AGENDA

27th ACADEMIC COUNCIL

10th November 2006

Desh Bhagat Institute of Hotel Management
& Catering Technology, Mandi Gobindgarh

PUNJAB TECHNICAL UNIVERSITY
JALANDHAR

Agenda items for 27th meeting of the Academic Council to be held on 10th November 2006 at Desh Bhagat institute of Hotel Management & Catering Technology, Mandi Gobindgarh

Item No.	Item Description	Appendix
27.1	To confirm the minutes of 26th Academic Council meeting	A
27.2	Action Taken Report on the 26th meeting of the Academic Council	B
27.3	To brief about the progress of Caparo School of excellence for Manufacturing and Material Technology	
27.4	To brief about Annual Convocation – 2006	
27.5	To brief about organizing Inter College Youth Festival 2006-07	
27.6	To brief about organizing Punjab Science Congress	
27.7	To brief on the Construction of PTU Campus at Kapurthala Site.	
27.8	To consider regulations for M. Pharma.	C
27.9	To consider award of Ph.D. Degree	D & E
27.10	To deliberate on deposit of Endowment Fund	
27.11	To deliberate on the Academic Regulations –2004	
27.12	To consider amendments in Academic Regulations for SLIET, Longowal and syllabi of BE (IT)	F
27.13	To consider the minutes of Ph.D. committee	G
27.14	To consider approval of the syllabus of M.Sc (MLT), B. Tech. (Bio-medical), B.Sc (Media Entertainment & Film Technology), B.Sc.(IT), M.Sc (SIM), M.Sc (ATHM),	H
27.15	To finalize Date sheet for December, 2006 examinations	
27.16	To consider migration case of Mr. Madhur Trikha	
27.17	To consider acceptance of Registration Forms	
27.18	Any other item with the permission of the Chair	

(1)

AGENDA FOR 27TH MEETING OF THE ACADEMIC COUNCIL TO BE HELD ON 10TH NOVEMBER 2006 AT DESH BHAGAT INSTITUTE OF HOTEL MANAGEMENT & CATERING TECHNOLOGY, MANDI GOBINDGAH

27.1 To confirm the minutes of 26th Academic Council meeting

Minutes of the 26th meeting of the Academic Council held on 13th September, 2006 at Chitkara Institute of Engineering & Technology, Vill Jansla (Distt.) Patiala 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.

27.2 Action Taken Report on the 26th meeting of the Academic Council

Action taken report on the 26th meeting of the Academic Council is placed at **Appendix–B.**

27.3 To brief about the progress of Caparo School of Excellence for Manufacturing and Material Technology

PTU Caparo School of Excellence for Manufacturing and Material Technology is being established at PTU site at Kapurthala – Jalandhar Road. Foundation Stone Laying Ceremony of the School was carried out on 11.10.06.

27.4 To brief about Annual Convocation – 2006

The University convocation is being organized in the first week of December. The venue of the convocation shall be NIT, Jalandhar. Details would be issued in due course of time.

The Academic Council is informed.

27.5 To brief about organizing Inter college Youth Festival 2006-07

The Inter-college Youth Festival 2006 – 07 had been organized on 7th and 8th November, 2006. The schedule of the Festival was as under

Sl.No.	Event	Last date for receipt of entry	Date of Youth Festivals	Venues
1.	Zone – I	27.10.06	07.11.06 to 08.11.06	BIS Gagra,
2.	Zone – II	27.10.06	07.11.06 to 08.11.06	LIM, Phagwara
3.	Zone – III	27.10.06	07.11.06 to 08.11.06	IET, Bhaddal
4.	Zone – IV	27.10.06	07.11.06 to 08.11.06	BBSBEC, Fatehgarh Sahib

Details shall be presented at the table.

The final competition is scheduled to be held on 17th – 19th November 2006 at DAVIET, Jalandhar

Academic Council may take a note.

27.6 To brief about organizing Punjab Science Congress

10th Punjab Science Congress is being organized by Punjab Technical University in collaboration with DAVIET, Jalandhar on February 7 - 9, 2007 at DAVIET, Jalandhar. Invitations have been sent to all concerned for participation and for sending research papers.

Members of the Council are requested to use their good offices for active participation of the faculty and the research scholars in the congress.

(2)

27.7 To brief on the Construction of PTU Campus at Kapurthala Site

The work of civil construction of Administration Building of the University was awarded in January, 2006 with a time limit of 18 months and is progressing. Building consists of a Four Storey Front Block and Eight Storey Rear Block with a Basement. Slab at First Floor of the Front Block stands laid and the work in second floor is in progress. Laying of Slab at Ground Floor Level over Basement in the Rear Block is in Progress. Works of External Services of Services Block, Air Conditioning and Electrical Works have been awarded recently. Work of External Public Health has been put to tenders.

Architectural Designs of Residences Type I to V, Sports Complex, Guest House and Convention Centre have been approved and construction shall be undertaken in phases.

27.8 To consider regulations for M. Pharma.

The committee constituted for preparing of M. Pharma regulations has submitted its report. The regulations for M. Pharma are placed at **Appendix - C** for consideration by the Academic Council. If recommended these will be put up to the BOG, PTU.

27.9 To consider award of Ph.D. Degree

The following two candidates have completed necessary formalities for award of Ph.D Degree :

1. Mr. Amritpal Singh (Abstract is enclosed as **Appendix – D**)
2. Mrs. Veena Sharma (Abstract is enclosed as **Appendix – E**)

The matter is placed before the Academic Council for recommendation to the BOG.

27.10 To deliberate on deposit of Endowment Fund

Academic Council in its 8th meeting approved the charging of endowment fund of Rs. 25 Lac per college. All the colleges running Non-AICTE courses were required to deposit endowment fund. Till date only seven colleges have deposited the endowment fund, out of this only one college has deposited Rs. 25 lac and the rest have deposited Rs. 05 lac each .

The matter is placed before the Academic Council.

27.11 To deliberate on the Academic Regulations –2004

There is clarification with regard to implementation of Academic Regulations 2004, which has been brought to the notice of the University. The details of clarification sought are as under :

Reappear in sessionals

In Academic Regulations 2001 there was a provision of reappear in internal sessional marks. The said provision was deleted from Academic Regulations – 2004. However, by a subsequent notification dated 26.10.2004 an amendment was implemented in Academic Regulations, 2004 which are as follows

Academic Regulations – 2004	Amended Academic Regulations – 2004
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 assessment of both Theory and Practical shall be added as such to the marks obtained in written theory and External practical examinations respectively".*	*"There will be reappear in sessional / internal assessment of Theory and Practical subjects. The students will be required to pass separately in internal / sessional and external securing 40% marks."*

Now one of the institutes has desired the clarification whether reappear in internal would be awarded by University or not since it is not a part of the amended Academic Regulations, 2004.

The matter is placed before the Academic Council for consideration and decision.

27.12 To consider amendments in Academic Regulations for SLIET, Longowal and syllabi of BE (IT)

SLIET, Longowal has proposed some amendment in the existing Academic Regulations for SLIET which are placed at **Appendix - F** for consideration by the Academic Council and to recommend the same to BOG for approval.

27.13 To consider the minutes of Ph.D. committee

The Ph.D committee constituted by the Council met on 25.10.06 and has recommended some modifications with regard to the regulations for Ph.D. The Ph.D. regulations incorporating modifications are placed at **Appendix – G**.

27.14 To consider approval of the syllabus of M.Sc (MLT), B. Tech. (Bio-medical), B.Sc (Media Entertainment & Film Technology), B.Sc.(IT), M.Sc (SIM), M.Sc (ATHM)

The meetings of Boards of Studies were held to prepare the syllabi for above said courses. The recommended study scheme is placed at **Appendix – H** for approval of the Academic Council.

27.15 To finalize Date sheet for December, 2006 examinations

The Academic Council in its 25th meeting has approved the start of exam from 5th December, 2006. It is now proposed to start this examination from 16th December, 2006. The proposed date sheet has been sent to all concerned for comments, if any.

The Academic Council may take note.

27.16 To consider migration case of Mr. Madhur Trikha

The University has received a representation from the father of Mr. Madhur Trikha a student of IET, Bhaddal who had migrated from Anna University Chennai to the PTU system after successfully completing two semesters of studies at Anna University with 79% marks in first semester and 71% marks in 2nd semester. The brief of the case is as follows :

1. Mr. Madhur Trikha was a student of Anna University, Chennai and due to health problems he wanted to migrate to PTU. He had taken no objection certificate from Anna University and also from IET, Bhaddal for admitting the students in EIE branch. The case was considered by the University and a comparison of the course contents on first year syllabi of PTU and that of Anna University was made by the Board of Studies. It was found that except few practical courses the Anna University syllabi was deficit in the following courses.

1.	CS – 101	Fundamentals of Computer Programming & IT
2.	ME – 101	Elements of Mechanical Engg.
3.	EE – 101	Basic Electrical & Electronics Engg.

2. The number of theory subjects of B. Tech. 1st year is eight and that of Anna University is 13. PTU has 9 lab courses and one workshop practice whereas Anna University has 5 lab courses and one workshop practice. The CS lab and computer graphics lab are not therein Anna University Scheme.

The Board of studies had recommended that on an average 44% course contents of theory and 27% of course content of lab courses are covered by Anna University viz – a – viz PTU syllabi.

3. On consideration of the above, the University decided that the students be migrated to the 3rd semester and will have to pass / clear the following subjects : CS – 101, ME – 101, EE – 101 in addition to the 3rd semester course. No time was specified for clearing the papers.

4. The students has represented that some of the Universiies do not impose the condition of mapping of syllabus for migration. Further, the first year syllabus in most universities is same. Such a burden on the students from other universities may, therefore, pre-empt other universities also to put such conditions with respect to students migrating from PTU to other universities.

The matter is placed before the council for consideration.

27.17 To consider acceptance of the Registration Forms

The University has initiated the process of registration of students from this session. This being the first year, some of the colleges have sent the Registration Forms after the due date. The Council may consider the late registration of such student. This would not be precedence.

The matter is placed before the Council.

28.18 Any other item with the permission of the Chair.

Appendix-A.

MINUTES OF THE TWENTY SIXTH MEETING OF THE ACADEMIC COUNCIL HELD ON 13.9.06 AT 11:30 A.M. IN CIET, RAJPURA

The 26th meeting of the Academic Council was held on 13.9.06 at 11:30 A.M in the auditorium of the CIET, Rajpura under the chairmanship of Dr. S.K. Salwan, Vice-Chancellor, PTU. The members as listed at Appendix A attended the meeting.

The Chairman welcomed the members. He appraised the council that during the current session admission to all the courses conducted by the University was overwhelming. The students' response for fresh admissions was an indication of restoration of confidence in the University. He informed the members that it was perhaps the first time that for engg. courses the number of applications received were more than the sanctioned intake. The University had also witnessed the admissions of higher merit candidates both on CET as well as those on AIEEE basis. A similar trust had been seen in MBA/MCA & other courses as well.

The Chairman informed the council about the NSS activities undertaken through two camps organized by the University. These were at Harike Pattan for boys and Gagra (Moga) for girls. The students had participated in upliftment of the society and environment. They had taken the initiative to provide awareness in general rural public. The society in turn had reciprocated to the call of the students and indeed it was creditable to witness the students working in these areas. He informed the members that he had personally visited one of the camps and interacted with the volunteers. He invited the participating colleges to undertake similar camps in their own areas. The University had five fold increase in number of NSS volunteers. The colleges must take maximum action to enroll more volunteers.

The Vice-Chancellor informed the council that end semester examinations in May-June-2006, had been conducted and majority of the results, especially in respect of final semester students, had been declared.

The Vice-Chancellor appraised the members about Punjab College of Technical Education, Baddowal securing 36th rank in the Institutions of Management as conducted by **Outlook** Magazine. It was dedicated and concerted efforts of the college

13 OCT 06

managements, staff and students that the institute could win itself such place in the Northern Region. He mentioned that other colleges must also make similar efforts.

The following new members as well as those rejoining were introduced.

(i) Dr. M.S. Sukhija, Director/Principal, AIET, Faridkot
(ii) Dr. B.S. Dhami, Director, GTB, Dhaka
(iii) Dr. G.D. Gupta, Professor & Principal, ASBASJS Memorial College of Pharmacy, Bela.
(iv) Dr. V.P. Batra, Director, Panjab College of Engg. & Tech. Lalru
(v) Dr. Gurdip Singh, Principal, GGSCMT, Kharar

Thereafter regular agenda was taken up:

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

The council confirmed the minutes.

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

The Registrar briefed the council on the action taken on the agenda and decisions of the 25th meeting of the Academic Council.

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

(A) The Registrar briefed the council on the decision of the BOG on various recommendations made by the academic council. The council was briefed on the amendments to Academic Regulations and its implementation. The Chairman mentioned that a committee had been constituted for award of Technology Stambh, it was necessary to specify modalities, methodology and criteria for award of Technology Stambh. The council approved the following committee for laying the guidelines:

13 OCT 06

(a) Dr. D.S. Hira, Principal, BBSEB Engg. College, Fathegarh Sahib

(b) Dr. K.D. Mannan, Vice-Principal, LCET, Katani Klan, Ludhiana

(c) Dr. R.K. Sharma, Principal, SSCET, Badhani

(B) The Registrar briefed the council that the BOG had not approved examination only in the latest curriculum of a subject. It would be necessary to map each syllabus and evaluate difference. It was also necessary to :

(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.

The council appointed the following committee to undertake the above:

(a) Dr. C.S. Rao, Director-Principal, SVIET, Ram Nagar.

(b) Dr. K.D. Mannan, Vice-Principal, LCET, Katani Klan, Ludhiana.

(c) Dr. J.K. Sharma, Principal, SPCET, Jaulan

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

The council authorized the chairman to approve list of eligible candidates for award of degrees (Post Graduate and undergraduate) during the forthcoming convocation.

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)

The council deliberated and did not approve relaxation in passing marks in case of reappear candidates of B.Pharmacy who had earlier appeared under the criteria of 50% marks.

13 Oct 06

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 University deliberated on the issue of the students who could not register themselves at the beginning of the semester. The stray cases that had come up were probably because of lack of dissemination of the information to the students. It was decided that the University may permit the students' registration up to 20 Sep 2006. All Registration forms must reach to University by 22.9.06. No form received after such date would be accepted.

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

The committee approved the syllabi, fee structure and eligibility conditions of the new courses. The council approved inclusion of the following name for fixing fess for M.Pharma:

Dr. R.L. Gupta, Director, College of Pharmacy, Bela

The council also included the following names to the committee constituted for syllabus and eligibility criteria of new courses:

(a) Shri Shivjeet Singh Walia, Director, ITFT, Chandigarh.

(b) Dr. M.S. Dhanju, Director, BIS Institute of Sci. & Tech. Gagra, Moga.

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

The council approved the syllabus in Electrical and Mechanical streams for Unnati Prayas Scheme at ONGC Dehradun.

13 Oct 06

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

The council recommended the list of colleges as presented for affiliation during the session 2006-07

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

The council constituted the following committee for making selection for award of Honoris Causa degree of the University:

(a) Dr. R.S. Seehra, Professor Emeritus, Desh Bhagat Engg. College, Mandigobindgarh
(b) Dr. D.R. Singh, Dean GNAIMT, Phagwara
(c) Dr. R.L. Gupta, Director, College of Pharmacy, Bela
(d) Prof. (Col) I.S. Bakshi, Director, Chitkara School of Planning & Architecture.

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

The council recommended opening of regional centre at Khaddor Sahib and authorized the chairman to work out procedure for selecting appropriate partner for joint venture. The Chairman was also authorized to lay down guidelines for MOA and MOU for the regional centre.

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

The Chairman was authorized to re-constitute UMC committee for the academic session 2006-07

The meeting ended with the vote of thanks to the chair.

(Dr. M.S. Grewal)
Registrar
13/9/06

(10)

APPENDIX A – I

LIST OF THE MEMBERS ATTENDED THE MEETING

1. Dr. D.S. Hira, Principal, BBSB Engg. College, Fathegarh Sahib
2. Prof. C.L. Kochher, Director-cum-Principal, DAVIET, Jalandhar.
3. Prof. (Dr.) Balram Dogra, Director APJIM, Jalandhar.
4. Dr. P.K. Bansal, Principal, MIMIT, Malout
5. Dr. H.B. Sharda, Principal, SBSCET, Ferozepur
6. Dr. H.N. Chandrawat, Principal, Amritsar College of Engg. & Tech. Amritsar
7. Dr. K.D. Mannan, Vice-Principal, LCET, Katani Klan, Ludhiana
8. Dr. A.S. Bansal, Director/Principal BCET, Butta
9. Col (Dr.) J.S. Virk, Retd, Director, PIMT, Mandigobindgarh
10. Dr. D.R. Singh, Dean, GNAIMT, Phagwara
11. Dr. R.C. Chauhan, Director, LIT, Phagwara
12. Prof. S.C. Parashar, Principal, LIT (Architecture), Phagwara
13. Dr. Surinder Bir Singh, Principal, GNDEC, Ludhiana
14. Dr. R.S. Seehra, Professor Emeritus, Desh Bhagat Engg. College, Mandigobindgarh.
15. Dr. H.K. Bhutter, Principal, GTB Khalsa Institute of Engg. & Technology, Chhapianwali
16. Shri H.R. Batra, Principal, Rayat Institute of Pharmacy, Railmajra
17. Dr. V.J. Dhar, Director, Doaba College of Pharmacy
18. Prof. P.D. Sharma, Director/Principal, Rayat & Bahra College of Pharmacy
19. Dr. M.S. Sukhija, Director/Principal, AIET, Faridkot
20. Col Dr. D.S. Grewal, Director-cum-Principal, BMS College of Engg. Muktsar
21. Dr. S.S. Kooner, Principal, SUSCET, Tangori
22. Shri Lakhwinder Singh, Dean Academics, BBSBEC, Fathegarh Sahib.

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23. Dr. Harpal Singh, Principal, GZSCET, Bathinda
24. Dr. G.D. Bansal, Principal, CEC, Landran
25. Shri D.P. Gupta, DSW, CIET, Jansla
26. Dr. K.N.S. Kang, Director, PCTE, Ludhiana
27. Dr. Shalini Gupta, Director, Desh Bhagat Institute of Hotel Mgt. Mandigobindgarh.
28. Shri S.S. Bais, Principal, Chitkara School of Planning & Architecture.
29. Shri IJS Bakshi, Director, Chitkara School of Planning & Architectue.
30. Shri J.K. Gupta, Principal, College of Architecture, IET, Bhaddal.
31. Shri Shivjit Walia, Director, ITFT, Chandigarh.
32. Prof. G.V. Patil, Principal, Global College of Pharmacy, Kahnpur, Khui
33. Dr. R.K. Gupta, Principal CIET, Jansla
34. Dr. M.S. Dhanju, Director BIS Institute of Sci & Tech. Gagra, Moga
35. Dr. K.P. Jandrdhanan, Director, Bhai Gurdas Institute of Mgt. Sangrur.
36. Shri Gurminderjit Singh, Dean College Bhai Gurdas Institute of Engg. & Technology, Sangrur.
37. Dr. Tanuja Srivastava, Director Bhai Gurdas Institute of Engg. & Technology, Sangrur.
38. Dr. Subhash Kumar, Director SSIMT, Dinanagar
39. Dr. I.S. Sandhu, Professor and Vice-Principal, SSIET, Derabassi
40. Dr. I.P. Singh, Principal, SSIET, Derabassi
41. Dr. Kirpal Singh, Director/Principal, Doaba Institute of Engg. & tech. Kharar
42. Dr. B.S. Dham, Director, GTB Dakha
43. Dr. R.L. Gupta Director, College of Pharmacy, Bela
44. Dr Gulshan Kumar, Principal, S.D. College of Pharmacy, Barnala

45. Dr. Arindam Paul, Principal, Akal College of Pharmacy & tech. Education, Mastuana (Sangrur)

46. Dr. G.D. Gupta, Professor & Principal, ASBASJS Memorial College of Pharmacy, Bela

47. Dr. Zahid Ali, AP & Officiating Director, Sar Iqbal Institute of Computer Sciences, Pathankot

48. Dr. Madhu Chitkara, Director, Chitkara Institute of Engg. & Technology, Rajpura.

49. Dr. J.K. Sharma, Principal SPCET, Jaulan

50. Dr. R.G. Tathgir, Principal, LLRIET, Moga

51. Dr. V.P. Batra, Director, Panjab College of Engg. & Tech. Lalru

52. Dr. D.S. Bedi, Prof. Emirutus, IET. Bhaddal

53. Shri Ashwani Sethi, Dean Academics, GGSCET, Talwandi Sabo.

54. Dr. Gurdip Singh, Principal, GGSCMT, Kharar

55. Dr. RPS, Suker Chakra, Director, RIEIT, Rail Majra

56. Dr. Satish Kumar, Principal, BCET, Gurdaspur.

57. Dr. V. Sawny, Principal, Baba Hira Singh Bhattal Institute of Engg. & Tech. Lehragaga.

58. Dr. S.R. Prabhakar, Principal, Indo Global College of Engg.Abhipur.

59. Ar. S.S. Sekhon, Principal, Indo Global College of Architecture, Abhipur.

60. Dr. R.K. Sharma, Principal, SSCET, Badhani

61. Dr. S.K. Goyal, Principal, RIMT, Inst. Of Engg. & Tech. Mandi Gobindgarh.

62. Dr. C.S. Rao, Director-Principal, SVIET, Ram Nagar

63. Dr. G.S. Kainth, Principal, St. Solider Inst. Of Mgt. & Tech. Jalandhar.

Action taken report on 26th meeting of the Academic Council held on 13th September, 2006 at Chitkara Institute of Engineering & Technology, Vill Jansla (Distt.) Patiala

Item No.	Item	Action taken
26.3	To brief on the decisions taken in the 23rd meeting of the BOG	(b) A large no. of colleges have sent question papers for use in a question bank.
26.6	To deliberate on the issue of the students who had failed to register themselves up to the last date of the registration (31.08.2006)	Implemented
26.7	To approve the syllabi, fee structure and eligibility conditions of the new courses.	The recommendations of the committee are appended at appendix-
26.8	To approve the syllabi for Diploma Course (Electrical & Mechanical stream, 1st and 2nd sem) at UPS ONGC Dehradun	Implemented.
26.11	To deliberate on the proposal to set up a Regional Centre of the University at Khadoor Sahib in Taran taran	The advertisement has been made to invite participation from institutions / private industries.
26.12	Constitution of UMC Committee	The newly constituted committee is being sent to BOG for its approval.

Appendix -C

REGULATIONS FOR MASTER OF PHARMACY

1. The duration of the programme for the Degree of Master of Pharmacy (M. Pharm.) shall be of two years, comprising of two semesters (12 months) and one full year devoted to research project allotted after IInd Semester. The duration of each semester will be 90 teaching days. The maximum period in which such a candidate must qualify in the course work shall be three academic years, following which he/she not be allowed to continue his/her studies for the programme*.
2. A person who holds valid GATE score and has passed one of the following examinations with minimum of 55% shall be eligible for admission to first semester of Master of Pharmacy course.
   (a) B. Pharm. examination of the Panjab Technical University (PTU).
   (b) B. Pharm. examination from another university recognized by the PTU as equivalent to (a).

   In case sufficient number of GATE qualified candidates is not available, non-GATE candidates may be admitted on B.Pharm merit basis.
3. The examination for the degree of Master in Pharmacy shall be held twice in an academic year at the end of each semester (Semester I & II) involving theory and laboratory (practical) course as per scheme of examination#.

   The second year shall be devoted to a research project allotted after II semester. The examination shall consist of submission of the thesis and presentation of the work at the seminar.

   3.1 The last dates for receipt of examination admission forms and examination fees without and with late fees shall be fixed by the university.

   3.2 The examinations of both the semester, I and II semester, shall consist of two theory papers for each semester and one practical each.

      3.2.1 Each theory paper shall be of three hours duration with maximum marks 100, out of which 20 marks will be assigned to internal assessment based on conduct of minimum one house examination, and 80 marks allotted to the final paper. The final theory paper would be set by the external examiner only and evaluation would also be done by the external examiner. The examiner would be from a panel approved by the university.

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* The duration of the part time course for Master of Pharmacy programme for the current Batches as admitted in 2005 and 2006 working as teacher in the college affiliated to the university (PTU) shall be minimum of three academic years. The maximum period in which such a candidate must complete course work shall be five academic years, failing which he/she shall not be continue his/her studies for the programme.

\# The examination of the current batches will be held at the end of one academic year in June/July and supplementary in December/January. For batches admitted subsequent to 2006, new guidelines would be provided

3.2.2. For practical examination there will be one external examiner from a panel approved by the university and one internal examiner recommended by the Principal/Head of the institution. The duration of each practical examination would be minimum twelve hours with maximum marks 100, out of which 20 marks would be minimum assessment on the basis of day to day evaluation of practical conducted.

3.2.3. The minimum pass marks shall be 50% both in theory and practical. The candidate shall have to pass separately with minimum of 50% marks both in internal assessment and final examination, both in theory and practical.

3.2.4. The evaluation of the thesis submitted at the end of the second year shall be done independently by an external examiner approved by the university on the recommendation of the Board of studies, and the research guide who would act as an internal examiner.

The thesis would be evaluated out of maximum marks 400, out of which 300 marks would be for thesis evaluation and 100 marks for its presentation and defence in a public seminar. The presentation and defence will be conducted in the presence of the research guide, external examiner and Principal/Head of the institution. Members of the teaching staff and research students of the institute would be invited for the public viva voice.
The qualifying marks would be 50 per cent.

4. A student who possesses the qualifications laid down in regulation 2 has remained on the rolls of the university or of a college affiliated to the university of Master of Pharmacy programme in the branch of Pharmacy selected by him/her for the academic term of the semester concerned and produce the following certificates signed by the head of the department or by the Principal of the college as the case may be shall be eligible to appear in the examination of that semester.

(i) of good moral character.
(ii) of having attended of each course not less then 75% of the lectures and 75% of the total sessional work, in tutorials. laboratory work and seminars and of having acquainted himself/herself creditably on all the exercise or periodical examinations conducted in the university department or the colleges, as the case may be from time to time.

4.1. A deficiency in the required number of lectures and practicals may be condoned up to 10% by the head of university department / principal of the college, as the case may be.

4.2. In case the attendance of a regular student falls below 75% in any course during a month. He/She will not be paid fellowship (if granted) for the month. Further if his/her attendance again falls short of 75% in any course in any subsequent month in that semester, his/her studentship and fellowship may be terminated.

5. The amount of admission fee to be paid by a candidate shall be
(i) For each semester as decided by the university
(ii) For the thesis as decided by the university.

6. Every candidate shall be required to satisfy the following requirements.
(a) He/She will have to pass in all the theory papers.
(b) Two copies of Thesis to be submitted to the university.

6.1 English shall be the medium of examination.

7. The candidate shall prepare his/her thesis under the supervision of the teacher concerned in the college institute. If, however, principal/head is satisfied that facilities for preparing the thesis exist elsewhere (recognized by Punjab Technical University, Jalandhar). He/she may allow the candidate to prepare his/her thesis there and his/her period shall count towards the requirement for the Master's Degree Programme. but the candidate shall complete his/her thesis under the supervision of his/her teacher. In such a case the candidate will be allowed to have the co- supervisor from the concerned institution.

7.1 In case the thesis supervisor leaves the college/institute and joins some other institution affiliated to Punjab Technical University or some R & D Organization he/she may continue to guide the thesis work of the candidate registered with him/her or a new supervisor may be appointed principal/head.

7.2 The thesis shall present an orderly and critical exposition of the existing knowledge of the subject and shall embody results of original investigation and shall demonstrate the capability of the candidate to do independently and the sources from which he/she obtained other information contained in his/her thesis.

7.3 Two copies of the thesis shall be submitted to the university through principal/head by the candidate at any time after the completion of the course provided that he/she has appeared in all the theory papers. The result of the thesis shall be declared after the candidate passes in all the theory papers and the seminar. In case thesis is rejected or he/she is unable to complete the Thesis in time he/she will be allowed one years more time at the maximum for submission of thesis or revision by the principal/head.

Provided further that the extension beyond the above limit but not exceeding one year may be allowed by the Vice Chancellor on the recommendation of the principal/head of the institute as the case may be.

8. Successful candidates shall be classified as under:-

(a) Those who obtain 75% or more of the aggregate marks of all the theory papers and the thesis & viva shall be adjudged to merit distinction provided that the candidate has cleared the examination in each subject at the first attempt (first time when a candidate actually takes the university examination in the concerned subject) are entitled as having been placed in first division with distinction.

(b) Those who obtain 60% or more of the aggregate marks of all the theory paper, thesis & viva are entitled to be classified as having been placed in first division.

(c) Those who obtain less then 60% of the aggregate marks of all the theory papers, thesis & seminar but not less than 50% marks in each theory paper shall be declared as passed in second division.

8.1 The result of examination would be notified by the PTU.

If a candidate is unable to pass separately in any paper/practical, he/she will be placed under reappear in that paper only. However, he/she shall be allowed to study for next semester examination & shall be permitted to appear in the un-cleared papers of the previous examination in the subsequent examination (to a limited number of chances permitted by the rules and regulations), which shall be held along with the papers of the higher examination.

Note: - Regulations of Punjab Technical University, Jalandhar are subject to periodic review and change from time to time.

Appendix – D

Title : Permeability and Strength Characteristics of Steel Fibre Reinforced Concrete

ABSTRACT

By

AMRITPAL SINGH

Supervisors:
Dr. D. Singhal
Assistant Professor
Department of Civil Engineering
GZS College of Engg. and Technology
Bhatinda

Dr. Ramji Agrawal
Professor of Civil Engg.(Retd.)
Department of Civil Engineering
Institute of Technology
Banaras Hindu University
Varanasi

PUNJAB TECHNICAL UNIVERSITY

JALANDHAR

ABSTRACT

The use of steel fibre reinforced concrete (SFRC) as a construction material has now been well established. SFRC is considered superior to plain cement concrete (PCC) not only because of its better compressive, tensile, flexural and shear strengths but also due to improved ductility, impact, post-cracking behaviour, toughness etc SFRC has found many applications such as in bridge deck overlays, highway and airfield pavements, rock slope stabilization, concrete pipes, dolosses, blast and earthquake resistant structures.

The durability of any concrete structure is of great importance as the structure should be able to withstand all stresses and remain functional throughout its life span. Designers of concrete structures required to become durability conscious. Whereas properly constituted, placed, compacted and cured concrete has a long serviceable life under most natural and industrial environments, however, premature failures of concrete structures do occur. There could be many reasons for such failures of the structures like poor design, use of poor quality materials, bad workmanship , deterioration of concrete due to ingress of harmful ingredients etc.

Water is generally involved in every form of deterioration, and in porous solids permeability of the material to water usually determines the rate of deterioration. Thus , of the many factors that affect the durability of concrete structures, permeability is considered to be the key factor. Though lot of work has been reported on the permeability of plain concrete, literature available on the permeability of fibrous concrete in general and steel fibre

reinforced concrete is very scanty. This, investigation, therefore, has been planned with the following objectives:

(i) To study the effects of fibre parameters like fibre content, fibre shape and aspect-ratio on the permeability of Steel Fibre Reinforced Concrete

(ii) To investigate the effect of concrete grade on permeability Steel Fibre Reinforced Concrete.

(iii) To study the effect of curing age on permeability of Steel Fibre Reinforced Concrete.

(iv) To develop relationship among permeability and compressive and split tensile strengths of Steel Fibre Reinforced Concrete

In order to achieve these objectives, an experimental programme was planned. Three concrete mixes having 28 days cube strengths of 20 MPa, 30 MPa and 40 MPa having cement contents of 364.45 kg-mass/m^3, 539.80 kg-mass/m^3 and 610.70 kg-mass/m^3, respectively, were designed. The water content used in all three mixes was kept constant at 196.8 kg/m^3. The cement used in this investigation was ordinary Portland cement (OPC) and the maximum size of the coarse aggregates used was 10 mm. Steel fibres in three shapes viz: straight round (plain), crimped and corrugated having aspect-ratios of 65, 85 and 105 were cut, in the laboratory using a fibre cutting machine, from mild steel wire having a diameter of 0.56 mm. 100 mm size cubes of the above mentioned mixes using three different weight fractions of 1.0%, 2.0% and 4.0% were cast for each shape and aspect ratio of fibres. Cubes were tested for co-efficient of water permeability, compressive and split

tensile strengths after curing periods of 7, 14, 28 and 60 days. The co-efficient of permeability was calculated by using flow method according to IS 3085-1976 as well as depth of penetration method. Plain cement concrete (PCC) cubes of 100 mm size were also cast and tested as reference specimens. Three samples were tested for the determination of average co-efficient of permeability and five specimens were tested for determining the average compressive and split tensile strengths, respectively. In all a total of 576 cube samples were tested for co-efficient of permeability and 960 samples were tested for each of compressive and split tensile strengths. The raw experimental data was statistically analysed. Analysis of variance (ANOVA) technique was used to statistically analyse the effects of different parameters considered on the permeability and strength characteristics of steel fibre reinforced concrete and to determine whether the effects of factors considered in this study was statistically significant. The statistical analysis was carried out at 5% level of significance.

The test results indicate that the co-efficient of permeability of PCC samples decreases with increasing curing periods and concrete grades. The compressive and split tensile strengths also exhibit similar increasing trends.

The co-efficient of water permeability decreased with the inclusion of steel fibres of different shapes and aspect-ratios in different weight fractions. The co-efficient of permeability continued to decrease with increasing fibre fractions. The statistical analysis results revealed that the effect of fibre content on the water permeability of SFRC was significant at all curing ages. The compressive and split tensile strengths also increased with the addition of steel fibres and the effect was statistically significant for all fibre shapes, aspect-ratios, concrete grades and curing ages.

The permeability of SFRC samples decreased when the shape of fibre was changed from plain to crimped ones. The decrease occurred at all fibre fractions, curing ages and concrete grades. The effect of change of fibre shape from plain to corrugated or from crimped to corrugated was not consistent for different weight fractions of fibres. The co-efficient of permeability decreased when 1.0% weight fraction of corrugated fibres was added to plain concrete and the decrease in permeability as compared to PCC samples was higher than that achieved with the addition of plain and crimped fibres. As the fibre fraction was raised from 1.0% to 2.0%, the water permeability, though much less than PCC samples, was higher than that recorded for samples with the same fibre content plain and crimped fibres. As the fibre fraction was further increased from 2.0% to 4.0%, the co-efficient of permeability for samples with corrugated fibres was observed to be higher than for samples with plain and crimped fibres. Similar trends were witnessed for samples tested at different curing ages, fibre aspect-ratios and concrete grades. The compressive and tensile strengths of samples incorporating 1.0% weight fraction of fibres increased as the shape was changed from plain to crimped fibres and the trend continued as the fibre content was raised from 1.0% to 2.0% and then to 4.0%. However, for samples with 4.0% weight fraction of corrugated fibres, both compressive as well as split tensile strengths, indicated a decrease in the observed values as compared to samples containing 1.0% and 2.0% weight fractions of corrugated fibres. The results of the Analysis of Variance (ANOVA) study conducted on the experimental data indicated that the effect of fibre shape on the permeability of concrete was inconsistent, being insignificant at all curing ages for mixes with 1.0% weight fraction of fibres, significant for samples containing 2.0% weight fraction and tested after 28 and 60 days curing periods and being statistically significant for samples with 4.0% weight fraction

from all mixes and tested after different curing periods. The statistical study revealed that the change in fibre shape had a significant effect on the compressive and split tensile strengths of SFRC for almost all mixes and all curing ages.

The change in aspect-ratio of fibres had a very marginal effect on the permeability of SFRC. The permeability of mix containing a particular weight fraction of any fibre shape increased with the increase in fibre aspect-ratio from 65 to 85 and then to 105. The ANOVA study indicated that the increase in permeability with increasing aspect-ratio was insignificant for almost all mixes.

The compressive and split tensile strengths of mixes increased marginally with the increase in aspect–ratio from 65 to 85 and then decreased as the aspect-ratio was changed from 85 to 105. The change in compressive and split tensile strengths of mixes with increase in aspect-ratio was found to be statistically insignificant for all mixes and all curing periods.

The permeability exhibited a second order relationship with the compressive and split tensile strengths. The permeability decreased with increasing fibre contents whereas the compressive and split tensile strengths increased with increasing fibre fractions. Increasing concrete grades and curing age also produced similar results on the co-efficient of permeability and compressive and split tensile strengths.

Regression analysis of the experimental data was carried out to develop relationship between dependent and independent variables considered in this study. Relationships were developed to predict the compressive strength of fibrous concrete, split tensile strength of fibrous concrete and co-efficient of permeability of plain and fibrous concrete mixes. The equations so developed were used to predict the co-efficient of permeability of plain and fibrous mixes and compressive and split tensile strengths of steel fibrous concrete. The

predicted values were found to be close to the experimentally observed data. These equations were also used to predict the compressive and split tensile strengths of fibrous concrete using the experimental data of other authors. It was found that the predicted values were in good agreement with the observed values.

The study thus establishes the fact that inclusion of steel fibres leads to a considerable reduction in permeability in addition to increase in compressive and split tensile strengths. Thus steel fibre reinforced concrete can be used with advantage in aggressive environments where reduced permeability will lead to increased durability.

Appendix - E

INVESTIGATIONS USING NEURAL NETWORK OPTIMIZERS FOR SCHEDULING MULTI-RESERVOIR SYSTEMS

ABSTRACT

~~SYNOPSIS~~

OF

THE THESIS

SUBMITTED

TO

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR
(FACULTY OF ENGINEERING)

FOR

THE AWARD OF THE DEGREE

OF

DOCTOR OF PHILOSOPHY
IN
ELECTRICAL ENGINEERING
BY

Mrs. Veena Sharma

Supervised by

Dr. R. Jha
Department of Instrumentation and Control Engineering
National Institute of Technology, Jalandhar (Pb.)-144011 INDIA.

2005

25

SYNOPSIS

With ever increasing energy requirements, the limited amount of financial resources to build new power generation stations and depleting stocks of fuel coupled with its increasing prices, the efficient and optimum economic operation and planning of interconnected hydro power plants is becoming increasingly important in electric power industry. As such, optimizing the operations of interconnected hydropower plants is vital in the era of water and energy shortage. The solution of this problem is notable component in the planning and operation of a power system where the hydroelectric generation constitutes a significant portion of the installed capacity.

The aim of multi-reservoir system scheduling problem is to find out the periodic water releases from each reservoir and through each power house so as to optimize the total benefit of hydro-generated energy. The constraints that must be considered include load balance, flow balance or continuity equation, the boundary condition on the total available quantity of water, reservoir storage limits and the turbine discharge rate limits. In other words, optimal operation solution methodology should contain some mechanism for making period-by-period release decisions within the framework of user specified criteria functions.

The problem of determining the optimal policy of a multi-reservoir power system is difficult to solve for several reasons. First, it has a non-linear objective function. Second, the production function of a hydro plant is a non-separable function of the discharge and water head which itself is a nonlinear function of reservoir storage. Third, there are bounds on both the state and decision variables. Fourth, the problem is stochastic because neither river flows nor demands for electricity can be predicted a long time in advance. Fifth, water discharge rate in an earlier interval affects the future discharge rates for optimal hydropower generation.

Furthermore, the presence of multiple interconnected reservoirs and the need for multi-period optimization characterize the problem as large-scale problem. Further the hydropower plants supply power through the grid along with other energy sources such as thermal and nuclear in an integrated manner that requires sophisticated co-ordination techniques. All these features when combined make the solution of a large-scale

as well as hardware implementation which will make them suitable for solving large size real world problems.

In the present work three different optimization models for multi-reservoir scheduling problem have been formulated so as to (i) maximize overall hydro-power generations (ii) minimize the energy shortages and to distribute uniformly the energy deficit if any in each time interval and (iii) minimize cost of thermal generation. Different solution techniques based on analog optimization neural networks mentioned below have been developed for solving the above formulated problems:

- Linear Programming Optimization Neural Network (LPONN)
- Quadratic Programming Optimization Neural Network (QPONN)
- Two Phase Optimization Neural Network (TPONN)
- Augmented Lagrange Programming Optimization Neural Network (ALPONN)
- High Performance Feedback Optimization Neural Network (HPONN)

Firstly, in this work an approach based on linear programming optimization neural network (LPONN) has been developed for controlling the interconnected multi-reservoir systems. The objective function considered here is a linear function in the presence of linear constraints. The objective here is to maximize the overall energy generation benefit subject to a number of hydro-system constraints such as bounds on reservoir releases, storages, water balance equation for reservoir plants, generation-load balance equation and coupling constraints. The method is based on the solution of the ordinary differential equations obtained from the energy function of the control problem. The developed method has been implemented on the interconnected four reservoir standard system. The devised technique has shown the potential to achieve true optimal results as compared with other popular techniques.

A method based on quadratic programming optimization neural network (QPONN) for the control of the interconnected multi- reservoir systems has been developed. Quadratic programming represents a special class of nonlinear programming in which the objective function is quadratic in nature and the constraints are linear. Here the objective is to find out the optimal amounts of water releases from each hydro-plant during each time interval in the interconnected system. Also to minimize and distribute uniformly the energy deficit if any, subject to a number of governing constraints such as demand- supply balance, flow balance equation, bounds on reservoir storage, bounds

constrained nonlinear programming problem for the determination of optimal schedules for multi-reservoir systems quite complex.

In addition, none of the scheduling models found at this moment in the literature deals simultaneously with all the aspects of the problem, which include multiple reservoirs, multiple time periods, stochastic inflows and non separable objective functions and constraints. The choice of methods depends on the characteristics of the reservoir system being considered, on the availability of data, and on objectives and constraints specified. In the past, computational methods used for solving this problem have been maximum principle, variational calculus, dynamic programming, nonlinear programming, decomposition methods and network flow programming. But these methods suffer from various computational difficulties such as dimensionality difficulty, large memory requirement, non-optimal results and large computational time. Due to the presence of large number of variables and nonlinear nature of the scheduling problem step size calculation also creates computational difficulties. Also the procedures involved in these traditional approaches are discrete in the sense that the point found in one iteration changes discretely to another point in the successive iteration. Hence these approaches may take large computation time for real world problems.

In recent years there has been a great deal of interest in neural network methodology for solving complicated optimization problems. The sequential or serial computers which contradict the very principle of neural networks cannot be expected to provide an efficient and cost effective realization of artificial neural networks. Neural systems provide computational power and speed through parallel processing. Also the major feature of neural optimization networks is through parallel feedback and connectivity, which greatly enhances the computational power. These networks operate in a collective analog mode with each neuron summing the inputs of hundreds or thousands of others in order to determine its graded output. Collective analog computational circuits can provide the extremely fast computation of solution for large-scale optimization problems because all of the neurons simultaneously and continuously change their analog states in parallel. Parallel analog computation in a network of neurons is thus a natural and powerful methodology to organize a nervous system to solve optimization problems. Thus the procedures involved in neural network based optimization approaches are continuous and, therefore, amenable to parallel processing

on water release and coupling constraints. The QPONN method is based on the network energy function which is made equivalent to the objective function that is to be minimized. The minimum energy search performed by the quadratic programming neural network corresponds to the search for the solution of an optimization problem. It is noted that the equilibrium of the quadratic programming network is asymptotically stable and is in a neighborhood of minimization of the objective function. The network is capable to reach the nearly optimal solution provided its parameters are judiciously selected. An interconnected ten-reservoir standard system control problem is simulated to demonstrate the dynamic behavior of the proposed quadratic programming optimization neural network.

Further a technique based on two-phase optimization neural network (TPONN) has been designed for the optimal operation of multi-reservoir network control problem. The advantage of the proposed technique is that it takes into account the concurrent interaction among all the water release variables of the problem. Here the main objective of this work is to figure out the optimal amounts of water releases from each hydro-plant during each interval in the interconnected system and to minimize and distribute uniformly the energy deficit if any. This TPONN approach is basically a two-stage solution method. In stage 1, the neural network is developed to bring the solution trajectory close to the boundary of the feasible region. In stage 2, the directional vector of the constraints is slowly shifted to the corresponding lagrange multipliers and this moves the solution trajectory to the feasible region which satisfies all practical constraints. Application of this technique to a 10-reservoir interconnected network demonstrates efficacy of the proposed algorithm. It is concluded from the results that the proposed method with proper selection of network control parameters is very effective in providing a good optimal solution.

Furthermore, a solution technique based on augmented lagrange programming optimization neural network (ALPONN) has been presented for determining the optimal hourly amounts of generated powers for the hydro-units in the power system. This methodology is based on the Lagrange multiplier theory in optimization and search for solutions satisfying the necessary conditions of optimality in the state space. The equilibrium point of the network satisfies the Kuhn-Tucker condition for the problem. The equilibrium point of the network corresponds to the Lagrange solution of the problem. Three separate problems have been solved. Two problems are concerned with hydro

generation scheduling and the third one is hydro-thermal generation scheduling. In the first problem, the objective is to minimize the cost of power import from or export to the neighboring systems, to minimize the energy deficit and uniform distribution of the deficit if any during each time interval is the objective in second problem, while in the third problem the cost of thermal power generation is minimized. The augmented lagrange programming optimization neural network is employed to solve these problems. System studies have been performed on standard test systems. The method easily handles the water transport delays between the cascaded reservoirs. The effect of network parameters on the convergence properties of the neural network has been discussed in detail. The short term scheduling results, obtained with the proposed method have been compared with the augmented lagrangian procedure based on conventional augmented lagrangian method and two phase neural network method.

Finally, the use of a high-performance feedback optimization neural network (HPONN) based on a new idea of successive approximation for finding the optimal solutions of multi-reservoir systems has been developed. The main advantages of this neural network over the existing neural network optimization models are that no dual variables, penalty parameters, or Lagrange multipliers are required. This network has very simple structure and has the least number of state variables. In meticulous, the projected optimization network has better asymptotic stability. For an arbitrarily given initial point, the trajectory of the network converges to an optimal solution of the convex nonlinear programming problem. The proposed approach has been tested satisfactorily for its feasibility and efficiency on a standard test system consisting of a multi-chain cascade of four reservoir type hydro-plants and a number of thermal units represented by a single equivalent thermal plant. The objective considered here is to minimize the overall cost of thermal generations spanned over the planning period subject to all system-wide constraints.

b.Papers published in International Conferences

[1]. V.Sharma, R.Jha and R. Naresh " Neural Network Optimizers-An Overview" published in the proc. of International Conference on Emerging Technology (ICET 2003) held in Dec.19-21, 2003 at Kalinga Institute of Industrial Technology, Bhubaneswar-751024, Orissa, India pp. 108.

[2]. V.Sharma, R.Jha and R. Naresh "Global Optimization using Simulated Annealing Neural Network" accepted for publication in the proc. of International Conference on Emerging Technology (ICET-2004) being held at Kalinga Institute of Industria Technology, Bhubaneswar-751024, Orissa, India during Dec. 22nd to 24th,2004.

[3]. V.Sharma, R.Jha and R. Naresh " A feedback neural network optimizer for multi-reservoir network control" communicated to International conference on computer applications in Electrical Engg. recent advances (CERA-05) to be held on Sep. 28th-Oct.1st,2005. at IIT Roorkee.

c.Papers published in National Conferences

[1]. V.Sharma, R.Jha and R. Naresh "Hydro Energy Management-An Overview" published in the proc. of National conference on Emerging Energy Technologies held in March28-29, 2003.pp 153-160, NIT Hamirpur.

[2]. V.Sharma, R.Jha and R. Naresh "Mathematical Modeling of Artificial Neural Optimization Networks" published in the proc. of National conference on Intelligent Systems & Networks w.e.f Feb.27-28, 2004 at Haryana Engg. College, Jagadhari in co-ordination with Centre for Advanced technologies pp.5-10.

[3]. V.Sharma, R.Jha and R. Naresh "Optimization using Neural Networks" published in the proc. of National Conference on Trends of Computational techniques in Engineering, i.e. TCTE-2004 held on Oct. 15-16, 2004 at Sant Harchand S. Longowal centre Institute of Engg. & Technology (Formerly SLIET) pp 70-74.

LIST OF PUBLICATIONS BY THE AUTHOR

a. Papers in International Journals

[1] V.Sharma, R.Jha and R. Naresh "Optimal multi-reservoir Network control by two phase neural network" published in International Journal of Elsevier Science ,Electric Power Systems Research 68(2004) 221-228.

[2] V.Sharma, R.Jha and R. Naresh " Hopfield Neural Network Approach for Multi-reservoir Network Control" published in 'Water and Energy International" Journal, Central Board of Irrigation and Power, Vol. 60, No. 4 Oct.-2004, 21-27.

[3] V.Sharma, R.Jha and R. Naresh "Augmented Lagrange Programming Neural Network for Short-term Hydroelectric Generation Scheduling" accepted for publication in International Journal Engineering Optimization USA. Taylor & Francis Group,U.K.

[4] V.Sharma, R.Jha and R. Naresh "Quadratic Programming Neural Network Approach for Multi-reservoir Network Control communicated to International Journal of Electrical Power and Energy systems, Elsevier Science, Australia.

[5] V.Sharma, R.Jha and R. Naresh "A neural network optimizer for scheduling hydro-power generations" communicated to International Journal of Power and Energy systems, ACTA Press, Canada.

[6] V.Sharma, R.Jha and R. Naresh "Optimal Multi-reservoir Network Control by Augmented Lagrange Programming Neural Network" communicated to International Journal of Applied soft computing, Elsevier science, U.K.

[7] V.Sharma, R.Jha and R. Naresh " Hydro-scheduling using a feedback neural network optimizer" communicated to International Journal of Engineering Intelligent Systems" CRL publishing Ltd. U.K.

Appendix- F

Agenda Points for the 27th Academic Council Meeting of Punjab Technical University, Jalandhar to be held on 10th November, 2006 at Desh Bhagat Institute of Hotel Management & Catering Technology, Amloh Road, Mandi Gobindgarh.

Item No. 1 The Bachelor of Engineering Programme in 'Information Technology' B.E. (I.T.) based on SLIET pattern (three years duration), has been started w.e.f. Session 2006-07, with intake of 30 candidates. AICTE and MHRD have already approved this programme (Annexure I & II). The BOS of PTU has approved the study scheme and syllabi of 1st and 2nd Semester during its meeting held on 12.09.2006. The complete study scheme and syllabi for B.E. (Information Technology) will be put up in the meeting of Academic Council. The matter may kindly be approved.

Item No. 2 As per the Promotion Rule of Academic Regulations-2004 for SLIET, the student (s) who are unable to pass 50% theory papers of 1st and 2nd semester combined together were not eligible for registration to the 3rd Semester. Similarly, according to 2001 Regulations, a student shall be allowed to study 5th Semester only after passing all the subjects of 1st Semester and also in 6th Semester after passing all subjects of 2nd Semester. Thereafter, the PTU vide letter No. PTU//Reg/3978 Dated 22nd August, 2006 has granted exemption in the referred provision and allowed the affiliated colleges to register the students in the 3rd and 5th Semesters provisionally till the exact details of amendments as approved by the Board of PTU are notified. In view of the relaxation notified by PTU vide letter annexed at Annexure-III, the students were admitted in the 3rd and 5th Semesters provisionally. In view of above relaxation, the students who have opted 2001 regulations, will also be registered in 6th Semester. The matter may kindly be regularized.

Item No. 3 As per the existing study scheme applicable for degree courses of SLIET, the student is required to obtain 40% minimum marks in external examinations (for theory and practical). However, the student will pass the subject, if he/she obtains 50% overall marks (combined internal and external marks). The students of other Colleges affiliated with PTU, Jalandhar are required to pass a subject after obtaining 40% Marks from internal Examinations and 40% Marks from External Examination with overall pass percentage of 40%. It is proposed that the passing of a subject for students of SLIET may also be made the same i.e. "the candidate shall pass a subject after obtaining 40% marks in internal examinations and 40% marks in external examinations with overall pass percentage of 40% marks" w.e.f. 2007. This amendment to SLIET rule may kindly be approved.

Appendix – G.

REGULATIONS OF PTU FOR DEGREE OF DOCTOROF PHILOSOPHY

1. Eligibility:

A candidate seeking admission to Ph.D programme of the Punjab Technical University, Jalandhar, should possess the following qualifications:

1.1 A Master's Degree in the relevant discipline from a recognized University with a minimum of 60% marks where marks are awarded or with a minimum cumulative grade point average (CGPA) of 6.75 on a 10 point scale or equivalent as determined by University wherever letter grades are awarded.

1.2 However degree will be awarded in the concerned faculties approved by the AICTE (Engineering, Management, Pharmacy, Hotel Management & Architecture).

2. Registration/Synopsis:

2.1 A candidate wishing to enroll for the Ph.D degree shall fill up the prescribed application form and submit the same along with a fee of Rs. 10,000/- to the Head of the Institution for onward submission to Registrar, Punjab Technical University, Jalandhar. All those who are registering for Ph.D will also pay Annual Fees of Rs. 5000/- to the Institute from which student is Registering for his/her Ph.D. The University employee shall however, be exempted 50% concession in the university registration fee.

2.2 The candidate will be required to submit detailed synopsis to the University either along with application or within a period of 3 months of his/her enrolment indicating: -

Area of Research

The title of Research proposal

Objectives

Technical Programme

Word done on the topic/related aspects in India and abroad.

References

If he does not submit his /her synopsis after upto six months his enrolment shall be cancelled.

2.3 The candidate will be provisionally registered on the date of receipt of his application in the University and registration will be confirmed on acceptance of synopsis.

2.4 " The application and synopsis shall be scrutinized by a research degree committee (RDC) of the concerned faculty which shall be constituted by the university for the relevant disciplines.

The RDC shall consist of :-

Concerned Director/Dean of the University (Chairman)

Three senior professors of the subject from the Punjab Technical University affiliated colleges nominated by the Vice Chancellor.

One external/internal expert of the subject to be nominated by the Vice - Chancellor

Supervisor of the candidate.

2.5 The tenure of the Committee shall be three years or till a new committee is formed.

2.6 The above committee will scrutinize the application and synopsis of the candidate in regard to suitability of the research topic and capability of the student to carry out the research. On the recommendation of the RDC the Vice-Chancellor will approve the synopsis and allow the applicant to register for the Ph.D degree.

2.7 The RDC will meet at least once in a quarter. The quorum of the committee meeting will be at least 2 persons, in addition to the Chairman of the Committee.

2.8 The candidate will be required to make a presentation about the proposed research work before the RDC indicating the objectives, scope, methodology, relevance and importance of the proposed study.

2.9 The University will ensure that all formalities regarding registration viz convening of meeting, presentation by the candidate etc. are completed in a period of not more than 3 months from the date of submission of synopsis by the candidate.

2.10 In case the University /Committee rejects the synopsis , the candidate will be allowed to resubmit the same after necessary revision with in a period of not more than 6 months, which will be re-evaluated by the research board as and when re-submitted.

2.11 In case the synopsis is rejected second time, the candidate will have the option to apply for fresh registration on a new topic of research.

2.12 A candidate will renew his/her registration every year by submitting annual progress (through his advisor and Head of Institute/College) to the Registrar along with a continuation fee of Rs. 2000/- p.a. If candidate fails to renew his registration within three months registration will be cancelled.

2.13 Continuation of the registration of a student in the Ph.D programme will depend on his/her satisfactory progress and conduct. Report submitted by the supervisor through HOD of the Institution. The University reserves the right to cancel the registration of any candidate in the event of his conduct and progress being found otherwise.

3. Supervisor(s)

3.1 The research work of each scholar will be normally supervised \ by one or two approved research guides who agree to guide the student on the topic specified in the synopsis.

A teacher shall be approved by RDC as a research guide on his application on a prescribed performa.

Normally one of the supervisors will be from the department of the university or an affiliated college of the university where the candidate proposes to pursue his research work. The research guides will be appointed by the RDC, keeping in mind the candidate's choice.

3.2 The Minimum stay-in-period required for submission of thesis from the date of registration in 2 years. In case a candidate is not able to submit his\her thesis within 4 years of his\her registration. He\she will get the period extended from the University. Such extension can be granted for a maximum period of 2 years (1 year at a time). Provided the application of the candidate is duly recommended by the supervisor.

3.3 In the case of two or more supervisors, the teacher working in the PTU department or the Institute/College affiliated to PTU will be the Supervisor and other will be co-supervisor. In case more that one supervisor are working in the PTU department/ or in an Institute/ College affiliated to PTU, the teacher working in the Institution where the candidate is registered will be the Supervisor.

3.4 To guide Ph.D. research, a supervisor is expected to have a Ph.D. degree himself. Without a doctorate degree in the subject, the supervisor should

have conducted independent research. This relaxation will be given by the Vice-Chancellor on recommendation of the RDC.

3.5 A faculty member at the level of Professor can supervise 8 Ph.D. students, Assistant Professor 6 and Lecturers 4 at a time.

3.6 In very special circumstances, where it is not possible for the candidate to work with the supervisor/co-supervisor, a request for change of supervisor/co-supervisor can be considered by the university, provided such a request of the candidate is duly recommended by the supervisor/co-supervisor. The Vice Chancellor will have approve such a change. However, under exceptional circumstances the Vice Chancellor will have the discretion to allow change of Supervisor/co-supervisor on the request of a candidate.

4. **Submission of Ph.D Thesis:**

4.1 A candidate will normally pursue his/her research work in an institution affiliated to PTU. However, candidates working outside the university jurisdiction can be registered on the condition that such a candidate will stay at the place of his/her supervisor for a period of at least twelve months during the total tenure of research work. This period could be spread suitably during different years subject to the availability of the supervisor.

4.2 A candidate will be allowed to submit his/her thesis only if he/she has published at least 2 papers related to his/her research work in the referred journal or in a journal published by AICTE approved Institute. Such a candidate will be required to submit copies of published papers along with his/her request for submission of thesis.

4.3 Application for extension of the period for submission of thesis may be considered by the RDC on the recommendation of the Supervisor who shall indicate the period for such extension, keeping in view the progress already made by the candidate in his work.

4.4 A candidate may be permitted to modify the title of his thesis with the permission of the Vice Chancellor on the recommendation of the supervisor and HEAD OF THE department or Institute/college concerned not late than six months before the submission of thesis.

4.5 At least two months prior to final submission the candidate shall present his research findings along with recent work in that area before RDC.

4.6 Every candidate will be required to make a pre-submission presentation at least two months before the submission of thesis. Such a presentation may

be organized on the request of the candidate in the College where the candidate is working. The presentation will be open to other members of faculty & students.

4.7 A candidate will submit five copies of his/her thesis neatly typed/printed along with the requisite certificate from the Supervisor/Co-Supervisor through the Principal/Director of the College/Institute where he/she has been working. After the acceptance of the thesis for the degree, one copy each will be sent to the University library and College/Institute library.

5. Thesis Examination/Viva Fee:

5.1 Every candidate submitting the thesis will pay to the university, a thesis examination fee of Rs. 10,000/- (Rs. Ten Thousand only) at the time of submission of the thesis and a summary of research work. This rule will apply to all those who have not submitted the thesis and all those who are awaiting viva even if they have submitted the thesis.

5.2 The Ph.D guide will submit to the university, a panel of 4 to 5 proposed examiners for the thesis examination depending upon the availability of Number of experts, of which the university will invite any two members for adjudication of the thesis. If in the opinion of the guide, only 3 members are available for reasons of expertise, a panel of only 3 members will be suggested. The opinion of the two examiners will be final. In case, two examiners differ in their opinion, a third examiner will be invited from the panel already available, and the majority decision (opinions of two out of three) will be final.

5.3 The thesis will include a certificate in prescribed format duly signed by the candidate and his supervisor (s), that the work submitted in the thesis is the original contribution by the student and that it has not been submitted earlier for any degree. Separate copies of thesis would be submitted to the external examiners, who would be required to submit independent reports within three months. The report would specify, if the work incorporated in the thesis is of sufficient merit for the award of Doctoral degree, in that case they will recommend the award of degree of Doctor of Philosophy. The reports of the examiners will be put before the RDC. If the Committee is satisfied that the reports of the examiners are unanimous and definite, it may recommend that the Viva-Voce examination of the candidate be arranged. The candidate will then be required to undergo a Viva-Voce test to be conducted by the two

examiners: one shall ordinarily be the supervisor while the other one will be one of the external examiners. The viva-voce test will be open to all interested in the subject, where the candidate shall be required to present the main findings of his thesis and defend the same. The candidate shall be asked to answer all such questions, which the external examiners might have raised in their reports.

5.4 After satisfactory viva-voce the Committee may recommend that the result of the candidate be declared. In case the report shows a divergence of opinion between the examiners, the committee may request the examiners to submit a joint report, if possible. If there be divergence of opinion even after the exchange of reports, another examiner shall be appointed from the panel of examiners already approved, whose decision shall be final.

5.5 Provided that if two examiners recommend the revision of the thesis either originally or after exchange of reports, the thesis shall be revised and resubmitted. The revised thesis will be sent to the same external examiners for evaluation. In case two examiners reject a thesis, originally or after the exchange of reports, the thesis will be rejected. The report of the Via-Voce examinations shall be placed before the RDC, which may recommend the declaration of the result.

A printed or type written copy of each accepted thesis shall be placed in the University Library where it will be open to reference/inspection. A summary of not more than 1,000 words shall also be furnished by the candidate, to be published as the University may deem fit.

6. Amendments of Regulations: If and when the Ph.D guides/colleges feel the need for modifying Ph.D regulations, the proposal for such amendments will be submitted to the University's RDC.

Appendix-H

Punjab Technical University, Jalandhar
B.Tech. Information Technology
Scheme of Syllabi

1st Semester

Sr,No	Course Code	Course	L	T	P	Sessional Awards	Theory Exam	Pract Exam	Exam Hours	Total Marks
1	AM-501	Engineering Mathematics-I	3	2	0	50	75	--	3	125
2	AP-501	Engineering Physics	3	2	0	50	75	--	3	125
3	IT-501	Object Oriented Programming	3	1	0	25	75	--	3	100
4	IT-503	Fundamentals of IT and Applications.	3	1	0	25	75	--	3	100
5	IT-505	Digital Electronics and Logic Design	3	1	0	25	75	--	3	100
6	IT-511	OOPs Lab	0	0	4	50		50	3	100
7	IT-513	IT applications Lab	0	0	4	50		50	3	100
8	AP-503	Engineering Physics Lab	0	0	2	25		25	3	50
		Course	15	7	10	300	375	125	24	800

2nd Semester

Sr,No	Course Code	Course	L	T	P	Sessional Awards	Theory Exam	Pract Exam	Exam Hours	Total Marks
1	AM-502	Engineering Mathematics-II	3	2	0	50	75	--	3	125
2	AC-502	Chemistry Of Engineering Materials	3	2	0	50	75	--	3	125
3	HU-502	Presentation and Communication Skills	2	1	0	25	50	--	3	75
4	HU-504	Financial Accounting	2	1	0	25	50	--	3	75
5	IT-502	Data Structures & Algorithms	3	1	0	25	75	--	3	100
6	IT-504	Microprocessors and Interfacing	3	1	0	25	75	--	3	100
7	IT-512	Data Structure & Algorithms Lab	0	0	4	50	--	50	3	100
8	IT-514	Microprocessor Lab	0	0	2	25	--	25	3	50
9	AC-504	Engineering Chemistry Lab	0	0	2	25	--	25	3	50
			16	8	8	300	400	100	27	800

Punjab Technical University, Jalandhar
Masters in Service Industry Management
Scheme of Syllabi

1st Semester

Course No	Subject	L	T	P	Maximum Marks	
					Int.	Ext
PGS-101	Global Continental & Regional Emerging trends in Service Industry	4	-	-	40	60
PGS -103	Service Management Basics	4	-	-	40	60
PGS -105	Major Segments in Service Industry Management -I	4	-	-	40	60
PGS -107	Business Communication & Cross Cultural Management in Service Industry	4	-	-	40	60
PGS -109	Total Quality Management in Service Industry	4	-	-	40	60

2nd SEMESTER

Course No	Subject	L	T	P	Maximum Marks	
					Int.	Ext.
PGS-102	Strategic Management for Service Industry	4	-	-	40	60
PGS -104	Sales & Marketing Management in Services	4	-	-	40	60
PGS -106	Major Segments in Service Industry Management -II	4	-	-	40	60
PGS -108	Research Methodology & Management Decisions	4	-	-	40	60
PGS -110	Customer care & Interpersonal Skills	4	-	-	40	60

3rd SEMESTER

Course No	Subject	L	T	P	Maximum Marks	
					Int.	Ext.
PGS-201	Project Planning Analysis implementation	4	-	-	40	60
PGS-203	Strategic Marketing	4	-	-	40	60
PGS-205	Creativity & Entrepreneurship	4	-	-	40	60
PGS-207	Cross Cultural Management	4	-	-	40	60
PGS-209	Human Resource Management	4	-	-	40	60

4th Semester

Course No	Subject	L	T	P	Maximum Marks	
					Int	Ext
PTA-202	Employability skills Management	4	-	-	40	60
PTA-204	Management Information System	4	-	-	40	60
PTA-206	OJT (Dissertation)	4	-	-	150	250

Internal marks of OJT will be given on the basis of Presentation and Viva Conducted at the institute and External Marks will be on the basis of Viva conducted by External Examiner.

45

(42)

PUNJAB TECHNICAL UNIVERSITY
Master's in Airlines Tourism and Hospitality Management
Scheme of Syllabi (1st to 4th Semester)

1st Semester

Course No	Subject	L	T	P	Maximum Marks	
					Int.	Ext
PTA-101	Tourism Products & Service	4	-	-	40	60
PTA-103	Global Trends in Tourism and Tourism concepts	4	-	-	40	60
PTA-105	Travel agency and Tour Operations	4	-	-	40	60
PTA-107	Airlines Management	4	-	-	40	60
PTA-109	Customer Care & Interpersonal Skills	4	-	-	40	60
PTA-111	Front Office Operations	4	-	-	40	60

2nd Semester

Course No	Subject	L	T	P	Maximum Marks	
					Int	Ext.
PTA-102	Tourism Promotion Resort Mgt	4	-	-	40	60
PTA-104	Automation in Tourism, Hospitality & Airlines	4	-	-	40	60
PTA-106	Geography	4	-	-	40	60
PTA-108	Housekeeping in Hospitality Operations	4	-	-	40	60
PTA-110	Strategic Mgt Marketing Sales & PR	4	-	-	40	60
PTA-112	Conference and Events Mgt (Practical)		-	4	60	40

3rd Semster

Course No	Subject	L	T	P	Maximum Marks	
					Int.	Ext.
PTA-201	Business Communication, Consumer Behavior & Cross Cultural Communication	4	-	-	40	60
PTA-203	Tourism Management	4	-	-	40	60
PTA-205	Food & Beverage Service	4	-	-	40	60
PTA-207	Human Resource Management	4	-	-	40	60
PTA-209	Mice (Meetings, Incentives, Conventions, Exhibitions.)	4	-	-	40	60

4th Semester

Course No	Subject	L	T	P	Maximum Marks	
					Int.	Ext.
PTA-202	Employability skills management	4	-	-	40	60
PTA-204	Management Information System	4	-	-	40	60
PTA-206	OJT (Dissertation)	4	-	-	150	250

Total Subject: 20

Punjab Technical University, Jalandhar
Masters in Medical Lab Technology
Scheme of Syllabi (1st Semester)

1st Semester

Course No	Subject	L	T	P	Maximum Marks	
					Int.	Ext.
MSMLT-101	Principles of Bio-Chemistry	5	1		40	60
MSMLT-103	Enzymes & Metabolism	5	1		40	60
MSMLT-105	Vitamins, Hormones, General Physiology & Nutrition	5	1	-	40	60
MSMLT-107	Principles of Bio-Chemistry Lab	-	-	4	40	60
MSMLT-109	Enzymes & Metabolism Lab	-	-	4	40	60
MSMLT-111	Vitamins, Hormones, General Physiology & Nutrition Lab	-	-	4	40	60

Punjab Technical University, Jalandhar
B.Sc(Media Entertainment & Film Technology)
Scheme of Syllabi (1st Semester)

1st Semester

Course No	Subject	L	T	P	Maximum Marks	
					Int.	Ext.
BMEFT-101	Human Communications	4	-	-	40	60
BMEFT -103	Dynamics of Language	4	-	-	40	60
BMEFT -105	Computer Applications	4	-	-	40	60
BMEFT -107	Print Media	4	-	-	40	60
BMEFT -109	Sociology & Psychology	4	-	-	40	60
BMEFT -111	Communication Lab	-	-	2	40	60
BMEFT-113	Print Media Lab	-	-	2	40	60

Punjab Technical University, Jalandhar

B.Sc(IT)

Scheme of Syllabi

1st Semester

Course No.	Subject	Marks		Total
		Int	Ext	
BS-101	Communication Skills	40	60	100
BS-103	Basic Mathematics-1	40	60	100
BS-105	Programming in C	40	60	100
BS-107	Fundamentals of Information Technology	40	60	100
BS-109	Software Lab-I(C)	60	40	100
BT-111	Software Lab-II(FIT)	60	40	100
Total		280	320	600

2nd Semester

Course No.	Subject	Marks		Total
		Int	Ext	
BS-102	Digital Electronics Fundamentals	40	60	100
BS-104	Mathematics - II (Discrete)	40	60	100
BS-106	RDBMS-I	40	60	100
BS-108	Data Structures through C	40	60	100
BS-110	Software Lab-III (Data Structures)	60	40	100
BT-112	Software Lab-IV (RDBMS)	60	40	100
Total		280	320	600

48

45

3rd Semester

Course No.	Subject	Marks		Total
		Int	Ext	
BS-201	Computer System Architecture	40	60	100
BS-203	Operating System	40	60	100
BS-205	Programming in C++	40	60	100
BS-207	System Analysis & Design	40	60	100
BS-209	Software Lab-V(C++)	60	40	100
Total		220	280	500

4th Semester

Course No.	Subject	Marks		Total
		Int	Ext	
BS-202	Core Java Programming	40	60	100
BS-204	Web Technology-I	40	60	100
BS-206	Microprocessor System	40	60	100
BS-208	Computer Oriented Numerical Methods	40	60	100
BS-210	Software Lab-VI (Core Java Programming)	60	40	100
BS-212	Software Lab-VII (Web Technology-I)	60	40	100
Total		280	320	600

49

46

5th Semester

Course No.	Subject	Marks		Total
		Int	Ext	
BS-301	Web Technology-II	40	60	100
BS-303	RDBMS-II	40	60	100
BS-305	Computer Networks	40	60	100
BS-307	Principles of Management	40	60	100
BS-309	Software Lab-VII(Web Technology-II)	60	40	100
BS-311	Software Lab-VIII(RDBMS-II)	60	40	100
BS-313	Software Lab-IX(Computer Networks)	60	40	100
Total		340	360	700

6th Semester

Course No.	Subject	Marks		Total
		Int	Ext	
BS-302	Software Engineering	40	60	100
BS-304	Management Information Systems	40	60	100
BS-306	Visual Basic Programming	40	60	100
BS-308	Advanced Java Programming	40	60	100
BS-310	Software Lab-X (Visual Basic Programming Lab)	60	40	100
BS-312	Software Lab-XI (Advanced Java Programming)	60	40	100
Total		280	320	600

(47)

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	-	-	20	30	50
7.	BSBT-111	Inorganic Chemistry Lab	-	-	2	40	60	100
8.	BSBT-113	Introduction & Fundamentals of Biotechnology Lab	-	-	2	40	60	100
9.	BSBT-115	Basics of Biosciences Lab	-	-	4	20	30	50
10	BSBT-117	Computer Application in Biotechnology Lab	-	-	2	40	60	100
	Total		18	3	10			900

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

3rd Semester

Course Code	Course Title	Hours	Per	Week	External Marks	Internal Marks	Total
		L	T	P			
BM-201	Basics of Bio Technology	4	-	-	60	40	100
BM-203	Anatomy & Physiology	4	1	-	60	40	100
BM-205	Electronic Devices & Circuits	4	1	-	60	40	100
BM-207	Bio Chemistry	4	1	-	60	40	100
BM-209	Histology	4	1	-	60	40	100
BM-211	Bio Chemistry Lab	-	-	2	20	30	50
BM-213	Anatomy & Physiology Lab	-	-	2	20	30	50
BM-215	Electronic Devices & Circuit Lab	-	-	2	20	30	50
	Workshop Training				40	60	100
	Grand Total	**20**	**4**	**6**	**360**	**290**	**750**

Contact Hours : 30

52

49