSBT-109(B)	Basics of Biosciences	3	-	-	30	20	50
7.	BSBT-111	Inorganic Chemistry Lab	-	-	2	60	40	100
8.	BSBT-113	Introduction & Fundamentals of Biotechnology Lab	-	-	2	60	40	100
9.	BSBT-115	Basics of Biosciences Lab	-	-	4	30	20	50
10	BSBT-117	Computer Application in Biotechnology Lab	-	-	2	60	40	100
	Total		18	3	10			900

BSBT – 101 Technical Writing & Communication Skills

1. **Communication, its types and significance**: - Communication, Process of communication i kinds, channels and role in the society.

2. **Reading skills:** - Process of reading, reading purposes, models, strategies methodologie reading activities, structure of meaning techniques.

3. **Writing skills:** - Elements of effective writing, writing styles, scientific and technical writing.

4. **Grammar:** - Transformation of sentences, words used as different parts of speech, one wo substitution, abbreviations, technical terms etc.

5. **Business correspondence:** - Business letters, elements of business writing, kinds of busine letters, office order memorandum, report, purchase order, quotations and tenders, jo application letters, personal resume and curriculum vitae etc.

6. **Listening skills:** - Process of listening, barriers to listening, effective listening skills, feedba skills.

7. **Speaking skills:** - Speech mechanism, organs of speech, production and classification of spee sounds, phonetic transcription, skills of effective speaking, components of an effective ta oral presentation and the role of audio visual aids in it.

8. **Discussion, meeting and telephone skills:** - Group discussion, conducting a meeting, attendi telephonic calls

Books Recommended

1. **Bhattacharya, Indrajit**. An approach to Communication Skills
2. **Bansal, RK and Harrison, JB.** Spoken English
3. **Wright, Chissie.** Handbook of Practical Communication Skills

BSBT – 103 Inorganic Chemistry

1. Periodic Properties

Position of elements in the periodic table, effective nuclear charge and its calculations, atomic a ionic radii, ionization energy, electron affinity and electro negativity definition, methods determination sends in periodic table and applications in predicting and explaining the chemi behavior.

2. Chemistry of Noble gases

Chemical properties of noble gases, chemistry of xenon, structure and bonding, in xenon compoun clathrates, types and stability.

3. Chemical Bonding

(a) Covalent bond, directional characteristics of covalent.

(b) Valence bond theory and its limitations.

(c) Various types of hybridization and shapes of inorganic molecules and ions-BeF_2, $SnCl_2$, XeF_4, B NH_4, H_2O, ClF_4, ICl_2, PF_6, SF_6 and IF7.

(d) Molecular orbital theory, Homonuclear (elements and ions of 1st and 2nd row) and heteronucl (BO, CN, CO', NO, CO, CN'), Multicenter bonding in electron deficient molecules (BORANES).
(e) Weak interactions, Hydrogen bonding & vandor walls forces.

4. Coordination compounds

Introduction, Werner's coordination theory, naming of coordination compounds, stereochemis Geometrical isomerism and optical isomerism in compounds having coordination number 4 and 6.

5. Bonding in metal complexes

Valence bond theory, electroneutrality and back bonding, limitations of VB theory, Crystal field theo Splitting of d orbitals, calculation of CFSE in high spin and low spin, octahedral and high s tetrahedral complexes, thermodynamic effects of CF splitting, paramagnetism, diamagnetis ferromagnetism and anti-ferromagnetism

6. Molecular Orbital theory, π acid complexes

Books Recommended

1) **J.D. Lee,** Inorganic Chemistry, 5th edition chapman & Hall, London.
2) Inorganic Chemistry by **Puri, Sharma and Kalia**
3) **F.A. Cotton and G. Wilkinson,** Advanced Inorganic Chemistry
4) **F. Basalo and R.C. Johson,** Co-ordination Chemistry,1964.

BSBT – 105 Introduction & Fundamentals of Biotechnology

1. Introduction to Biotechnology: Modern Biotechnology, Branches of Biotechnology and its sco

2. Biological systems in Biotechnology: Prokaryotic systems (E. coli, Bacillus), eukaryotic syste (Saccharomyces), mammalian and non-mammalian cells in culture, organismal systems.

3. Basic techniques in Biotechnology:

a. Centrifugation (Principle, types and applications)

b. Electrophoresis (Principle, support media, protein and N.S. Electrophoresis)

c. Chromatography (Principle, types and applications)

d. Lyophilization (Principle, mechanism and applications)

e. Basic Microscopy (Principle, various types of microscopes and introduction to electr microscopy)

f. Radioisotopy (various types of radioisotopes and instrumentation)

g. Spectroscopy

4. Basic Genetics and Genetic manipulations: - Mendelian Inheritance, Physical basis inheritance, Gene interactions, bacterial and viral genetic systems, Genomic and mitochondrial DN C value paradox, cot curve, Cytoplasmic inheritance, Nucleo-cytoplasmic interactions, Developme and evolutionary genetics

Books Recommended

1. **McGregor, C.W.;** Membrane separation in Biotechnology; Marcel Dekker, Inc, New York.
2. **Frieferder, S.;** Physical Biochemistry; Freeman and Co., New York.
3. **Biotol Series (I - IV)**; Techniques used in Bioproduct Analysis; Buterworth Heineman,U.K.
4. **Gardner;** Principle of genetics.
5. **Work, T.S.;** Lab. Techniques in Biochemistry and Molecular Biology, Elsevier, New York.

BSBT – 109 Basic Mathematics & Biostatistics
(For Biology Students)

1) **Algebra:** Equations reducible to quadratics, simultaneous equations (linear and quadratic), Determinants, properties of solution of simultaneous equations by Cramer's rule, matrices, definition of special kinds of matrices, arithmetic operations on matrices, inverse of a matrix, solution of simultaneous equations by matrices, pharmaceutical applications of determinants and matrices. Mensuration and its pharmaceutical applications.

2) **Measures of Central Value:** Objectives and pre -requisites of an ideal, measure, mean, mode and median.

3) **Trignometry:** Measurement of angle, T-ratios, addition, subtraction and transformation formulae, T-ratios of multiple, submultiple, allied and certain angles .. Application of logarithms in pharmaceutical computations.

4) **Analytical Plane Geometry:** Certain co-ordinates, distance between two points, area of triangle, a locus of point, straight line; slope and intercept from, double-intercept form, slope-point and two point form, general equation of first degree.

5) **Calculus:**

   (a) **Differential**: Limits and functions, definition of differential coefficient, differentiation of standard functions, including function of a function (Chain rule). Differentiation of implicit functions, logarithmic differentiation, parametric differentiation, successive differentiation.

   (b) **Integral:** Integration as inverse of differentiation, indefinite integrals of standard forms, integration by parts, substitution and partial fractions, formal evaluation of definite integrals.

6) **Statistics:** Recapitulation of statistics and probability. Discrete and continuous probability distributions. Binomial, Poisson and Normal distribution, applications. Curve fitting.

BOOKS RECOMMENDED

1. A Textbook of Mathematics for XI-XII Students. NCERT Publications. Vol I-IV 1991
2. Grewal, B.S.Higher Engineering Mathematics. Khanna Publishers, New Delhi,1990
3. Gupta S.P., Statistical methods, thirty second edition, Sultan chand & sons
4. Grewal B.S., Higher Engineering Mathematics thirty seventh edition, Khanna Publishers.
5. Jindal Aman Mathematics, second edition, Kalyani Publications.
6. Sabharwal S.S., Applied Mathematics, third edition, Eagle Publications.

BSBT – 107 Computer application in Biotechnology

1. General introduction: computers, organization of computers, digital and analogue computers, computer algorithms.

2. Introduction to computers and its uses: milestones in hardware and software, batch oriented/ online/ real.

3. Computers as a system: Basic concepts, stored programs, functional units and their interrelation: communication with computer.

4. Data storage devices primary storage: storage addressed and capacity, type of memory, Secondary storage Devices, Magnetic Tape-data representation and R/W, Magnetic disks, fixed and removable, data representation and R/W: Floppy and hard disks, Optical disks CD-Rom, Mass Storage Devices.

5. Input/Output Devices: Key-tape/diskette devices, light pen mouse, joystick, source data automation, Printed outputs: serial, line, page, printers, Plotters, voice response units

6. Introduction to Bioinformatics: Internet and the Biologist, Bibliographic databases, genebank sequence database, sequence analysis using GCG, sequence alignment and database searching, Multiple sequence alignments, Phylogenetic analysis, Preiction of Protein structures, submitting DNA sequences to the database, The NCBI data model

Books Recommended

1. Bioinformatics: The Machine Learning Approach, Eds – P. Baldi and S. Brunak
2. Trends in Biotechnology: Trends guide to Bioinformatics, Trends Supplement, Elsvier Trends Journals

BSBT – 109 Basics of Biosciences
(For Maths Students)

Unit I

Diversity in the living world
The living world, Biological classification, Kingdom Monera, Kingdom Protista, Kingdom Fungi, Plant kingdom, Classification of animals in general

Unit II

Structural organization in plants and animals
Morphology of flowering plants, Anatomy of plants, structural organization in animals – anima tissues, morphology and anatomy of animals

Unit III

Cell structure and functions
Cell – Basic unit of life
Bio-molecules
Cell cycle and cell division

BSBT-111 Inorganic Chemistry Lab

1. Inorganic qualitative analysis.

2. Four ions including interfering ions.

3. Volumetric Analysis.

4. Iodimetry, Iodometry, Redox titrations using Ce(SO4)2 K2Cr2O7 and KMnO4, Complexometric titrations using EDTA Ca++, Mg++, Zn++ & Ni++

BSBT-113 Introduction &Fundamentals of Biotechnology Practical

1. Introduction to instrumentation: - Centrifuges, Autoclaves, Spectrophotometers, Microscopes Laminar hoods, incubators.

2. Centrifugation including ultra-centrifugation.

3. Polyacrylamide gel electrophoresis for proteins.

BSBT-115 Basics of Bioscience Lab

Taxonomy: a) description of flowers including floral diagram, floral formula, V.S. of flower of th representative genera of families mentioned in syllabus.
b) Each student required to submit a family wise herbarium consisting of at least 20 properly presse and mounted plants.

BSBT-117 Computer Application in Bio-Technology

1. Familiarization of the computer system
2. Loading window, closing, maximizing, icon shifting & ordering.
3. Changing drives and searching files and understanding file extensions.
4. Saving files, protecting and unprotecting.
5. Formatting floppies and practice on virus recognisation and protection.
6. Practice with control panel and file manager.
7. Practice with MS Word, Operating and closing document, Preparation of document, setting of document, familiarization with various tools, mail- merge practice.
8. Internet Browsing.

Punjab Technical University, Jalandhar

B.Tech. Automobile Engg

Study scheme

3rd Semester B.Tech (Automobile)

Code	Title of the course	L	T	P	Maximum Marks		Total Marks	Duration of Theory Examination (in Hours)
					Internal	External		
AE-201	Mechanics of Materials	3	1	-	40	60	100	3
ME-203	Theory of Machines-I	3	1	-	40	60	100	3
AE-203	Automotive Chassis & Components	3	-	-	40	60	100	3
AE-205	Applied Thermodynamics	4	1	-	40	60	100	3
AE-207	Automotive Materials and Metallurgy	3	-	-	40	60	100	3
AE-209	Mechanics of Materials Lab.	-	-	2	30	20	50	
AE-211	Automotive Chassis Lab	-	-	2	30	20	50	
AE-213	Automotive Materials and Metallurgy Lab	-	-	2	30	20	50	
ME-207	Machine Drawing	1	-	6	40	60	100	4
ME-215	Workshop Training*	-	-	-	60	40	100	
	Advisory meeting			1				
	Total						850	

Total contact hours = 33

4th Semester B.Tech (Automobile)

Code	Title of the course	L	T	P	Maximum Marks		Total Marks	Duration of Theory Examination (in Hours)
					Internal	External		
AM-201	Mathematics-III	4	-	-	40	60	100	3
AE-202	Internal Combustion Engines	4	1	-	40	60	100	3
ME-204	Theory of Machines – II	3	1	-	40	60	100	3
AE-204	Manufacturing Processes	3	1	-	40	60	100	3
AE-206	Automotive Transmissions	3	1		40	60	100	3
AE-208	Automotive Pollution & Control Systems	3		-	40	60	100	3
AE-210	Internal Combustion Engines Lab	-	-	2	30	20	50	
ME-212	Theory of Machines Lab	-	-	2	30	20	50	
AE-212	Manufacturing Processes Lab	-	-	2	30	20	50	
AE-214	Auto Transmissions Lab			2	30	20	50	
	General Fitness				100	-	100	-
	Advisory meeting			1				
	Total						900	

Total contact hours =33

There shall be industrial training of 06 weeks duration in reputed industries at the end of 4th semester. The marks for this will be included in the 5th semester.

PUNJAB TECHNICAL UNIVERSITY
SYLLABUS FOR
B.Sc. (HOTEL MANAGEMENT & CATERING TECHNOLOGY)

1st Semester

Course No	Subject	L	T	P	Maximum Marks	
					Int.	Ext.
BSHM-101	Food Microbiology & Nutrition	2	-	-	40	60
BSHM-103	English Language -I	2	-	-	40	60
BSHM-105	Basics of Computer	2	-	-	40	60
BSHM-107	Food Production-I	2	-	-	40	60
BSHM-109	Food & Beverage Service – I	2	-	-	40	60
BSHM-111	Hotel House Keeping-I	2	-	-	40	60
BSHM-113	Front Office Operations-I	2	-	-	40	60
Practical						
BSHM-115	Food Production -I	-	-	6	40	60
BSHM-117	Food & Beverage Service- I	-	-	4	40	60
BSHM-119	Hotel House Keeping-I	-	-	3	40	60
BSHM-121	Front Office Operations- I	-	-	3	40	60
BSHM-123	Basics of Computer - I	-	-	2	40	60

2nd Semester

Course No	Subject	L	T	P	Maximum Marks	
					Int.	Ext.
BSHM-102	Hygiene & Sanitation	2	-	-	40	60
BSHM-104	English Language -II	2	-	-	40	60
BSHM-106	French -I	2	-	-	40	60
BSHM-108	Food Production-2	2	-	-	40	60
BSHM-110	Food & Beverage Service – II	2	-	-	40	60
BSHM-112	Hotel House Keeping - II	2	-	-	40	60
BSHM-114	Hotel Engineering	2	-	-	40	60
Practical						
BSHM-116	Food Production - II	-	-	6	40	60
BSHM-118	Food & Beverage Service- II	-	-	4	40	60
BSHM-120	Hotel House Keeping - II	-	-	3	40	60
BSHM-122	Hotel Engineering	-	-	3	40	60
BSHM-124	Basics of Computer - II	-	-	2	40	60

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APPENDIX-G

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Qualification Upgradation Programme (QUP – ONGC

DIPLOMA IN MECHANICAL ENGINEERING

1st Semester

e	Course Name	L	T	P	Internal Marks	External Marks	Total Marks
101	Communication Skill	2	2	-	40	60	100
101	Applied Mathematics-I	3	1	-	40	60	100
101	Applied Physics	3	1	-	40	60	100
101	Applied Chemistry	3	1	-	40	60	100
101	Information Technology	3	-	-	40	60	100
101	Engineering Drawing	1	-	5	60	40	100
103	Workshop Practice-I	1	-	4	60	40	100
103	Applied Physics Lab	-	-	2	30	20	50
103	Applied Chemistry Lab	-	-	2	30	20	50
103	Information Technology Lab	-	-	2	30	20	50
	Total	16	5	15	410	440	850
			36				

2nd semester

rse de	Course Name	L	T	P	Internal Marks	External Marks	Total Marks
M-102	Applied Mathematics-II	3	1	-	40	60	100
102	Material Science	3	1	-	40	60	100
104	Engg. Mechanics	3	1	-	40	60	100
104	Basic Electrical & Electronic Engineering	1	2	-	40	60	100
ME-106	Machine Drawing	1	-	6	30	20	50
ME-108	Material Science Lab	-	-	2	30	20	50
ME-110	Engg. Mechanics Lab	-	-	2	30	20	50
EE-110	Basic Electrical & Electronics Engineering Lab	-	-	2	60	40	100
ME-112	Workshop Practice-II	1	-	4	350	400	750
	Total	15	5	16			
			36				

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Qualification Upgradation Programme (QUP) – ONGC

DIPLOMA IN ELECTRICAL ENGINEERING

1st Semester

Course Code	Course Name	L	T	P	Internal Marks	External Marks	Total Marks
HU-101	Communication Skill	2	2	-	40	60	100
AM-101	Applied Mathematics-I	3	1	-	40	60	100
PH-101	Applied Physics	3	1	-	40	60	100
CH-101	Applied Chemistry	3	1	-	40	60	100
CS-101	Information Technology	3	-	-	40	60	100
ME-101	Engineering Drawing	1	-	5	60	40	100
ME-103	Workshop Practice	1	-	4	60	40	100
PH-103	Applied Physics Lab	-	-	2	30	20	50
CH-103	Applied Chemistry Lab	-	-	2	30	20	50
CS-103	Information Technology Lab	-	-	2	30	20	50
	Total	16	5	15	410	440	850
			36				

2nd semester

Course Code	Course Name	L	T	P	Internal Marks	External Marks	Total Marks
DAM-102	Applied Mathematics-II	3	1	-	40	60	100
DEE-102	Electrical Engg. Material	3	1	-	40	60	100
DME-102	Engg. Mechanics	3	1	-	40	60	100
DEE-104	Basic Electrical & Electronic Engineering	4	2	-			
DEE-106	Electrical Engg. Drawing	1	-	6	40	60	100
DEE-108	Electrical Engg. Material Lab	-	-	2	30	20	50
DME-104	Engg. Mechanics Lab	-	-	2	30	20	50
DEE-110	Basic Electrical & Electronics Engineering Lab	-	-	2	30	20	50
DEE-112	Electrical Workshop Practice	1	-	4	60	40	100
	Total	15	5	16	350	400	750
			36				

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

List of Engineering Colleges

Session : 2006 – 07

Sr. No.	Name of institution
1.	Adesh Institute of Engineering & Technology, Faridkot.
2.	Amritsar College of Engineering & Technology, Amritsar
3.	Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib.
4.	Baba Hira Singh Bhattal College of Engineering , Leharagaga, Moga
5.	Baba Kuma Singh Ji Engg. College, Gurdwara Guru Sar Satlani Sahib, VPO Hushiar Nagar, Amritsar
6.	Beant College of Engineering & Technology, Gurdaspur
7.	Bhai Gurdas Institute of Engg. & Tech., Patiala Road, Sangrur.
8.	Bhai Maha Singh College of Engg. Kotkapura Road, Muktsar.
9.	Bhutta College of Engg. & Tech. VPO Bhutta Distt. Ludhiana, Punjab
10.	C.T. Institute of Engineering Management & Technology, Vill. Shahpur Distt. Jalandhar – 144 026
11.	Chandigarh Engineering College, Landran. (Mohali)
12.	Chitkara Institute of Engg. & Tech. Vill. Jansala, Tehsil- Rajpura, Patiala.
13.	College of Engineering & Management, 5 km Stone Goindwal Road, Kapurthala.
14.	D.A.V. Institute of Engg. & Tech., Jalandhar.
15.	Desh Bhagat Engineering College, Amloh Road, Mandi Gobindgarh – 147 301
16.	Doaba Institute of Engineering & Technology (DIET), Ghataur, PO Alla pur Tehsil, Kharar, Distt. Ropar
17.	GGS College of Modern Technology Kharar, Distt. Roopnagar.
18.	Giani Zail Singh College of Engineering & Technology, Bathinda
19.	Guru Gobind Singh College of Engg.& Tech. Talwandi Sabo, Bathinda.
20.	Guru Nanak Dev Engineering College, Ludhiana.
21.	Guru Teg Bahadur Khalsa Instt. of Engg. & Technology Chhapianwali, Malout.
22.	IITT, College of Engineering, Pojewal, Nawan Shahar.
23.	Indo Global College of Engg., Indo Global Education City Abhipur (Chandigarh) Punjab
24.	Institute of Engineering & Technology, Village Bhaddal, Ropar.
25.	K.C. College of Engg. & Information Technology, VPO Kariam, Distt. Nawanshahr
26.	Lala Lajpat Rai Institute of Engineering & Technology, Moga.
27.	Lovely Institute of Technology, Near Chehru Rly Bridge, Jalandhar – Ludhiana G.T. Road, Phagwara Distt. Kapurthala.
28.	Ludhiana College of Engineering & Technology Katani Kalan, Chandigarh G.T. Road, Ludhiana.
29.	Malout Institute of Management & Information Technology, Malout, district
30.	Punjab College of Engg. & Tech., Lalru Mandi (Village Malakpur) Distt. Patiala.
31.	Ramgarhia Institute of Engg. & Tech. REC Complex Phagwara, Punjab
32.	Rayat Bahara Institute of Engg. & Bio-Tech. Ropar.
33.	Rayat Instt. of Engg.& Information Technology,VPO Rail Majra, , Distt. Nawan Shahr.
34.	RIMT Institute of Engineering & Tech., Sirhind Side Mandi Gobindgarh, Distt. Fatehgarh Sahib
35.	Sant Baba Bhag Singh Institute of Engg. & Tech. VPO Padhiana, Distt. Jalandhar
36.	Sant Longowal Institute of Engineering & Technology, Longowal
37.	Shaheed Bhagat Singh College of Engineering & Technology, Ferozepur
38.	Shaheed Udham Singh College of Engineering & Technology, (Tangori), Mohali.
39.	Shiv Shankar Institute of Engg. & Tech., Patti
40.	Sri Sai College of Engg. & Tech., VPO – Badhani, Pathankot.
41.	Sri Sukhmani Institute of Engineering & Technology, Dera Bassi.
42.	Swami Parmanand College of Engineering & Technology, Vill. Jaulan Kalan (Lalru), Tehsil Dera Bassi, Distt Patiala
43.	Swami Vivekanand Institute of Engg. & Tech., Vill Ram Nagar, near Banur Distt. Patiala.

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Affiliated Pharmacy Colleges

Session : 2006 - 07

Sr. No.	Name of the Institution
1.	Akal College of Pharmacy and Technical Education, Mastuana (Distt. Sangrur)
2.	Amar Shaheed Baba Ajit Singh Jujhar Singh Memorial College of Pharmacy, Bela (Distt.Ropar)
3.	Baba Ishar Singh College of Pharmacy, Kot-ise-khan, Dharmkot Road, Teh.Zira, Distt.Ferozepur.
4.	Chandigarh College of Pharmacy, Landran Chandigarh
5.	Chitkara College of pharmacy, Rajpura
6.	CT Institute of Pharmaceutical Sciences, Vill Shahpur, Distt. Jalandhar
7.	Doaba College of Pharmacy, Ghataur, PO Alla pur Tehsil, Kharar, Distt. Ropar
8.	G.H.G. Khalsa College, Gurusar Sadhar, Ludhiana
9.	Global College of Pharmacy, Khanpur Khui, Teh. Anandpur Sahib, Distt. Ropar
10.	Government Polytechnic for Women, Patiala
11.	Government Polytechnic, Amritsar
12.	Indo Soviet Pharmacy College, Moga
13.	Lovely College of Pharmacy, Lovely Valley, Vill. Chehru, Teh. Phagwara, Distt. Kapurthala.
14.	Pt. J.R.Govt. Polytechnic, Hoshiarpur
15.	Rayat and Bahra Institute of Pharmacy , Village Sahauran, Tehsil Kharar.
16.	Rayat Institute of Pharmacy, Rail Majra Distt. Nawan Shahar
17.	S.D.College of Pharmacy, Barnala (Distt.Sangrur)
18.	Shaheed Bhagat Singh Polytechnic and Pharmacy College, Patti (Distt. Amritsar)
19.	Shivalik College of Pharmacy, Nangal (Distt.Ropar)
20.	Sri Sai College of Pharmacy, Badhani-Pathankot-145001
21.	Swami Vivekanand College of Pharmacy, Ramnagar.
22.	VMS College of Pharmacy, Amritsar Road, Batala

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR
Affiliated Architecture Colleges
Session: 2006 - 07

Sr. No.	Name of the College / institute
1.	Chitkara School of Planning & Architecture. Vill Jansala, The. Rajpura, Patiala
2.	College of Architecture IET Bhaddal, IET Campus, Village Bhaddal P.O Mianpur, Distt. Ropar
3.	Giani Zail Singh College of Engineering & Technology, Bathinda
4.	Indo-Global College of Architecture, Indo Global Education Society, Abhipur,
5.	Lovely Institute of Technology, Jalandhar – Ludhiana Road, Near Cheru Rly . Bridge, Distt. Kapurthala
6.	RIMT College of Architecture Sirhind Side, Mandi Gobindgarh

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR
Affiliated Hotel Management & Catering Technology Colleges
Session: 2006 - 07

Sr. No.	Name of the Institution
1.	C.T. Institute of Hotel Management & Catering Technology, Greater Kailsash Colony, Maqsudan, Jalandhar
2.	Chandigarh College of Hotel Management & Catering Technology, Landran, Mohali
3.	Desh Bhagat Hotel Management & Catering Technology, Amloh Road, Mandi Gobindgarh
4.	K.C. College of Hotel Management, VPO Kariam, Tehsil & Distt.Nawanshahr

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR
List of Institutes running only Management & MLT courses
Session : 2006 – 07

Sl. No.	Name of the College / Institute
1.	Apeejay Institute of Management, P.O. Ladhewali, Hoshiarpur Road, Jalandhar –144 023
2.	Baba Isher Singh Institute of Technology, V.P.O. Gagra (Moga)
3.	Baba Mangal Singh Institute of Management & Technology, Moga
4.	Bhai Gurdas Institute of Management & Technology, Main Patiala Road, Sangrur – 148 001
5.	BNM College of Technical Education, Alamgir Distt., Ludhiana – 141 116
6.	C.T. Institute of Management & Information Technology, Maqsoodan, Jalandhar
7.	Centre for Management Training & Research, SAS Nagar (Mohali).
8.	Chandigarh College of Hotel Management & Catering Technology, VPO Landran, Tehsil Mohali Distt. 140 307
9.	Chitkara School of Hospitality, Technology & Management, Rajpura
10.	College of Management & Technology, Santi Nagar, Behind Urban Estate – 2, Near Sirhind bye pass, Patiala
11.	Desh Bhagat Institute of Advanced Computer Sciences, Village Saunti, Amloh Road, Mandi Gobind Garh.
12.	Doraha Institute of Management & Technology, VPO Doraha, Distt., Ludhiana – 141 421
13.	Gian Jyoti Institute of Management & Technology, Phase -2, S.A.S. Nagar, Mohali – 165 055
14.	GNA Institute of Management & Technology, Phagwara
15.	Gujranwala Guru Nanak Institute of Management & Technology, Post Box No. 272, Civil Lines, Ludhiana
16.	Guru Gobind Singh Information Technology and Research, Talwandi Saboo (Bathinda)
17.	Guru Nanak Institute of Management & Tech, Model Town, Ludhiana –141 002
18.	Guru Sewa Institute of Computer Sciences & Technology, Garhshankar (Nawanshahr)
19.	Guru Teg Bahadur Institute of Management & Technology, Dakah, Distt. Ludhiana – 141 102
20.	Institute of Management Studies (For Girls), Model Town, Ludhiana – 141 002
21.	Institute of Tourism and Future Trends, SCO 1-2-3, 3rd Floor, Opposite RBI, Sector 17-D, Chandigarh
22.	Jamna Devi Institute of Management & Technology, Bathinda Road, Muktsar – 152 026
23.	Khalsa Institute of Management & Technology for Women, Civil Lines, Ludhiana
24.	Lala Lajpat Rai Memorial Institute of Management & Technology, Dhudike (Moga) - 142 053
25.	Lovely Institute of Management, Hardaspur, Near Chehru Rly. Bridge, Teh. Phagwara, Distt. Kapurthala -144 402
26.	Maharaja Ranjit Singh Khalsa Tech. College, Bathinda 151 001
27.	Malwa Institute of Management, Village Dhablan, Near Rakhra Sugar Mill, Nabha Patiala Road, Patiala
28.	National College of Information Technology, Jalalabad Road, Muktsar – 152 026
29.	Patel Institute of Management & Technology, College Road, Rajpura
30.	Punjab College of Technical Education, Ferozepur Road, Baddowal, Ludhiana – 142 021
31.	Punjab Institute of Management & Technology, Mandi Gobindgarh – 147 301
32.	Ram Iqbal Institute of Management & Technology, Patti (Amritsar)
33.	Rayat Institute of Management, Railmajra
34.	RIMT - Institute of Management & Computer Technology, Mandi Gobindgarh – 147 301
35.	S.D. Sabha Institute of Technology, Barnala – 148 101
36.	S.M. Degree College, Lehragaga
37.	Sahibzada Ajit Singh Institute of Information Technology & Research, C-124, Phase- VIII, ELTOP Area , SAS Nagar, Mohali – 160 059
38.	Sai Iqbal Institute of Computer Sciences, Badhani, Pathankot-145 001
39.	Shaheed Udham Singh College of Management & IT, Tangori
40.	Social Institute of Management & Technology, Manjit Nagar, Basti Sheikh, Jalandhar
41.	St. Soldier Management & Technical Institute, Basti Mithu, Kapurthala Road, Jalandhar – 144 002
42.	Swami Sarvanand Institute of Management & Tech., Vill. Talwandi , GT Road, Dinanagar – 143 531
43.	Swami Satyanand School Management & Technology, Near Royal Estate, Ajnala Road, Amritsar
44.	Synetic Business School, VPO Ramgarh, Chandigarh Road, Ludhiana
45.	Tagore Institute of Management, Patran
46.	Technical Education College, Vill. Handiya, Barnala-Bathinda Road, Barnala – 148 107 (Sangrur)

ELIGIBILITY FOR NEW INTRODUCED COURSES

Sl. No.	Course	Qualification
1	M.Sc. (MLT)	All those candidates who have passed any recognized Bachelor's degree in Medical Lab Technology of minimum three years duration.
2.	B.Sc. (Hotel Management & Catering Technology)	All those candidates who have passed the 10+2 from a recognized State Board of Education. OR Those candidates who have passed their Matriculation examination AND have also passed three year Diploma in any Trade from Punjab State Board of Technical Education & Industrial Training, Chandigarh or such Examination from any other recognised State Board of Technical Education, or Sant Longowal Institute of Engineering & Technology, Longowal
3.	B.Sc. (Media Entertainment & Film Technology)	All those candidates who have passed the 10+2 from a recognized State Board of Education. OR Those candidates who have passed their Matriculation examination AND have also passed three year Diploma in any Trade from Punjab State Board of Technical Education & Industrial Training, Chandigarh or such Examination from any other recognised State Board of Technical Education, or Sant Longowal Institute of Engineering & Technology, Longowal
4.	B.Sc. (Bio-Technology)	All those candidates who have passed the 10+2 with Physics & Chemistry as compulsory subjects and either Mathematics or Biology conducted by a recognized Board / University / Council. OR Those candidates who have passed their Matriculation examination AND have also passed three year Diploma in any Trade of Engineering / Technology from Punjab State Board of Technical Education & Industrial Training, Chandigarh or such Examination from any other recognised State Board of Technical Education, or Sant Longowal Institute of Engineering & Technology, Longowal

LIST OF PTU'S REGIONAL CENTRES RUNNING M.TECH. COURSES SESSION 2006-07

University Regional Centers Located at the premises of	Names of the M. Tech.(Part Time) Courses
Baba Banda Singh Bahadur Engg. College, Fatehgarh Sahib	Mechanical Engg. (Machine Design), Electronics and Communication Engg., Computer Science and Engg.
Beant College of Engg. & Tech., Gurdaspur	Mechanical Engg.(Production Engg.), Electronics and Communication Engg.
Giani Zail Singh College of Engg. & Tech., Bathinda	Civil Engg. (Structural Engg.), Power Engg., Mechanical Engg.(Production Engg.), Electronics and Communication Engg.
Guru Teg Bahadur Khalsa Institue of Engg. & Tech, Chhapianwali	Electronics and Communication Engg., Electrical Engg.
Institute of Engg. & Tech, Bhaddal	Electronics and Communication Engg., Mechanical Engg. (Thermal Engg.)
Lala Lajpat Rai Institute of Engg. & Tech., Moga	Instrumentation and Control Engg.
Malout Institute of Management & Information Tech, Malout	Industrial Engg.
Shaheed Bhagat Singh College of Engg. & Tech., Ferozepur	Chemical Engg., Environmental Sci. & Engg.
DAVIET, Jalandhar	Electronics and Communication Engg., Computer Science and Engg.
Shaheed Udham Singh College of Engg. & Tech., Tangori	Mechanical Engg.(Production Engg.)
Lovely Institute of Technology, Phagwara.	Mechanical Engg (Thermal) Information Technology.
Guru Nanak Dev Engg. College, Ludhiana	Electronics and Communication Engg. , Computers Science and Engg., VLSI Design
Indo Soviet Friendship Pharmacy College, Moga.	M.Pharmacy (Pharmacology)

Full Time M.TECH. COURSES –SESSION 2006-07

Name of College/Centre	Courses Offered
Baba Banda Singh Bahadur Engg. College, Fatehgarh Sahib	M.Tech. CAD/CAM
Guru Nanak Dev Engg. College, Ludhiana FULL TIME	i) M.E. Power Engineering ii) M.E. Soil Mechanics & Foundation iii) M.E. Structural Engg. iv) M.Tech. Computer Sc., & Engg. v) M.Tech. Geotechnical Engg.
Guru Nanak Dev Engg. College, Ludhiana PART TIME	i) M.E. Electrical Engg ii) M.E. Electronics Engg. iii) M.E. Industrial Engg. iv) M.E. Production Engg.
Giani Zail Singh College of Engg. & Tech., Bathinda	M.Tech. Construction Technology & Management
Centre for Development of Advanced Computing, Mohali	M.E. Electronics Product Design and M.Tech VLSI Design
Indo Soviet Friendship Pharmacy College, Moga.	M.Pharma (Pharmaceutical Chemistry) M.Pharma (Pharmacology) M.Pharma (Pharmacognosy)
Amar Shaheed College of Pharmacy Bela, Ropar	M.Pharma (Pharmaceutics)
SLIET, Longowal	M.Tech. Food Engg. & Tech. M.Tech. Instrumentation & Contrl Engg. M.Tech. Manufacturing System Engg. M.Tech. Polymer