



Bahria University


Discovering Knowledge

MS/MPhil/Equivalent RULES 2023



LETTER OF PROMULGATION

1. This document titled "MS/ MPhil/Equivalent Rules 2023", is hereby Promulgated with effect from Fall 2023 semester.
2. The document contains 130 pages, numbered 1 to 130. Master copy of the document is held with the Regulations Cell. In the event of any change desired in the document, an amendment request is to be put up to the Directorate of Post Graduate Programs for processing.
3. These Rules shall be read in conjunction with the general Academic Rules/Regulations of the university. In matters where these Rules are silent, relevant rules/regulations and procedures of BU shall apply. In addition, MS/MPhil/Equivalent requirements are revised by the HEC from time to time which shall be complied with and shall take precedence over these Rules should there be a conflict.


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Table of Contents

1. Preamble	4
2. Definitions	4
3. Research Committees	6
4. Higher Education Research Committee (HERC)	6
5. Faculty Research Committee (FRC)	7
6. Departmental Research Committee (DRC)	9
7. Admission Committee	10
8. Ethical Review Committee (ERC)	10
9. Grievance Management Committee.....	12
10. Post Graduate Programmes (PGP) Directorate	13
11. Post Graduate Programmes (PGP) Coordinator	14
12. Eligibility	15
13. Selection, Admission & Registration Procedure	15
14. Programme Credit Hours	16
15. Programme Duration	16
16. Migration In & Out of the University	18
17. Exemption and Transfer of Credits	18
18. Pursuing MS/MPhil Courses outside the BU	19
19. Course Withdrawal	19
20. Semester Freeze	20
21. Refund/Adjustment of Fee for Course Withdrawal, Semester Freeze and Allied Reasons	21
22. Probation and Dropout	21
23. Assessment Modalities for Coursework	21
24. Supervisors	22
25. Research Proposal Defence	22
26. Research Work Progress Report	24
27. Thesis Submission Requirements	25
28. Thesis Submission	25
29. Thesis Evaluators	26
30. Thesis Evaluation	26
31. Thesis Defence Examiners	29
32. Thesis Defence & Viva Voce Examinations	30
33. Submission of Thesis Revision.....	31
34. Honorarium for Examiners	31
35. Award of Degree	32
36. Honours and Awards	32
37. MS/MPhil Forms	33
MS-1A	35
MS-1B	36
MS-2	37
MS-3	38
MS-4	39
MS-5	41

MS-6	43
MS-7	45
MS-8	46
MS-9	47
MS-10	51
MS-11	52
MS-12	53
MS-13	54
MS-14A	55
MS-14B	56
MS-15	57
MS-16	58
MS-17	59
MS-18A	64
MS-18B	65
Annexure-A Quality Monitoring of Attributes of MS/MPhil/Equivalent Scholar	66
Annexure-B Format and Guidelines of Research Proposal and Research Thesis	67
Annexure-C Thesis Writing Manual.....	74
Annexure-D Grievance Management System	128
Index.....	130

Record of Amendments

Amendment No.	Dated	Authority for Amendment	Articles Amended	Sign

1. Preamble

These Rules called “MS/MPhil Rules” shall apply to all MS/MPhil degree programmes conducted in the Constituent and Affiliated Units of Bahria University (BU). These Rules shall be read in conjunction with the general rules/regulations of the University. In matters where these rules are silent, rules/regulations and procedures of BU shall apply. In case of any doubt regarding the interpretation of these Rules and in matters not clearly covered under these and other rules/regulations of BU, the matter shall be referred to the HERC and/ or Academic Council for the final decision. Furthermore, MS/MPhil requirements set out by the HEC from time to time shall be complied with and shall take precedence over these Rules should there be a conflict.

2. Definitions

- 2.1 In these Rules, unless otherwise specified, or unless there is anything repugnant to the Act and Statutes of BU, the expressions used in these Rules shall have the meaning as follows:
- 2.2 “**Candidate**” means a person seeking admission in MS/MPhil programmes at BU.
- 2.3 “**Co-Supervisor**” means a member of academic and/or research staff of the university/industry with PhD degree who may be appointed to provide academic/technical and/or administrative assistance whenever there is a requirement/need.
- 2.4 “**Department**” means a Department of a Constituent Unit/Faculty of the University in which a student is enrolled for his/her studies.
- 2.5 “**Defence**” means an oral examination of the student in the research work conducted usually in the form of presentation and/or demonstration, before the panel of Examiners, entailing arguments and points supporting the fundamental concepts having been advanced within the thesis.
- 2.6 “**Equivalence Committee**” means three-member committee nominated from the DRC temporarily to ascertain equivalence of the courses applied for Transfer of Credit / Exemption by the student against certain number of courses present in the curriculum of the MS/MPhil programme of the BU.

- 2.7 **“External Examiner”** means a person with a relevant PhD degree, appointed to conduct his/her thesis defence, but is not an employee of the BU at the time of examination.
- 2.8 **“Exemption”** means the student is not required to take a similar course if a student has already completed it within the BU or at any HEC recognized University. When granted Exemption, credits for that course earned previously are not counted towards credits or CGPA requirements for the degree. The student shall be required to take another course to make up for the total number of credits or CGPA required to meet the degree requirements.
- 2.9 **“Form”** means the letters/forms/formats annexed to this booklet, bearing identification numbers MS-1 to MS-18, designed for executing the MS/MPhil programmes activities.
- 2.10 **“Internal Examiner”** means a person with a relevant PhD degree, appointed to conduct his/her thesis defence, and is an employee of the BU at the time of examination.
- 2.11 **“Principal Supervisor”** means a person holding a relevant PhD degree, preferably a member of the academic/research staff of an HEC recognized university, appointed to supervise the research work of a student.
- 2.12 **“Programme”** means an academic programme in MS/MPhil studies being run at the BU.
- 2.13 **“Research”** means the process leading to the production of original studently work in the form of a thesis for the purpose of obtaining MS/MPhil degree.
- 2.14 **“Student”** means a person enrolled in a MS/MPhil programme at the BU.
- 2.15 **“Thesis”** means a written description/document of the research work prepared in the format prescribed by BU and submitted as partial requirement of the MS/MPhil degree.
- 2.16 **“Time Bar/Barred”** is the Programme/Degree status indicating that the student has been unable to complete the degree requirements within the Maximum Programme Duration.
- 2.17 **“Time Late”** means the time period after the completion of the Maximum Programme Duration during which an MS/MPhil student may apply for Waiver to Time-Bar.
- 2.18 **“Transfer of Credits (TOC)”** refers to a process of granting credit to a student enrolled in MS/MPhil programme at the BU for the course(s) undertaken by the student at another HEC recognized higher education institution which is(are) equivalent to certain

course(s) being offered by the BU in the programme student is enrolled in, after having carried out the equivalency ascertaining process. When granted TOC for any course, the credits earned previously for that course are counted towards total credits requirement fulfillment for that student at the BU but not added to the CGPA of the degree.

- 2.19 **“Viva voce”** means an oral examination of the student following his/her presentation at the thesis defence, conducted in the form of interview and discussion aimed at ascertaining evidence and sufficiency of knowledge of the student about the research work the student has worked on.
- 2.20 **“Waiver”** means removal of the Time-Bar status for a specific period in terms of regular semesters or time period to enable the student to complete the shortfall in degree requirements.

3. Research/Equivalent Committees

BU has constituted various research/equivalent committees, as per details in articles 4 to 8. Their functional domains range from policy making to policy implementing and facilitating the postgraduate programmes of the university.

4. Higher Education Research Committee (HERC)

4.1 Composition

a.	Rector	President
b.	Pro-Rectors (RIC, Academics, HS)	Member
c.	Registrar	Member
d.	DGs CUs	Member
e.	All Deans & Associate Deans	Member
f.	Professors	Member
g.	Director Academics	Member
h.	Director Examinations	Member
i.	Director Quality Assurance	Member
j.	Director CUs	Member
k.	All Principals & HODs (all CUs)	Member
l.	Director Post Graduate Programmes	Member
m.	PGP Coordinators	Members
n.	Director RIC	Member & Secretary
o.	Head of Research Centers	Members
p.	Additional Co-opted	Members (as required)

4.2 **Terms of Reference**

- a. Give policy guidelines and directions regarding all major research issues of the faculty members and student of the constituent/affiliated units.
- b. Monitor quality of research outcomes and theses, both at the MS/MPhil and PhD levels.
- c. Specify guidelines and weightage to the publications by the faculty members.
- d. Approve R&D projects that may be undertaken to contribute towards economic development of Pakistan or for fund generation for the University.
- e. Approve collaboration with established research groups in Pakistan and abroad.
- f. Maintain database of national and international research groups/centers and well-known professors/researchers with their consent to become external Examiners for PhD students.
- g. Enlarge its scope and charter in parallel with new academic disciplines and new requirements of contemporary research.
- h. Meet at least twice a year.

5. **Faculty Research Committee (FRC)**

5.1 FRC be constituted by Registrar and headed by Dean of the Faculty. It shall comprise Core and Elective Members.

5.2 **Composition – Core Members**

There shall be 13-15 minimum core members of the FRC including all HODs. Where an HOD is not a PhD, a PhD faculty member from the department shall be included into the committee along with the HOD. The senior most HOD, or the Dean's nominee, shall act as Secretary of FRC.

5.3 **Composition – Elective Members**

There shall be a maximum of six elective members of the FRC including Director PGP, Director ORIC, Director QA, and three members from other Higher Education Institutions, and industry with expertise relevant to the candidates' research-work, provided their qualification is not lower than PhD.

5.4 Terms of Reference

- a. Approve Internal/External Viva Voce Examiners for Final Thesis Defence of MS/MPhil/Equivalent students on the recommendation of DRC.
- b. Evaluate the quarterly progress reports of all MS/MPhil/Equivalent students forwarded by PGP Coordinators through HOD/DRC.
- c. Recommend and maintain lists of External Examiners for Final Thesis Evaluation, Defence and Viva Voce Exam of MS/MPhil/Equivalent students as per HEC policy in vogue after approval from the Rector via HERC.
- d. Form Ethical Review Committee (ERC) to look into ethical dimension of research of MS/MPhil/Equivalent students/scholars.
- e. Ensure plagiarism check on the student's thesis as per HEC policy in vogue.
- f. Approve exemptions/transfer of credits of MS/MPhil/Equivalent candidates' cases.
- g. Review the time bar cases of MS/MPhil/Equivalent students who have extended beyond maximum duration of programs under force majeure events (i.e., delay on account of circumstance beyond the control of student). Suggest corrective measures to stop such cases from recurrence. Recommend the case with extended duration for the approval of the Rector.
- h. Undertake any other research related responsibility assigned by the Head of the Committee.
- i. FRC shall meet at least twice a year, (preferably in February/March and July/August); the quorum of a meeting being the half of the core members. However, special FRC could be held whenever needed. FRC shall maintain the minutes of its meetings, containing clearly documented decisions, and forward its copy to Director PGP.
- j. Decisions of the committee shall be made by consensus and, if that is not possible, by majority vote. Only core members shall be entitled to exercise vote.
- k. FRC will further act as Research Review Committee for post graduate programs in Medical Sciences and will also appoint Supervisor(s) for students.

6. Departmental Research Committee (DRC)

6.1 DRC shall be constituted by Dean of the Faculty and headed by the HOD. PGP Coordinator shall act as the Secretary of the DRC.

6.2 Composition – Core Members

All PhD qualified faculty members.

6.3 Composition – Elective Members

There shall be two to three elective members including from non-teaching departments of the BU and from other Higher Education Institutions, and industry with expertise relevant to the candidate's research-work, provided their qualification is not lower than the PhD.

6.4 Terms of Reference

- a. Appoint Principal Supervisor(s)/Co-Supervisor(s) for MS/MPhil/Equivalent programmes.
- b. Conduct/manage research proposal/Final Theses Defence through PGP Coordinator for MS/MPhil/Equivalent programmes.
- c. Approve the topic of the MS/MPhil/Equivalent thesis on recommendation of the Principal Supervisor before/at the time of Proposal Defence. Approve/ratify any major/minor changes in the topic of the thesis on recommendation of the Principal Supervisor/Examiners post Proposal Defence without changing the main theme.
- d. Evaluate the quarterly progress reports of MS/MPhil/Equivalent students submitted by the Supervisors to HOD/PGP Coordinator.
- e. Recommend exemptions, transfer of credits of MS/MPhil/Equivalent student cases to FRC.
- f. Propose internal/external Viva voce Examiners for MS/MPhil/Equivalent programmes to FRC for approval.
- g. Review the time bar cases of MS/MPhil/Equivalent students who have extended beyond maximum duration of programs under force majeure events (i.e., delay on account of circumstance beyond the control of student) and recommend to FRC.
- h. Undertake any other research related responsibility assigned by the Dean/Principal/HOD.

- i. DRC shall meet at least twice a year, however special DRC could be held, whenever needed. The quorum for a meeting of the DRC shall be half of the total number of core members, a fraction being counted as one. DRC shall maintain the minutes of its meetings and forward to the FRC and PGP Directorate.
- j. Decisions of the committee shall be made by consensus and, if that is not possible, by majority vote. Only core members shall be entitled to exercise vote.

7. Admissions Committee

7.1 Composition

The Admissions Committee shall be constituted by the Director/DG Campus comprising at least three faculty members/research staff holding PhD degrees and headed by the HOD/Principal.

7.2 Terms of Reference:

- a. Determine/assess the suitability of MS/MPhil/Equivalent candidates through written test/interviews and courses undertaken. It will also assess the eligibility of candidates' for intradisciplinary admissions and accordingly recommend the deficiency courses of 6-9 credits of level 6 for MS/MPhil/Equivalent programs.
- b. Scrutinize the documents according to eligibility criteria required for admission in respective programme including the GRE/HAT General/Equivalent admission test results and equivalency certificate of all foreign degrees/certificates issued by the HEC.
- c. Forward the case of recommended candidates through Principal/Director Campus to the Admissions Office for subsequent approval of the Rector.

8. Ethical Review Committee (ERC)

8.1 Composition

Three or more suitable members selected by Dean from within or outside BU depending upon the kinds of expert opinion needed in the research work.

8.2 Terms of Reference

- a. Review the research proposals involving human or other living subjects, whether individuals or communities, before the study begins, and ensure that the conditions that could affect the rights of subjects during a study are approved for the study to begin.
- b. Identify ethical issues or concerns posed by research involving human subjects and undertake sufficient assessment of proportionality of risks and benefits for the individuals and community involved by those issues in order to secure the individuals'/community well-being by maximizing possible benefits while minimizing risks.
- c. Ensure the subjects of research are clearly aware of the nature of the research work and their position in respect of it.
- d. Protect potential participants in the research from being coerced or manipulated to participate in the research work especially those whose capacity is impaired, not capable of giving voluntary consent, or who are in some way dependent or vulnerable to the research revealing. And ensure that the consent being secured is valid, preferably in writing, and the participants are sufficiently informed and have adequate time to decide without pressure.
- e. Ensure subjects shall be able to easily withdraw from a research protocol without giving reasons and without suffering any penalty or alteration in their relationship with providers of services, if any.
- f. Ensure respect for the research participants through protecting their individual autonomy, especially those who are not capable of taking autonomous decisions and maintaining confidentiality of the data and information collected.
- g. Ensure protection of the research subject against any possible serious bodily harm.
- h. Examine and evaluate the process, printed documents and other tools that shall be employed for collecting data.
- i. Assess the incentives that shall be given to the participants to ensure that no unethical consideration is involved in the incentives being offered.
- j. Attempt to reduce and resolve the ethical issues involved in the research as much as possible.
- k. Ensure the integrity of academic research ethics in the MS/MPhil/Equivalent students.

- l. Provide guidance to the MS/MPhil/Equivalent Supervisors/Co-Supervisors and Students on academic misconduct, where necessary.
- m. Promote data privacy and forbid unauthorized access to private and sensitive data.
- n. Ensure that the plagiarism has been tested by the licensed software and HEC policy in vogue are followed in true spirit.
- o. Conduct periodic appraisal of the research being undertaken to ensure subjects of research are protected from harm, their confidentiality is maintained, and their rights are respected. Serious adverse events shall be reported promptly to the FRC.
- p. The ERC may withdraw approval of the research work if it is not satisfied with the level of adherence to the basic ethical guidelines by the student.
- q. Confidentiality of the ERC's proceedings shall be preserved.

9. Grievance Management Committee

9.1. Composition

Three regular PhD faculty members excluding supervisor appointed by the DRC after approval of FRC for all of the PhD scholars. The committee will be fully aware of grievance processes and appropriately competent to ensure that the processes are consistently applied.

9.2. Terms of Reference

- a. Support the students or potential students to launch complaints without fear of discrimination.
- b. Respect the behavior of all parties when handling grievances.
- c. Communicate effectively in a timely manner to keep all parties up to date with the progress of grievances.
- d. Ensure that all information is held at the utmost confidence.
- e. Ensure that the principles of natural justice are applied.
- f. Ensure that grievances are resolved to the satisfaction of all parties.
- g. Ensure the compliance with the grievance management system attached at Annex-D.

10. Post Graduate Programmes (PGP) Directorate

10.1 PGP Directorate ensures smooth and efficient implementation and progression of PG Programmes at BU in line with HEC instructions and BU Statutes/Rules and policies.

10.2 Terms of Reference

- a. Responsible for the quality of graduate degree programs and research conducted under these programs at BU as per Annex-A.
- b. Develop policies and Rules for PG programmes and ensure their effective implementation.
- c. Plan measures/strategies to continuously enhance enrolment in PG programmes in line with practices followed by research-led universities.
- d. Ensure induction/admission of quality PG students by working proactively through the Deans and the HODs.
- e. Ensure all changes suggested by the statutory and regulatory bodies (HEC, etc.) are incorporated in the Rules.
- f. Formally responsible for the monitoring of the progress of PG students throughout the academic programme, to deal with any issues arising, whether academic or personal.
- g. Ensure the development of a framework and mechanism for evaluating the effectiveness of PG programmes.
- h. Create database of quarterly progress reports of PG students in consultation with their supervisors.
- i. Maintain and develop records of current and planned PG programmes in all the departments of CUs.
- j. Guide Constituent Units regarding the progress, monitoring and feedback of PG students.
- k. Search and disseminate the information concerning funding/studentship opportunities relevant to PG programmes.
- l. Develop and upgrade webpage of PG Programmes.
- m. Act as PG Student Affairs office for withdrawal, temporary suspension, transfer of credit, extensions, exemptions etc.
- n. Participate in the orientation of new PhD faculty members and PG students.
- o. Attend FRC/DRC meetings or other statutory meetings.
- p. Perform any other duty assigned by the Rector.

11. Post Graduate Programme (PGP) Coordinator

11.1 PGP Coordinator for each Department, whose appointment based on the recommendations of the HOD shall be notified by the Registrar after due approval of the Rector. Each PGP Coordinator must hold a PhD degree.

11.2 Terms of Reference of PGP Coordinator

- a. Ensure that PG-Rules are being followed by the Department.
- b. Act as secretary of the DRC so as to ensure holding of timely meetings, preparation of its agenda items, preparation/ issuing of minutes of the meetings, (with the approval of chairperson DRC) and monitoring progress on implementation of the decisions taken.
- c. Maintain complete record of research students undergoing PG programmes including:
 - (1) Complete details of their educational documents.
 - (2) Subject and General test results.
 - (3) PG courses completed so far.
 - (4) PhD synopsis/proposals and its approval from the competent authority.
 - (5) Progress reports of the students submitted by the Supervisors.
 - (6) Any other additional information such as registration, freezing of semester and dropping of courses, transfer cases etc.
 - (7) Details of foreign evaluations along with evaluation reports and details of foreign evaluators relevant to his/her department.
- d. Interact with the research students and their supervisor(s) and update/report to FRC/DRC about their progress and guide the students accordingly.
- e. Submit progress reports of each PG student to the FRC and PGP Directorate through the HOD.
- f. Maintain a close working relation with PGP Directorate for overall monitoring of MS/MPhil and PhD Programmes.

12. Eligibility

Eligibility criteria for MS/MPhil Programmes shall be as under:

Requirement	Description
Academic Qualification	<p>Sixteen years of schooling or 4-year education (minimum 120 credit hours) after HSSC/FA/F. Sc/Grade 12 or Equivalent shall be required for admission in the MPhil/MS/Equivalent program.</p> <p>For intradisciplinary admissions, the applicant has a strong interest in pursuing an MS/MPhil/Equivalent degree in a different discipline. He/she has passed GRE-Subject/equivalent test with minimum 50% marks in the discipline of admission and has taken 6-9 CH of deficiency courses of level 6.</p> <p>*Intradisciplinary refers to sub-disciplines occurring within one of the ten broad disciplines defined by UNESCO's International Standard Classification of Education (ISCED-F-2013).</p>
Attestation	HEC's attestation on the candidate's local degrees (on the back of the original degrees).
Equivalency	HEC's equivalency certificate for the candidate's foreign degrees.
Aptitude Test	<p>Rigorous admission test as an eligibility condition for admission to MS/MPhil/Equivalent programs, with a passing score of 50%.</p> <p>OR</p> <p>Accept the GRE/HAT General/Equivalent tests, with a passing score of 50%.</p>
Weightage Criteria	As per prevailing BU Admissions Policy

13. Selection, Admission & Registration Procedure

13.1 The application for admission in the MS/MPhil/Equivalent programmes on the prescribed form, supported with relevant documents mentioned in the application form, shall be submitted to the Admission Office of the Campus/Constituent Unit.

13.2 Applications shall be scrutinized by the Admission Committee of the Department along with all documents including equivalence certificate for the

foreign certificates/degrees issued by the HEC, to determine the eligibility for admission.

13.3 The Admission Committee shall interview the eligible applicants and assess their suitability for the MS/MPhil Equivalent/ programme. Any further selection procedure, including test, may also be used to assess the suitability of the candidates. Admission interview evaluation shall be carried out on prescribed format (MS-1A). For intradisciplinary admission the candidate must ensure that the admission committee is satisfied that his/her knowledge of primary area (level 6) has sufficiently prepared him/her to undertake the course of studies of the MS/MPhil/Equivalent program (or, in the opinion of the admission committee, the preparation can be deemed satisfactory by taking a few additional courses after starting the program).

13.4 Names of the candidates recommended by the Admission Committee for admission to the MS/MPhil/Equivalent programme shall be forwarded by the HOD to the Admission Office through the Principal, for subsequent approval of the Rector.

13.5 Admission letters to the selected candidates shall be issued by the Head of Department on the prescribed format (MS-1B) with copy to the Director PGP, Director Admissions, Dean and Principal. The selected candidates shall be required to register on or before the date given in the offer letter, the failure to do so shall result in cancellation of admission.

14. Programme Credit Hours

Credit hours of the MS/MPhil/Equivalent Programmes shall be as follows:

	MS/MPhil/ Equivalent (by Coursework)	MS/MPhil/Equivalent (by Research Work)
Coursework (in alignment with National Qualification Framework)	30 (Minimum)	24 (Minimum)
Research Work	0	6 (Minimum)

15. Programme Duration

15.1 Minimum Duration of the MS/MPhil/Equivalent programmes shall be 1.5 years (3 semesters).

15.2 Maximum Duration of the MS/MPhil/Equivalent programmes shall be 4 years.

15.3 At/before the completion of 3rd year that student, who has yet to complete the MS/MPhil/Equivalent degree, must apply for a waiver/extension of one year. This waiver/extension will be granted by the Rector, subject to the recommendation of the FRC. The waiver/extension request shall be initiated by the student on the prescribed form (MS-2). If waiver/extension is granted, the student shall be required to pay the required fee(s) applicable to the additional semester.

15.4 Beyond the Maximum Duration, the scholar shall become Time-Barred. If a student is unable to complete the MS/MPhil/Equivalent degree with prescribed timeframe, waiver to the Time-Bar may be granted under force majeure events (i.e., delay on account of circumstance beyond the control of student). Under such circumstances, the waiver request shall be initiated by the student on the prescribed form (MS-2). The case will be forwarded by the DRC to be presented in FRC. FRC will thoroughly deliberate on the case, find out the reasons for the delay, suggest the corrective measures and recommend the case with extended duration for the approval of the Rector. If the waiver is granted, the student shall be required to pay the required fee(s) applicable to the additional semester.

15.5 The aforesaid rules are summarized in the following table:

Programme	Minimum Duration (yrs)	Maximum Duration (yrs)	Max Time Late²(yrs)	Maximum Waiver Permitted
MS/MPhil/Equivalent	1.5 ¹	4.0 ²	0.5	Case to Case Specific ³

Notes:

1. For MS/MPhil/Equivalent programmes with thesis, duration shall be counted from the date of registration/enrollment of the programme till the final submission of thesis after incorporation of the comments of thesis evaluators and for MS/MPhil programmes without thesis, the duration shall be counted from the date of registration of the programs till final examination of the last semester.
2. See "Definitions".
3. Waiver effective from the Time-Bar date

15.6 The departments conducting MS/MPhil/Equivalent programs shall have to submit results of the thesis by the end of week-10 into the next semester

after the final semester. The students completing their thesis within this time period shall be eligible for Honours and Awards and shall not be charged any fee for the said 10 weeks. However, students who are unable to complete the thesis by the end of week-10 into the next semester, and take more time to complete the thesis, shall be charged fee for semester(s) in which they have worked.

15.7 To ensure timely submission of result to Controller of Examination after thesis evaluation and conduct of viva-voce examination, the 10 weeks into the next semester provided for completion of thesis shall be divided as follows:

1	Submission of thesis by MS/MPhil/Equivalent student to department	By end of week 2
2	Evaluation and thesis defence by department	By end of week 9
3	Submission of result by department to Controller of Examination	Before end of week 10

15.8 Departments are bound to submit the result of thesis to Controller of Examination after conduct of thesis defence, viva-voce etc before the end of week 10 into next semester for all timely submitted thesis.

16. Migration In and Out of the University

16.1 MS/MPhil students migrating from the other HEC recognized Universities (with Uniform Semester Examination System) shall be required to complete the residency requirements (minimum 50% time of the regular duration).

16.2 Students may also ask for migration to another University or termination of programme at any stage. In such cases, the students shall be entitled to receive the transcript only, mentioning the courses completed. Partially completed research work shall not be mentioned in the transcript.

17. Exemption and Transfer of Credits

17.1 The FRC, on the request of the DRC, may approve Transfer of Credits (TOCs) or Exemption of Courses in respect of any MS/MPhil programme course(s) provided that:

- 17.1.1 The student has obtained a CGPA of 3.0/4.0 or 60% aggregate (where CGPA is not given) in the coursework at the time of migration into the BU.
- 17.1.2 TOCs and Exemptions will be considered on the basis of course contents, Credit Hours, basic eligibility criteria and a minimum of B grade according to the BU grading system in the courses for which TOC or Exemption are being sought.
- 17.1.3 The Exemptions/TOCs do not exceed the 50% of the total credits in the programme to which transfer is sought.
- 17.2 The final transcript of the student shall be endorsed as follows:
 - 17.2.1 TOCs: In the result column, the words "Credits Transferred" shall be endorsed against the TOC course(s).
 - 17.2.2 Exemption(s): A foot-noted list, titled "Additional Courses Completed" shall be added.
- 17.3 The student shall apply for TOC/Exemption on the prescribed format (MS-3) and pay the TOC/Exemption processing fee as per the BU policy.
- 17.4 The DRC shall constitute a three member Equivalence Committee from its own members to ascertain equivalence of the course(s) applied for TOC/Exemption with the course(s) applied against. The Equivalence Committee shall process the case and give its findings on the prescribed form (MS-4). Based on the findings of the Equivalence Committee, the DRC shall make recommendation to the FRC.

18. Pursuing MS/MPhil Courses outside the BU

The Students may take courses at other HEC recognized universities subject to recommendation of the DRC and approval of the FRC provided that the course(s) pursued is(are) present in the roadmap of the programme at the BU but is(are) not being currently offered by the BU due to any reason.

19. Course Withdrawal

- 19.1 Students may withdraw from a registered course till the end of the seventh week of the semester. No withdrawal of course shall be allowed after this time. To withdraw a registered course, the student shall have to apply to the HOD through the PGP Coordinator on a prescribed format (MS-5).
- 19.2 If the course is withdrawn within two weeks after commencement of classes, the course withdrawn shall not be recorded on the transcript. However, in case the course is withdrawn between the third and the seventh week of the

semester the letter “W” shall be recorded on the transcript against the course withdrawn.

20. Semester Freeze

20.1 Students are allowed to freeze their semester due to illness or circumstances beyond their control by giving a written application to the HOD on prescribed format (MS-6).

20.2 Students can apply for semester freeze till three weeks before commencement of the final examinations. No semester freeze shall be allowed after this time.

20.3 Students can freeze more than one semester either consecutively or staggered, while remaining within the maximum programme duration.

21. Refund/Adjustment of Fees for Course Withdrawal, Semester Freeze and Allied Reasons

21.1 Course Withdrawal and Semester Freeze

21.1.1 Full amount of tuition fee shall be refunded/adjusted to next semester if the course is withdrawn/semester frozen up to 7th day of convening of classes.

21.1.2 Half (50%) fee shall be refunded/adjusted to next semester if course is withdrawn/semester frozen from 8th to 15th day of convening of classes.

21.1.3 No fee shall be refunded/adjusted to next semester if course is withdrawn/semester frozen from 16th day of convening of classes.

21.2 Cancellation of Course(s) or Programme

21.2.1 Full amount of tuition fee shall be refunded to the students if the courses after being offered are cancelled by the University for any reason.

21.2.2 In case a programme is cancelled, the entire charges including admission fee shall be refunded to the student.

21.3 Drop Cases

A student dropped from the degree programme after grant of admission on hope certificate for the reason of not meeting the admission requirements, shall be refunded all charges except admission fee.

21.4 Maximum Time Period for Refund Claims

Refund claims shall normally be entertained up to a maximum period of one year after the date of leaving. The BU shall not entertain any claim or refund after this period.

21.5 Conflict Resolution

In case of any conflict or interpretation of the aforementioned rules on refund of fee and other charges, the matter shall be referred to the Rector through the Registrar whose decision shall be final.

22. Probations and Dropout

22.1 The student shall be placed on Probation if his/her CGPA falls below 2.5/4.0 (GPA if it is the first semester) for the first time. After each Probation, a formal warning letter is to be issued to the student by the concerned HOD and a copy of the same – duly signed/ acknowledged by the student – is to be retained in the respective HOD office for record purposes.

22.2 The student shall be placed on another Probation if his/her CGPA falls below 2.5/4.0 for the second time. Students with two consecutive Probations must NOT register for a new course/new semester without the prior approval of the concerned Principal, through respective HOD.

22.3 The student shall be dropped from the programme if his/her CGPA falls below 2.5/4.0 after two consecutive Probations.

22.4 If dropped from the programme, a transcript mentioning courses completed with the status endorsed as "MS/MPhil/Equivalent Incomplete" may be issued by the Controller of Examination to the student. Migration letter may also be issued to the student by the Controller of Examination, on request.

23. Assessment Modalities for Coursework

23.1 Assessment modalities for MS/MPhil programmes shall be as follows:

Assessment Head & Mode	Weightage
Subjective Quizzes from Course Contents, Home/Classroom Assignments and Presentations, held throughout the Semester	30%
Mid-Term Examination, a subjective examination from Course Contents held after 8 weeks into the Semester/review for research paper	30%
Final Examination, a Comprehensive subjective examination from Course Contents, held at the end of the Semester	40%

23.2 Passing marks in each subject shall be 60%. The rest of the University's standard examination rules shall apply to these programmes.

24. Supervisors

24.1 The Principal Supervisor and Co-Supervisor (if needed) shall be appointed by the DRC on their consent for each MS/MPhil/Equivalent research student. The Principal Supervisor/Co-Supervisor shall be a PhD faculty member or a professional in the relevant field holding a PhD degree. The HOD shall issue a letter of appointment to the Principal Supervisor and Co-Supervisor on the prescribed format (MS-7 and MS-8) respectively after the approval of DRC.

24.2 If the Principal Supervisor is not available temporarily, the Co-Supervisor, or the Head of Department (HOD), may act as a Principal Supervisor subject to compliance with 2.11 of these rules. The supervisory remuneration shall be divided between the Principal Supervisor and the Co-Supervisor in the ratio of 2:1.

24.3 The Principal Supervisor/Co-Supervisor shall not be changed except under extraordinary circumstances. In case of a serious problem between a student and the Principal Supervisor, the student may request the HOD to change the Principal Supervisor. The HOD shall investigate the matter and bring it before the DRC. The DRC shall take the final decision on the matter.

24.4 A supervisor shall be assigned 7 to 12 MS/MPhil/Equivalent research students based on time and availability. Maximum supervisory load, however, shall be as per HEC policy in vogue in this regard.

25. Research Proposal Defence

25.1 The student shall prepare a research proposal under guidance of the Supervisor and submit it to the HOD/PG Coordinator, within two months of having registered for the Research Work/Thesis.

25.2 The research proposal shall be submitted as per the prescribed format of the faculty. It must be specific to community needs at regional and local levels. It must be aligned with UN's sustainable development goals (SDGs).

25.3 The student shall also submit the Ethical Review Form (MS-9), duly filled in, along with the proposal for evaluation. The Ethical Review Committee shall review the proposal before conducting the research proposal defence if the student has declared that his/her research work shall involve human subjects. ERC may invite the student to attend meetings of the ERC when his/her study is being reviewed.

25.4 The DRC shall appoint two Internal Examiners to conduct the thesis proposal defense of the student. The Internal Examiner shall be a permanent/adjunct PhD faculty member of BU from the relevant research area. If a suitable Internal Examiner is not available, Examiner(s) shall be selected from outside BU by the FRC from the HERC approved list of External Examiners.

25.5 PGP Coordinator with the consent of HOD shall announce and circulate the schedule of the thesis proposal defence and make necessary arrangements. A copy of the schedule shall also be sent to the Principal, Faculty Dean and the PGP Directorate.

25.6 The student shall defend the proposal by giving a multimedia presentation before the Examiners. The Examiners shall assess the proposal on a prescribed Research Proposal Evaluation format (MS-10). If the proposal is approved, the student shall be allowed to continue research work under the Supervisor, through a formal letter from the HOD (MS-11). If rejected, the DRC may ask the student to improve the existing proposal or submit a fresh one. In such a case, the PGP Coordinator shall communicate the reasons of rejection given by the Examiners to the student under intimation to the DRC and the PGP Directorate. In case the student does not appear in the defence without prior authorization, the proposal shall be considered rejected.

25.7 The student shall be given two chances to get the research proposal approved within a maximum period of two semesters from the date of having registered in the thesis. If the proposal is rejected twice, or if the student fails to get the thesis proposal accepted within two semesters since registration of the thesis, candidacy of the student shall be decided as under:

25.7.1 MS/MPhil/Equivalent (Optional Research Work) Student.

The student may be asked by the DRC to take elective courses in lieu of the research work as per the roadmap of the given programme. In such a case, MS/MPhil/Equivalent (Research Work) shall be converted into the MS/ MPhil/Equivalent (Coursework) degree. However, if the student does not want the degree to be converted into MS/MPhil/Equivalent (Coursework), the programme shall be considered as "Terminated". The DRC shall report the case to FRC for final approval of termination. If termination of the candidacy of the student is approved, the FRC shall inform the PGP Directorate for cancellation of admission. The Controller of Examination shall issue the transcript mentioning the courses completed with the status endorsed as "MS/MPhil/Equivalent Incomplete". Migration letter may be issued to the student by the Controller of Examination, on request.

25.7.2 **MS/MPhil/Equivalent (Compulsory Research Work) Student.** The candidacy of the student shall be considered as "Terminated". The DRC shall report the case to the FRC for final approval of termination. If termination of the candidacy of the student is approved, the FRC shall inform the PGP Directorate for cancellation of admission. The Controller of Examination shall issue the transcript mentioning the courses completed with the status endorsed as "MS/MPhil/Equivalent Incomplete". Migration letter may be issued to the student by the Controller of Examination, on request.

26. Research Work Progress Report

26.1 The Principal Supervisor shall submit Quarterly Research Work Progress Report on the student to the PGP Coordinator, on the prescribed format (MS-12). The academic year w.r.t. research work in PG programs shall be divided into four quarters. The duration of these quarters and the timeline for submission of progress report for each quarter shall be as follows:

Quarter	Progress Report Submission Timeline
September - November	15 th December
December - February	15 th March
March - May	15 th June
June - August	15 th September

The first progress report of students, starting their research work in Spring semester, shall be submitted from March-May quarter. The PGP Coordinator shall maintain complete record of the student's progress and shall submit a consolidated progress report to the Principal, Faculty Dean and the PGP Directorate, through the HOD.

26.2 In case of unsatisfactory progress report, the DRC shall interview the student, find out the reasons for unsatisfactory progress, and may suggest remedial measures. If the student gets unsatisfactory report a second time, the DRC may ask the student to change the research topic. If the change of research topic does not help either and the student's performance is reported unsatisfactory a third time, then the further course of action shall be as per articles 25.7.1 or 25.7.2, as applicable.

27. Thesis Submission Requirements

27.1 The thesis shall be developed on the prescribed format (Annex - B & C). Any other type of format specific to research if intended to be used, it must be approved by the FRC. However, the contents as mentioned in prescribed format (Annex - 'B' & 'C') must be fulfilled. F

27.2 The thesis must reflect relevance, credibility, effectiveness, and legitimacy of the research. The thesis must be an original and innovative contribution to knowledge that contributes to solving socioeconomic problems. The thesis should correspond to the community needs at regional and local levels and comply with the priority national research agenda. It should reflect the basic and pure research. It must signify emerging areas of research that coincide preferably with sustainable development goals (SDGs).

27.3 Plagiarism test shall be conducted through HEC recognized plagiarism testing software (as per HEC policy in vogue) by the PGP Coordinator and report must be placed in the outset of the thesis. The overall similarity index and the similarity from a single source must conform to HEC's Plagiarism Policy in vogue. The student's own publication produced from the MS/MPhil/Equivalent Research Work shall be excluded while generating the similarity index report, if published work is properly cited by the student in his/her thesis. Furthermore, BU Plagiarism Rules are subject to HEC Plagiarism Rules. Any changes in HEC Plagiarism Rules shall be applicable to BU Plagiarism Rules.

27.4 Certificate of Thesis Completion (MS-13) by the Principal Supervisor, Author's Declaration (MS-14A) and Plagiarism Undertaking (MS-14B) shall be placed at the outset of the thesis.

27.5 Dues clearance letter from the Accounts Department of the BU shall be submitted separately.

28. Thesis Submission

28.1 The student shall submit two spiral bound hard copies of the thesis and one digital copy (CD) to the PGP Coordinator. The PGP Coordinator shall issue acknowledgement on the prescribed form (MS-15) and forward the copies to the DRC for evaluation.

28.2 After successful thesis evaluation and defence, the student shall submit three hardbound copies and a CD of the thesis to the HOD through PGP Coordinator who will forward one copy each to the PGP and Examination Directorates and the Campus library for record.

29. Thesis Evaluators

29.1 Thesis shall be evaluated by two Evaluators, internal and external. Internal Evaluator shall be drawn from the faculty whereas the External Evaluator shall be appointed from the HERC approved list of External Evaluators. If a suitable Internal Evaluator is not available, both Evaluators shall be selected from outside the BU from the HERC approved list of External Evaluators.

29.2 The DRC, in consultation with the Principal Supervisor, shall recommend two names for Internal and External Evaluators each, after having secured their consent, to the FRC for approval. The FRC shall select one person from each category. Identity of the Evaluators shall be kept confidential from the student.

29.3 The PGP Coordinator shall send a copy of the thesis to each Evaluator on a prescribed form (MS-16) along with the prescribed Thesis Evaluation Report Form (MS-17). The Evaluators shall be requested to evaluate the thesis and send their evaluation report within four (4) weeks of receipt of the thesis. Where an Evaluator is unable to meet the original or a revised deadline, the FRC may appoint another Evaluator out of the HERC approved list of External Evaluators.

29.4 All communication with the Evaluators shall be carried out by the PGP Coordinator.

30. Thesis Evaluation

30.1 The evaluation reports shall be received by the PGP Coordinator which, after hiding the name/identity of the Evaluators, shall handover the reports to the student with information to HOD, Principal and Dean.

30.2 The Evaluators can evaluate thesis and make recommendations thereon in any one of the following ways (Form MS-17 refers):

- a. *"The thesis meets all the requirements of international standards. No changes are required. The candidate may proceed for thesis defence."* This shall be construed as Thesis **Approved**.
- b. *"The thesis requires major/minor changes, as pointed out in the detailed report. These changes be incorporated into the thesis. There is no need to send the thesis to me for reassessment; I authorize BU to ascertain the compliance and carry out reassessment through its own system before the thesis defence."* This shall be construed as Thesis **Conditionally Approved (A)**.

- c. *"The thesis requires major/minor changes, as pointed out in the detailed report. These changes be incorporated and the revised thesis be sent to me, along with a compliance report, within _____ weeks for reassessment.* This shall also be construed as Thesis **Conditionally Approved (B)**.
- d. *"The thesis is unacceptable. Detailed analysis is given on a separate sheet."* This shall be construed as Thesis **Not Approved**.

30.3 The "Approved", "Not Approved" or "Conditionally Approved" evaluations will result in a number of scenarios as tabulated, and shall be addressed as elucidated in the ensuing articles:

Case #	Evaluation	
	One Examiner	Other Examiner
1	Approved	Approved
2	Approved	Conditionally Approved(A)
3	Approved	Conditionally Approved(B)
4	Conditionally Approved	Conditionally Approved
5	Conditionally Approved	Not Approved
6	Approved	Not Approved
7	Not Approved	Not Approved

30.4 Case 1: Approved+Approved

The Student shall qualify for the thesis defence & viva voce examination.

30.5 Case 2: Approved + Conditionally Approved(A)

The Student shall make the suggested changes and have them endorsed by the Principal Supervisor on behalf of the Evaluator. The thesis shall then be deemed to be "Approved", and the student will qualify for the thesis defence & viva voce examination.

30.6 Case 3: Approved+Conditionally Approved (B)

The student shall make the suggested changes and have them endorsed by the Principal Supervisor. The PGP Directorate will send the amended thesis back to the Evaluator. This process shall continue until 'Approved' or 'Conditionally Approved (A)' reports are received from the Evaluator. Subsequent actions shall be as per articles 30.4 or 30.5 depending on the re-evaluation report.

30.7 Case 4: Conditionally Approved+Conditionally Approved

- 30.7.1 Actions shall be as per articles 30.5 and/or 30.6, as the case(s) may be.
- 30.7.2 If both the Evaluators ask for changes which are mutually conflicting, the Principal Supervisor shall provide the

necessary guidance to the student. If either or both Evaluators have asked for resubmission of thesis (Case B), a separate "Compliance Report" shall be sent to the Evaluators(s) who asked for resubmission along with the revised thesis, clearly identifying the conflicting changes/requirements.

30.8 Case 5: Conditionally Approved+Not Approved

The thesis shall be sent to a third Evaluator for evaluation and subsequent actions shall depend on the report of the third evaluator:

- 30.8.1 If the third Evaluator evaluates the thesis as "Approved", it becomes an "Approved+Conditionally Approved" case, in which case articles 30.5 and/or 30.6 shall apply, as applicable.
- 30.8.2 If the third Evaluator evaluates "Conditionally Approved", it becomes a "Conditionally Approved+Conditionally Approved" case. Article 30.7 shall apply.
- 30.8.3 If the third Evaluator evaluates "Not Approved", two of the three evaluators would have evaluated the report "Not Approved". It thus becomes the "Not Approved+Not Approved" Case. Article 30.10 shall apply.

30.9 Case 6: Approved+Not Approved

The thesis shall be sent to a third Evaluator for evaluation. The report of the third Evaluator shall be considered as final. Action shall be as follows:

- 30.9.1 If the third Evaluator reports "Approved", the student shall qualify for the thesis defence and viva voce examination.
- 30.9.2 If the third Evaluator evaluates "Conditionally Approved", it becomes "Approved+Conditionally Approved" case; actions shall be per paras 30.5 and/or 30.6, as applicable.
- 30.9.3 If the third Evaluator reports "Not Approved", the situation will become tantamount to both reports evaluated "Not Approved". Article 30.10 shall apply.

30.10 Case 7: Not Approved+Not Approved

It shall be construed that the student has failed in producing an acceptable thesis. Candidature of the student shall be decided as below:

- 30.10.1 MS/MPhil/Equivalent (Optional Research Work) Student.
 - a. The FRC may ask the student to terminate research work and take elective courses in lieu of research work as per the programme requirement. In such a case, the student shall be eligible for the award of MS/MPhil/Equivalent (Coursework) degree, on successful completion of the degree requirements.

- b. If the student does not want the degree to be converted into MS/MPhil/Equivalent (Coursework), the programme shall be considered as "Terminated". The PGP Directorate shall be informed and the Controller of Examination shall issue the transcript mentioning the courses completed with the status endorsed as "MS Incomplete". Migration letter may be issued by the Examination Department, on request.
- 30.10.2 MS/MPhil/Equivalent (Compulsory Research Work) Student.
- a. The FRC may ask the student to re-register in the Programme and carry out the research work on a new topic from the scratch. However, coursework shall not be required in such a case.
 - b. If the student does not want to re-register in the programme, the programme shall be considered as "Terminated". The FRC shall inform the PGP Directorate in this regard. Controller of Examination shall issue the transcript mentioning the courses completed with the status endorsed as "MS/MPhil Incomplete". Migration letter may be issued by the Examination Department, on request.

31. Thesis Defence Examiners

31.1 There shall be constituted a panel of two Examiners. Preferably the panel of thesis Evaluators to conduct the thesis defence and viva voce examination of the student. If thesis Evaluators are not available to conduct thesis defence and viva voce, two separate Examiners, internal and external, shall be appointed for this purpose. The Internal Examiner shall be a PhD faculty member whereas the External Examiner shall be appointed from the HERC approved list of External Examiners. The DRC shall recommend two names of the Internal and External Examiners each, after having secured their consent, to the FRC for approval. The FRC shall select one person from each category. The identity of the Examiners shall be kept confidential from the student.

31.2 The PGP Coordinator shall send a copy of the thesis to each Examiner along with the prescribed Thesis Defence Evaluation Report Forms (MS-18A & MS-18B). All communication with the Thesis Defence Examiners shall be undertaken by the PGP Coordinator.

32. Thesis Defence & Viva Voce Examination

32.1 PGP Coordinator shall announce and circulate the schedule of the thesis defence with consultation of the HOD and shall ensure necessary arrangements to conduct the thesis defence. A copy of the schedule shall also be sent to the Principal, Faculty Dean, and the PGP Directorate.

32.2 The thesis defence shall be in the form of a multimedia presentation by the student, followed by a Viva Voce Examination/QA session before the panel of Examiners. The two may be held on the same day or the latter may be deferred after mutual consent.

32.3 The Principal Supervisor/Co-Supervisor shall remain present throughout the thesis defence. The presentation part of the thesis defence shall be open to all those interested, but the Viva voce Examination shall be conducted by the panel of Examiners in the presence of the Principal/Co-supervisor. The Head of the FRC/Principal or the HOD may also remain present if necessary.

32.4 In the case of a handicapped student, thesis-work may be presented through a third person with the consent of the Dean and the PGP Directorate.

32.5 The Examiners shall evaluate the thesis defence of the student on the Thesis Defence Evaluation Report Form (MS-18A) against the following assessment weightage:

- | | | |
|----|----------------------------------|-----|
| a. | Thesis write-up and its quality: | 50% |
| b. | Presentation of work: | 25% |
| c. | Viva Voce Examination: | 25% |

32.6 To be able to pass the thesis defence, the student must obtain at least 60% marks from both the Examiners on the panel.

32.7 The thesis defence evaluation reports shall be received by the HOD who shall pass them over, along with consolidated report on prescribed Form (MS-18B) to the Dean/Director for onward submission to the Examination Department under information and copy to the PGP Directorate

32.8 If one evaluation report is "Approved" and the other is "Not Approved", then a third Examiner shall be appointed. The report of the third Examiner shall be considered as final. If the third Examiner reports "Approved", the student shall qualify for the degree. If the third Examiner reports "Not Approved", the situation will become tantamount to both reports evaluated "Not Approved" which means the student has failed in producing an acceptable defence.

32.9 The student shall be given three chances to defend the thesis successfully. After a failed attempt, the panel of Examiners shall specify the time period within which the student shall be required to defend the thesis again. If

the student is not able to defend the thesis in the third attempt even, the candidature of the student shall be decided in accordance with Article 30.10.

33. Submission of Thesis Revision

33.1 Time Lines for Minor Corrections

All minor corrections recommended by the Examiners during the Thesis evaluation or Thesis Defense/Viva Voce Examination shall be incorporated and submitted to the PGP Coordinator within one month of receiving the evaluation/examination report. Principal Supervisor shall verify the desired corrections in the form of written report within this time period.

33.2 Time Lines for Major Corrections

All major corrections recommended by the Examiners during the Thesis evaluation or Thesis Defense/Viva Voce Examination shall be incorporated and submitted to the PGP Coordinator within two months of receiving the evaluation/examination report. Principal Supervisor shall verify the desired corrections in the form of written report within this time period.

33.3 Failure to incorporate the changes and submit revised thesis

If a student fails to incorporate and submit the changes within the time period mentioned in para 33.1 and 33.2, following rules will be applied:

- a. Students that are not time-bared can apply for an extension in the submission deadline on the prescribed form. Dean may approve the extension of maximum two month from the last given deadlines as mentioned in para 33.1 and 33.2.
- b. Students that have completed the maximum duration of MS/MPhil/Equivalent programme shall request for extension in accordance with Article 15.4.
- c. If a student is not able to submit the revised version of the thesis with a dully approved compliance report within a timeframe as specified in para 32.1, 32.2 & 32.3a, the student shall be required to pay the complete fee against the thesis credit hours for the ongoing semester and upcoming semesters till the revision is submitted.

34. Honorarium for Examiners

Suitable honorarium is to be paid to the thesis Evaluators and Examiners (Internal, External) for proposal and thesis defence, as decided by the University from time to time.

35. Award of the Degree

35.1 The student shall be entitled to the degree after fulfilment of all the requirements, as laid down in these Rules, and the academic roadmaps and curricula. The Examinations Department shall complete all the degree formalities.

35.2 The minimum CGPA requirement is 2.5 for the award of MS/MPhil/Equivalent degree.

36. Honors and Awards

36.1 Top performers shall be eligible for University awards, if he/she does not have any of the following ineligibilities:

- a. CGPA less than 3.5 (for medals)/3.6 (for Cum Laude Honour);
- b. Not a regular student of the same batch;
- c. Used any of the following options/relaxations:
 - (1) Semester Freeze/Withdrawal;
 - (2) Course Repetition;
 - (3) Any Mid-Term or Final Examination Retake; or
 - (4) Any course taken in a Summer Session.
- d. 'F' or 'I' grade in any course;
- e. Dropped from the Programme;
- f. Disciplinary case; or
- g. Credit transfer case.

36.2 Gold and Silver medals will be awarded to the students who achieve First and Second highest CGPA respectively, within the whole batch. Ties in CGPA, if any, shall be decided on percentages (P1 & P2, where $P1 > P2$), as tabulated:

Tie Situations	Percentages Distribution	Award
Two or more Top CGPAs OR One Top CGPA & Two or more 2nd Best CGPAs	One P1 One P2	P1: Gold P2: Silver
	One P1 Two or more P2s	P1: Gold All P2s: Silver
	Two or more P1s P2	All P1s: Gold No Silver

36.3 Cum Laude Honours shall be awarded to the students scoring the following CGPAs:

<u>Honour</u>	<u>CGPA</u>
Summa Cum Laude	≥ 3.90
Magna Cum Laude	≥ 3.80 to < 3.90
Cum Laude	≥ 3.60 to < 3.80

37. Forms for MS/MPhil/Equivalent Programmes

37.1 All MS/MPhil related activities shall be executed and concluded using MS Forms, templates of which are added next. These forms are to be reformatted and reproduced on A4 sized paper. Under no circumstances, any information is to be added to or deleted from the forms. Should such a need arise, a request for amendment is to be processed. The forms and their purpose/title are listed:

Form #	Purpose/Title
MS-1A	Admission Evaluation Form
MS-1B	Response to Admission Request
MS-2	Request for Extension in Thesis Submission Time
MS-3	Application for Transfer of Credits/Exemption
MS-4	Comparison Statement/Equivalence Chart for Transfer of Credits
MS-5	Request for Withdrawal of Courses
MS-6	Request for Semester Freeze
MS-7	Appointment of Principal Supervisor
MS-8	Appointment of Co-Supervisor
MS-9	Ethical Review Form
MS-10	Research Proposal Evaluation
MS-11	Approval of Research Proposal
MS-12	Quarterly Progress Report of MS/MPhil Student
MS-13	Thesis Completion Certificate
MS-14A	Author's Declaration
MS-14B	Plagiarism Undertaking
MS-15	Acknowledgement Receipt of Thesis
MS-16	Request for Thesis Evaluation for MS/MPhil Programme
MS-17	Thesis Evaluation Report

MS-18A	Thesis Defense & Viva Voce Evaluation
MS-18B	Thesis Defense & Viva Voce Evaluation (<i>Consolidated Result</i>)

Annexures:

- A. Quality Monitoring of Attributes of MS/MPhil/Equivalent Scholar
- B. Format & Guidelines of Research Proposal & Thesis
- C. Thesis Writing Manual
- D. Grievance Management System



MS-1A

PROVISIONAL ADMISSION FORM
(MS/MPhil/Equivalent Programs)

SEMESTER: _____ Date: _____
S.NO. _____ APPLICATION NO: _____ PROGRAMME APPLIED FOR: _____
DEPARTMENT _____ CAMPUS _____
APPLICANT'S NAME: _____
PREVIOUS BU REGISTRATION NO. (IF ANY): _____

PRELIMINARY VERIFICATION BY DEPARTMENTAL ADMISSION COMMITTEE

Eligibility Criteria Check:

CGPA/% age in Master's/Bachelor's/Equivalent Degree _____

The following documents of the candidate were checked and verified.

- | | | |
|--|------------------------------|-----------------------------|
| a. CNIC | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. SSC / O level (IBCC equivalence) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. HSSC / A Level (IBCC equivalence) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Masters/Bachelors/ Equivalent (HEC Verified) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Affidavit (If result of Masters/Bachelor's or Equivalent final semester is awaited) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| f. GRE/HAT General/Equivalent Test _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Signature _____ Faculty Name _____

Selected Rejected

If rejected, please mention reasons: _____

Deficiency Courses (Intradisciplinary Admissions) _____ (Attach Extra Sheets)

The candidate has been interviewed for the admission in _____ Program. Fee slip to above mentioned candidate may please be issued. Fee deposit date cannot be extended/amended by the account section. Last date for fee submission is _____. Extension of fee submission date is not allowed.

Signature _____
Faculty Name _____

Signature _____
Faculty Name _____

Signature _____
Head of Department

FINAL VERIFICATION BY ADMISSON OFFICE OF CAMPUS

Stamp	Signature _____
	Name _____ (Admission Office Staff)

Manager (Accounts) _____

Issued By _____

Note:

Only Admission Department of CU is authorized to extend/amend the fee deposit due date.
Final Score = GRE/HAT General/Equivalent Test (50%) + Bachelor's degree or Equivalent CGPA (50%)



MS-1B

Response to Admission Request

(Candidate's Name and Address)

Dear Applicant

With reference to your application for admission in the _____ programme being offered by the Department of at _____ Islamabad/Karachi/Lahore Campus, the Admission Committee examined your case on merit and has reached the following decision:

- You are recommended for admission. Please complete the required admission formalities latest by _____, after which the admission will be offered to the next Candidate in the merit list.

OR

- You are offered provisional admission, subject to the fulfillment of the following requirements:

OR

- It is regrettably informed that you do not qualify for admission with respect to the standards set for the admission in the given programme at this university at present. Please re-apply in future when you meet admission requirements.

Date: _____

(Head of Department)

Copy to:

- Director Campus ISB/KCHI/LHR
- Director PGP
- Director Admissions
- Dean of respective Faculty



MS-2

Request for Waiver of Time-Bar

HoD _____
BU _____ (Campus) Date: _____

Respected Sir/Madam,

The relevant details are as under:

Name:	Enrolment No:
Programme (Prog):	Prog Start Date:
Prog Shortfall:	Prog End Date:
(1)	Waiver Needed till Date:
(CH)	Time Late:
(2)	
(CH)	

Due to the following reason(s), I am/will be unable to submit my thesis in time:

I shall be highly obliged if extension of _____ to submit the thesis, is granted to me.

(Student's Signature)

(For official use only)

Recommendation of the Principal Supervisor: Recommended Not Recommended

(Signature of Principal Supervisor)

Recommendation of the DRC: Recommended Not Recommended

(Signature of HOD)

Distribution:

1. Director PGP
2. Head of Constituent Unit
3. Student's File



MS-3

Application for Transfer of Credits/Exemption

Department: _____ Campus: _____

Student's Name: _____

Programme Applied for: _____ Disciplines: _____

S. No	TOC/Exemption of courses at BU	Courses applied for TOC/Exemption	Name of University	Grade/Marks Obtained

I have read the rules for TOC/Exemption carefully as given in MS/MPhil Rules, and have attached all the required documents given in the checklist given below.

Receipt of fee of Rs _____ Paid on _____ vide Challan No _____ is attached.

Signature of Student: _____

Date: _____

Check List

- a) Attested copy of Transcript.
- b) No Objection Certificate (NOC) or Migration Certificate from the parent University.
- c) Receipt of Processing Fee.
- d) Copies of outlines of the courses applied for TOC/Exemption.
- e) Grading policy of the previous university/institute.



MS-4

Part – I
COMPARISON STATEMENT/EQUIVALENCE CHART FOR
TRANSFER OF CREDITS

Name of Student:
Programme:

Reg No.

COURSES ATTENDED AT			
Course Code	Subject	Credit Hours	Grade/ %age

EQUIVALENT COURSES AT BAHRIA UNIVERSITY			
Course Code	Subjects	Credit Hours	Grade/ %age

- a. Total _____ (_____) credit hours are recommended for transfer.
- b. The student, during his/her studies at the previous HEI earned a CGPA of _____ which is equivalent to a CGPA of _____ at the BU, according to the CGPA calculation table attached.

Member: _____ Member: _____
Member: _____

(Equivalence Committee)



Part – II CGPA CALCULATION TABLE

Name of Student: _____

Reg No. _____

Programme: _____

COURSE Code	SUBJECT	GRADE AT PREVIOUS UNIVERSITY	GRADE AS PER BU GRADING SYSTEM	GRADE POINT	CREDIT HOURS	PRODUCT

CGPA (as per BU Grading System) = _____

Member: _____

Member: _____

Member: _____

(Equivalence Committee)



MS-5

BAHRIA UNIVERSITY _____ CAMPUS

Registration # _____

Enroll # _____

Class/Section: _____

The Head of Department
Bahria University _____ Campus

REQUEST FOR WITHDRAWAL OF COURSE(S)

Dear Sir,

I, _____ S/D/W/o _____ student of class/section _____ would like to drop the following course(s) during Spring / Fall 20____, as semester:

S. #	Course Code	Course Title	Course Instructor Name	Course Instructor's Sign (For info)
i				
ii				
iii				

Above-mentioned course(s) is/are pre-requisite(s) of following course(s):

S. #	Course Code	Course Title	Course belongs to semester	Remarks
i				
ii				
iii				

The reason for dropping this course is



Declaration:

1. I understand that the management reserves the right to offer this course(s) I am going to withdraw as and when suits to the university depending upon the availability of faculty and other required facilities.
2. I understand that in order to take the course(s) I am going to withdraw, I might have to enroll for an extra semester to take up this course(s) for which management will not be responsible, affidavit.
3. I understand that I have to complete my all degree requirements within the given maximum allowed period for the programme I am enrolled in and for the course(s) I am going to withdraw no extra time will be allowed to me.

Tel # (Res) _____ Mob # _____ Email: _____

Date: _____ Student's Sign _____

HOD's Office use only

The name of the above student has been entered in the withdrawal candidates list.

- Approved with full fee adjustment** **Approved with half fee adjustment**
- Approved without fee adjustment**

Date: _____ Student Advisor PG Coordinator Head of the Department

STUDENT'S RECEIPT

REQUEST FOR COURSE(S) WITHDRAWAL (MS/MPHIL/PHD)

Note: (Student should preserve this slip till such time he/she receive his/her Final Transcript)

I, _____ S/D/W/o _____ Reg # _____
student of class/section _____ would like to drop the following course(s)
during Spring / Fall 20____, as semester:

Course Title: 1. _____ 2. _____ 3. _____

- Approved with full fee adjustment** **Approved with half fee adjustment**
- Approved without fee adjustment**

Date: _____ Student Advisor PG Coordinator Head of the Department



MS-6

BAHRIA UNIVERSITY _____ CAMPUS

Registration # _____

Enrollment # _____

Class/Section: _____

The Head of Department
Bahria University _____ Campus

REQUEST FOR SEMESTER FREEZE (MS/MPHIL/PHD)

Dear Sir,

I, _____ S/D/W/o _____ student of class/section _____ would like to drop the following course(s) during Spring / Fall 20____, as semester:

Tel # (Res) _____ Mob # _____ Email: _____

UNDERTAKING:

1. I have qualified the previous semester with CGPA _____ (copy of transcript/website result is attached).
2. I have deposited tuition fee of the semester I am going to freeze. (copy of paid fee slip is attached).
3. I understand that the management reserves the right to offer the semester I am going to freeze as and when suits to the university depending upon the availability of faculty and other required facilities.
4. I understand that I have to complete my all degree requirements within the given maximum allowed period for the programme I am enrolled in and for the semester I am going to freeze no extra time will be allowed to me.
5. I understand that full fee and half fee will be adjusted to the next semester if the semester is frozen within first and second week respectively. For the semester frozen afterward (till third week from the final examination). No fee will adjusted to the next semester.
6. I understand that I have to resume the studies in the next semester otherwise my name would be struck off from the university roll.

Date: _____

Student's Sign _____



HOD's Office use only

The name of the above student has been entered in the semester freeze list.

Frozen before commencement of semester (no fee required)

Approved with full fee adjustment

Approved with half fee adjustment

Approved without fee adjustment

Date: _____ Student Advisor PG Coordinator Head of the Department

STUDENT'S RECEIPT

REQUEST FOR SEMESTER FREEZE (MS/MPHIL/PHD)

Note: (Student should preserve this slip till joining the next semester and till such time he/she receive his/her Final Transcript)

I, _____ S/D/W/o _____ student of _____ class/section _____ would like to freeze Spring/Fall 20____.

The reason for dropping this semester is _____

Frozen before commencement of semester (no fee required)

Approved with full fee adjustment

Approved with half fee adjustment

Approved without fee adjustment

Date: _____ Student Advisor PG Coordinator Head of the Department



MS-7

Appointment of Principal Supervisor

Name, Designation _____

Department & Campus _____

Dear Sir/Madam,

The Departmental Research Committee (DRC) of the Department of _____ BU is pleased to appoint you as the Principal Supervisor for the following MS/MPhil student:

Student's Name: _____

Registration No: _____

Programme: _____

Entry Session/Semester: _____

During the period of research work, you are requested to send us the quarterly Progress Report on the specified form, available with the department. Your presence at the time of Proposal/Thesis Defense is mandatory. To acknowledge your contribution, you will be paid remuneration as per Bus policy for supervision of Research Work. Kindly send us your acceptance in writing, or through email (signed scanned copy), so that formal intimation may be send to Postgraduate Programme Directorate.

We hope our student will greatly benefit from your valuable research experience towards completing his/ her research work in time.

Date: _____

(Head of Department)

Distribution:

- | | |
|-------------------|--|
| 1. Registrar | 2. Dean |
| 3. Director PGP | 4. Student's File (with the PGP Coordinator) |
| 5. Student's Copy | |



MS-8

Appointment of Co-Supervisor

Name, Designation _____

Department & Campus _____

Dear Sir/Madam,

The Departmental Research Committee (DRC) of the Department of _____ Bahria University is pleased to appoint you as the Co-Supervisor for our following MS/MPhil student:

Student's Name: _____

Registration No: _____

Programme: _____

Entry Session/Semester: _____

During the period of research work, you are requested to guide the student in consultation with the Principal Supervisor. Your presence at the time of Proposal/Thesis Defense is mandatory. To acknowledge your contribution, you will be paid remuneration as per BUs policy for supervision of research work. Kindly send us your acceptance in writing, or through email (signed scanned copy), so that formal intimation may be sent to Post Graduate Programs Directorate.

We hope our student will greatly benefit from your valuable research experience towards completing his/her research work in time.

Date: _____

(Head of Department)

Distribution:

- | | |
|-------------------|--|
| 1. Registrar | 2. Head of Constituent Unit |
| 3. Dean | 4. Director Examinations |
| 5. Director PGP | 6. Student's File (with the PGP Coordinator) |
| 7. Student's Copy | |



MS-9

Ethical Review Form

Part-I

This Form is designed to ensure that the departmental research operates an ethical review process that falls within the University guidelines. Any student undertaking research on live human subjects needs to fill this Form. If all questions in this Form are answered 'No', ethical approval shall automatically be granted. In such case Part-II of this Form shall not be filled by the student. If any of the questions is answered 'Yes', the student shall be required to fill Part-II of this Form. This part of the Form shall be reviewed by the Ethical Review Committee (ERC). Students shall be informed of the decision of the ERC as soon as possible. If needed, the student may be asked to submit further information and appear before the ERC for discussion meeting.

Student's Name:	
Reg. No:	
Faculty/Department	
Programme:	
Title of the Thesis:	
Principal Supervisor:	

Name of Supervisor:	
Faculty/Department	
Designation:	

Name of Co-Supervisor:	
Faculty/Department	
Designation:	

Aim/purpose of study, source(s), Method(s) of Data Collection, benefits of study, duration of the study (<i>not more than one page, use extra sheet if required</i>).



Please answer all of the questions below by ticking (✓) 'Yes' or 'No' in the box provided

		Yes	No
1.	Does the study involve participants who are particularly vulnerable or unable to give informed consent? (e.g. people under the age of 18, people with disabilities etc.)		
2.	Will it be necessary for the participants to take part in the study without their knowledge and consent?		
3.	Does the study involve audio or visual recording of people in public places?		
4.	Will the study involve the discussion of sensitive topics? (e.g. sexual activity, drug use, illegal activities, death, whistle-blowing etc.)		
5.	Does the research involve the use of drugs, radiation agents experimental surgical / harmful procedures, blood or tissues samples		
6.	Is physical pain or psychological stress being part of this research work is likely to cause harm or negative consequences to the participants?		
7.	Will the study involve prolonged or repetitive testing on the participants?		
8.	Will financial inducements be involved in the study and (other than expenses) be offered to participants?		
9.	Will the study involve recruitment of patients or staff?		

If you have answered 'yes' to any of these questions, please fill in Part-II as well. Otherwise, simply submit Part-I of the form.

Student

Signature: _____

Date: _____

**Verified by
Principal Supervisor**

Signature: _____

Date: _____



Part-II

A. In consultation with the supervisor, the student is required to give following information:

Student's Name:	
Reg. No:	
Faculty/Department	
Programme:	
Detail reason of answering 'yes' to one or more of the questions in Part-I of the Form, and the plan to address the ethical/financial issues. <i>(attach additional sheet if required)</i> <i>*The ERC for Faculty of Health Sciences may ask further information if required.</i>	

Supervisor's Comments

--

Principal Supervisor Signature: _____

Date: _____



B. Student is also required to do the following:

1. Prepare an information letter for their participants. The letter needs to introduce the student and provide a simple explanation of the research. It needs to make clear what the participants are asked to do, how long the research work will take. The letter shall also include whether it will be/not be anonymous and/or confidential and who will have access to the data.
2. Prepare a Consent Form containing the phrases “I agree to participate in the research work _____ and I understand my information will be/will not be treated as confidential, and/or anonymous.”

Student

Name: _____

Signature: _____

Date: _____



MS-10

Research Proposal Evaluation

Student's Name: _____ Reg. No. _____

Programme: _____ Discipline: _____

Faculty/Department: _____

Proposed title of Research: _____

Assessment Report

(Range of Marks: 3 = Excellent; 2= Good, 1= Just Acceptable; 0= Unsatisfactory)

Evaluation Criteria	Marks (0-3)
(1) Research Topic:	
Clarity	
Depth	
Justification w.r.t. degree programme and background study	
(2) Quality of the written Proposal:	
All essential elements (significance, literature review, problem definition, etc.)	
Academic writing quality	
(3) Comprehension of Subject matter:	
Knowledge of background literature	
Ability to form a hypothesis and objectives	
(4) Knowledge of Method:	
Methodology of work presented with intelligibility	
Awareness of modern techniques, hardware/software tools	
(5) Presentation of the Proposal:	
Demonstration of professionalism	
Level of confidence	
Answers to questions	
Total Marks (Out of 36)	

(Minimum Passing score 60% of 36=21.6 Marks)

Based on my above assessment: *(Please initial any one appropriate box)*

Research proposal is recommended without any change.

Research proposal is recommended with minor changes verified by Supervisor

Research proposal is recommended with Major changes verified by Supervisor/
Examiner

I am not convinced and do not recommend the research proposal.

Expert's Name: _____ Signature: _____

Date: _____



MS-11

Approval of Research Proposal

Mr/Miss/Ms/Mrs/ _____

Registration No. _____ Session: _____

Department: _____

Dear MS/MPhil Student,

I am pleased to inform you that your research proposal on _____ has been approved. You may, therefore, continue your research on this theme and produce a quality thesis, as per the HEC requirements.

I take this opportunity to remind you that you must complete your thesis, and defend it successfully, by _____; this is the date which marks the end of the Extended Duration of your programme. However, to remain eligible for honours and awards, you must complete the thesis, and successfully defend it, by the end of week-10 of the _____ semester.

I wish you every success.

Dated: _____

(HOD)

Distribution:

- Registrar
- Dean
- Director Examination
- Director PGP
- Head of Constituent Unit
- Student's File (with the HOD/PGP Coordinator)
- Student



MS-12

Quarterly Progress Report of MS/MPhil Student

(To be filled by the student, verified by the Principal Supervisor and sent to the PGP Directorate through the PGP Coordinator/HOD)

Student's Name: _____ Registration No. _____

Entry Session: _____ Name of Supervisor: _____

Faculty/Department: _____ Campus: _____

Title of Thesis: _____

Report for Research Period: _____ From: to: _____

Research work carried out by the student during the reporting period: *(a. Please include the progress of Research Paper(s) publication, if any. b. Use extra sheet if necessary)*

Student Signature: _____ Date: _____

Comments/Assessment by Supervisor:

As per my assessment, the progress during the period is: *(Please initial the appropriate box)*

a. **Excellent** b. **Satisfactory** c. **Unsatisfactory**

Principal Supervisor's Signature: _____

Affiliation: _____ **Date:** _____



Bahria University
Discovering Knowledge

MS-13

Thesis Completion Certificate

Student's Name: _____ Registration No. _____

Programme of Study: _____

Thesis Title: _____

It is to certify that the above student's thesis has been completed to my satisfaction and, to my belief, its standard is appropriate for submission for Evaluation. I have also conducted plagiarism test of this thesis using HEC prescribed software and found similarity index at _____ and from single source is _____ that is within the permissible limit set by the HEC for the MS/MPhil/Equivalent degree thesis. I have also found the thesis in a format recognized by the BU for the MS/MPhil/Equivalent thesis.

Principal Supervisor's Name, Signature with Date: _____



MS-14A

Author's Declaration

I, _____ hereby state that my PhD thesis titled
“ _____
_____ ”

is my own work and has not been submitted previously by me for taking any degree from this university

_____ (Name of University) _____

or anywhere else in the country/world.

At any time if my statement is found to be incorrect even after my Graduate the university has the right to withdraw/cancel my PhD degree.

Name & Signature of student: _____

Date: _____



MS-14B

Plagiarism Undertaking

I, solemnly declare that research work presented in the thesis titled

“ _____
_____ ”

is solely my research work with no significant contribution from any other person. Small contribution / help wherever taken has been duly acknowledged and that complete thesis has been written by me.

I understand the zero tolerance policy of the HEC and Bahria University towards plagiarism. Therefore I as an Author of the above titled thesis declare that no portion of my thesis has been plagiarized and any material used as reference is properly referred / cited.

I undertake that if I am found guilty of any formal plagiarism in the above titled thesis even after award of PhD degree, the university reserves the right to withdraw / revoke my PhD degree and that HEC and the University has the right to publish my name on the HEC / University website on which names of students are placed who submitted plagiarized thesis.

Student / Author's Sign: _____

Name of the Student: _____



MS-15

Acknowledgement Receipt of Thesis

This is to acknowledge that Mr/Ms _____ Reg. No _____ has submitted four (4) hard copies and one softcopy of the thesis to this department. The other pertinent details are as follows:

Title of Thesis	
Degree	
Programme	
Principal Supervisor	
Department	
Faculty	
Campus	
Date of Admission with Batch	
Due Date of Submission:	
*Coursework Completed? (Yes/No) (if No, how many courses are left?)	

*where applicable

Date: _____

(PG Coordinator)

Distribution

1. Dean
2. Director PGP
3. HOD
4. Student's copy



MS-16

Dear Sir/Madam,

Request for Thesis Evaluation for MS/MPhil Programme

1. After getting your kind consent, I am pleased to forward you the thesis of Mr/Ms _____ Reg No. _____ for your assessment/evaluation. The student is registered in MS/MPhil programme in the Department of _____ at the Islamabad/Karachi/Lahore Campus. Other pertinent details are as follows:

a. Title of Thesis: _____

b. Name of Programme: _____

2. You are requested to provide your valuable assessment on the form attached herewith. We shall be extremely grateful if your assessment report can reach us in three weeks. For quick processing of the matter, you may email, to me only, a scanned copy of your duly signed assessment report. However, you are requested to follow it up with the actual report through courier or registered mail.

3. The University is thankful to you for sparing your precious time for the required assessment.

Date: _____

Head of Department

Encl:

1. One Hard Copy of the Thesis
2. One Digital Copy (CD)
3. The Assessment Form



MS-17

MS/MPhil Thesis Evaluation Report

(To be completed by the Department)

Candidate's Name:		
Enrollment No:	Registration No:	
Faculty/Department:		
Title of Thesis:		
Date of Submission:	Due Date of Report:	

The Examiner

(to be completed by the Examiner)

Name of Examiner:	
Faculty/Department:	
Institution/University:	

Part 1 - Detailed Evaluation Report

General Rating Parameters:

Sr #	Rating	Points Range	Interpretation
1	Excellent	9-10	<i>Very satisfied. No changes required.</i>
2	Good	7-8	<i>Well Satisfied. A very slight work may be carried out.</i>
3	Average/Acceptable	5-6	<i>Acceptable. Minor observation. Improvement is required.</i>
4	Below Average	3-4	<i>Major observation. Substantial extra work must be carried out.</i>
5	Poor	0-2	<i>Unacceptable for award of degree.</i>

Numerical Assessment: *(Please award the points in "points awarded" column based on the "points range" and the given" guidelines")*

Sr. #	Category	Points Range	Guidelines	Points Awarded
a.	Introduction/ Problem Definition	9-10	<i>Problem and gaps in scientific knowledge have clearly been defined with strong justification for the current research. The Candidate has clear understanding of the research undertaken, and knows what has been done and why.</i>	
		7-8	<i>Problem is well defined and introductory chapter is quite adequate in contents. The Candidate has good background knowledge of the research undertaken.</i>	
		5-6	<i>Research problem is satisfactorily defined. The introductory chapter has minor deficiencies and minor improvements required.</i>	
		3-4	<i>Research problem is not clearly defined, almost vague. The Candidate lacks in conceptualization of the research problem. Major improvements required.</i>	



		0-2	<i>Research problem is completely vague and confusing. The introductory chapter seriously lacks in contents. Needs rewriting for substantial improvement.</i>	
b.	Literature Survey/ Review	9-10	<i>Literature survey/review has been done exceptionally well, in a chronological and effective manner. All the previous work has been properly referenced. It justifies the scope of work undertaken in the thesis.</i>	
		7-8	<i>Literature survey/review has been done well. Most of the relevant previous literature have been critically analyzed.</i>	
		5-6	<i>Literature survey/review has been satisfactorily done, with a room for improvement through minor changes.</i>	
		3-4	<i>Literature survey/review has not been carried out extensively. Previous work has not been properly referenced. Requires major improvement.</i>	
		0-2	<i>Literature survey/review has been done poorly, with no proper references provided. It is hard to find out the research problem currently undertaken.</i>	
c.	Methodology	9-10	<i>Methodology very well demonstrated. All the software/ hardware tools used very well presented. Research design, measures, data collection techniques and standard analytical tools appropriately employed. Relevant professional standards well utilized.</i>	
		7-8	<i>Proficient knowledge of methodology demonstrated and justification for selection of method given.</i>	
		5-6	<i>The methodology demonstrated is understandable, but needs minor improvement.</i>	
		3-4	<i>The methodology demonstrated is hardly understood; major changes required.</i>	
		0-2	<i>The methodology is not appropriate for study and understanding is not demonstrated.</i>	
d.	Results/ Analysis	9-10	<i>Results interpreted in the light of proposed research question and existing literature. Includes alternative explanations and instructional tables and graphs. The interpretations based on analysis are quite convincing.</i>	
		7-8	<i>Results clearly summarized, discussion of results focused and tied to research question. Subsequent analysis based on results is more than adequate.</i>	
		5-6	<i>Results adequately summarized, discussion of results reasonably focused and tied to research question. Subsequent analysis is about right. Minor changes considered in order.</i>	
		3-4	<i>Results produced have either little or no connection vis-à-vis the actual research problem undertaken. Subsequent analysis has little value.</i>	



		0-2	<i>Results are vague. Presentation lacks focus, tables are unorganized, and results produce no insight into proposed question.</i>	
e.	Conclusion /Implications	9-10	<i>Conclusion, theoretical & practical implications, and recommendations are tremendously well documented.</i>	
		7-8	<i>Conclusion, research implications/recommendations are good written with clarity of research undertaken.</i>	
		5-6	<i>Conclusion, implications and recommendations are written satisfactory. Little improvement is required.</i>	
		3-4	<i>Conclusion, implications and recommendations have not been well elaborated. Major improvement is required.</i>	
		0-2	<i>Conclusion, implications and recommendations seriously lacks academic and scientific knowledge. Needs rewriting.</i>	
f.	References	9-10	<i>References are properly mentioned and are in right number. Latest references have been provided</i>	
		7-8	<i>References are properly mentioned. The number of references is neither too low nor too high.</i>	
		5-6	<i>References are adequately mentioned. Their number is either a little too high or too low.</i>	
		3-4	<i>References are provided but several of them are incomplete. Most of the references are related to internet websites.</i>	
		0-2	<i>Most of the references are too old and improperly provided. Vital information in several references is missing.</i>	
g.	Overall Quality of Thesis	9-10	<i>The thesis presents a master piece work. Ideas expressed with exceptional clarity, logic and conciseness. The material has been provided in an organized manner. The thesis is free of grammatical and structural errors.</i>	a+b+c+d+e+f 6 =
		7-8	<i>The thesis is good and nicely presented.</i>	
		5-6	<i>The thesis is generally of a satisfactory standard. There are minor grammatical or structural errors.</i>	
		3-4	<i>The overall quality of the thesis is less than adequate. It contains numerous grammatical and/or structural errors.</i>	
		0-2	<i>The thesis is full of errors. The sentences are vague and ambiguous. Not worth reading.</i>	



Suggestions/Comments: *(Please provide your **Chapter-wise** comments/feedback on thesis. Please you may use extra sheet, if required)*

Chapter #	Suggestions/Comments

Signature of Examiner: _____

Date: _____



Part 2 - Abridged Evaluation Report

Having examined this thesis and provided detailed assessment in Part-1, my recommendation to Bahria University is as follows (*please initial/sign only one option on the basis of overall quality of thesis marked in Part 1 (g)*):

Sr #	Rating	Grading Points	Options	Signature
1	Excellent	9-10	The thesis meets all the requirements. No changes required and degree be awarded.	
2	Good	7-8	The thesis requires slight amendments. The degree be awarded subject to compliance of amendments by the supervisor.	
3	Average/ Acceptable	5-6	The thesis requires minor changes as pointed out in the detailed assessment report which needs to be incorporated. There is no need to send the thesis to me for reassessment; I authorize Bahria University to ascertain the compliance and carry out reassessment through its own system. Degree be awarded if the Supervisor/University is satisfied with the compliance.	
4	Below Average	3-4	The thesis requires major changes as pointed out in the detailed report. These changes be incorporated and the revised thesis be sent to me, along with a compliance report, within ___ weeks for reassessment. Degree be awarded if recommended in my reassessment report.	
5	Poor	0-2	The thesis is unacceptable. Degree not to be awarded.	

Examiner's Signature: _____ Date: _____



MS-18A

Thesis Defense & Viva Voce Evaluation

(To be completed by the HOD)

Candidate's Name	Reg No:	
Faculty/Department	Campus:	
Title of Thesis		
Date of Defence		

(To be completed by the Viva voce Examiner)

Name of Examiner	
Faculty/Dept	
Affiliation	

Evaluation

Parameter	Weightage	Marks Awarded
Thesis Write-up and its quality	50	
Presentation	25	
Viva voce Examination	25	
Total*	100	

*Passing Percentage: 60

Comments, if any: _____

Signature of Examiner: _____

Date: _____



MS-18B

Thesis Defence & Viva Voce Evaluation

Consolidated Result

Candidate's Name:	Reg No:	
Faculty/Department:	Campus:	
Title of Thesis:		
Date of Defence:		

Detail of Examiners

	Name	Department/Affiliation
Internal Examiner		
External Examiner		

Evaluation

	Marks Allocated	Marks Awarded
Internal Examiner		
External Examiner		
Average Marks:		
Grade:		

PG Coordinator

Head of Department

Date:

Date:



Annexure-A

QUALITY MONITORING OF ATTRIBUTES OF MS/MPhil/EQUIVALENT SCHOLAR

Name: _____ Enrollment No.: _____

Semester: _____ Department: _____

School: _____ Campus: _____

Sr #	Quality Measure	Remarks (Concerned PGP Coordinator)	Remarks (Concerned Dean/Principal)	Remarks (PGP Dte)
1	Admission Test			
2	Coursework			
3	Relevant Supervisor Assignment (if any)			
4	Proposal Defence (if any)			
5	Research Thesis Submission (if any)			
6	Final Thesis Defence (FTD)			
7	Time Bar Extension (if any)			
8	Final Transcript			

*Documentary proof should be attached where necessary. PGP Coordinator will maintain a dossier and get it endorsed by concerned Principal/Dean and PGP Dte every semester.



Annexure-B

FORMAT AND GUIDELINES OF RESEARCH PROPOSAL AND RESEARCH THESIS

Format of Research Proposal

SECTION 1: INTRODUCTION

This section should provide descriptions of the innovative research title i.e. what this study is all about?, background, research gap/rationale (theoretical, contextual, methodological gap/analysis), problem statement, research questions, objectives, significance/contribution of the study.

SECTION 2: LITERATURE REVIEW/ THEORETICAL FRAMEWORK

This section should provide critical discussion of literature in the context of identified research gap, research questions and objectives (where applicable). This section may cover all variables' conceptual, theoretical, logical relationship with all independent, mediating and moderating variables used for development of research hypothesis/framework. There must be a logical flow in literature discussion including characteristic, attributes, dimension and conceptional/operational definitions.

SECTION 3: RESEARCH METHODOLOGY

This section should explain proposed research design and methodology for undertaken research, and provide justification of adopted research philosophy, methodological choice & type, time horizon, instrument development, experiment design, population, sampling strategy, unit of analysis, data collection method, analysis techniques and research ethics.

REFERENCES *[For references, formatting and other documentation requirement, follow BU Thesis]*

ANNEXURES *[Timeline, Questionnaire, Additional Data etc. can be inserted here]*

NOTE:

- 1. Additional information into relevant sections can be added based on research requirements of respective Faculty. No further section should be added.*
- 2. This format will help the scholars to develop innovative research proposal with clear directions and smooth transformation into a Thesis.*
- 3. Guidelines for writing Research Proposal are also provided in annexure which should be followed in true letter and spirit. The same may be further augmented as per requirements of respective Faculty, duly endorsed by the relevant FRC/Dean.*



Format of Research Thesis

ABSTRACT

The abstract must cover all aspects of the study in a logically flow including research problem, research gap, objectives, methodology, key finding and significance of the study. Keywords of the study should also be given at the end of abstract.

CHAPTER 1: INTRODUCTION

This chapter should provide descriptions of the innovative research title i-e what this study is all about?, background, research gap/rationale (theoretical, contextual, methodological gap/analysis), problem statement, research questions, objectives, significance/contribution of the study, which should have synchronization with the findings of the study..

CHAPTER 2: LITERATURE REVIEW/ THEORETICAL FRAMEWORK

This chapter should provide critical discussion of literature in the context of identified research gap, research questions and objectives (where applicable). This chapter may cover all variables' conceptual, theoretical, logical relationship with all independent, mediating and moderating variables used to test research hypotheses. There must be a logical flow in literature discussion including characteristic, attributes, dimension and operational definitions. The recent theoretical/empirical studies quoted in literature should relevance to the findings of the scholar's research thesis.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter should explain proposed research design and methodology for undertaken research, and provide justification of adopted research philosophy, methodological choice & type, time horizon, instrument development, experiment design, population, sampling strategy, unit of analysis, data collection methods, analysis techniques and research ethics. The methodological contribution scholar's research should be highlighted (if any).

CHAPTER 4: DATA ANALYSIS/RESULTS/FINDINGS

This chapter should cover analysis/explanation/evaluation/discussion/validation of all the collected data which may include, reliability/validity, descriptive/factor analysis and experimental results, hypotheses/model fitness results, etc.

CHAPTER 5: DISCUSSION AND CONCLUSION

This chapter should cover scholarly discussion on key findings and implications (Theoretical, Practical, Policy etc.) based on research questions/hypotheses of the study (where applicable), in addition to limitation of the study, future research directions and conclusion.



REFERENCES

[For references, formatting and other documentation requirement, follow BU Thesis Writing Manual]

ANNEXURES

[Code, Questionnaire, Additional Data etc can be inserted here]

NOTE:

- 1. Additional information into relevant chapters can be added based on research requirements of respective Faculty. No further chapter should be added.*
- 2. Guidelines for writing Research Thesis are also provided in annexure which should be followed in true letter and spirit. The same may be further augmented as per requirements of respective Faculty, duly endorsed by the relevant FRC/Dean.*

Guidelines for Research Proposal

Initial pages of the document should be as per BU Thesis Writing Manual.

SECTION 1: INTRODUCTION

Introductory paragraph with descriptions of the innovative research title i.e. what this project is all about?

- 1.1 Background: Background of the research shows the impact and implication of the innovative topic (the specific set up in which you are studying the issue). It should be well elaborated. It should include current facts and figures in the background. The scholar should also explain it in the context with the work already done on the topic.*
- 1.2 Research Gap/Rationale – Why this research is needed? Gap should come from following three critical domains:*
 - 1.2.1 Theoretical Gap (Compulsory): At least 8-10 future research recommendations from the most recent empirical studies published in top tier journals.*
 - 1.2.2 Contextual Gap/Analysis (Compulsory): The scholar should support the arguments in detail with empirical evidences.*
 - 1.2.3 Methodological Gap/Analysis: The scholar should highlight the methodological gap analysis and significance of the gap to be addressed.*
- 1.3 Problem Statement: Problem statement should be crisp, logical and holistically highlight the issue to be addressed through research being conducted by the scholar.*
- 1.4 Research Question(s): The research questions should be clear and measurable.*
- 1.5 Objectives: The research objectives should be clear and achievable. The research questions, research objectives and problem statement should be logically aligned.*



- 1.6 Significance of the Study: *The novelty of research should be highlighted which should be driven from the aforementioned sections (1.2 to 1.5).*

SECTION 2: LITERATURE REVIEW/ THEORETICAL FRAMEWORK

All discussion of literature should be critical and within the context of identified research gap, research questions and objectives based on recent studies on the topic. All conceptual, theoretical, logical relationship with all independent, mediating and moderating variables need to be discussed. The underpinning theory must be very logically presented and justified to support hypotheses and theoretical framework/research model.

SECTION 3: RESEARCH METHODOLOGY

Explain research methodology of the research and provide justification covering the undermentioned subsets as applicable to the relevant Faculty:

3.1 Research Epistemology: *Explain and justify the research paradigm/philosophy and ontological approach.*

3.2 Research Approach: *Explain and justify research approach which should clearly highlight theory building and/or testing i.e. induction, deduction, experimentation and abduction, as per the requirement of concerned Faculty.*

3.3 Research Strategy: *Explain and justify research strategy i.e. Survey methods, Grounded theory, Experimental, Narrative inquiry etc. It should also explain and logically justify i.e. Data sets suitability and applicability, timeframe, etc.*

3.4 Population and Sampling: *Explain the target population and logically justify how the target population would be the best choice for this study? Also explain the proposed sample and logically justify the sampling strategy/technique. The unit of analysis should also be clearly and logically identified, as applicable.*

3.5 Data Collection and Data Analysis: *Explain and discuss the methods of data collection and data analysis techniques along with the software with proper justifications. This may also include information of adapted, adopted or new developed instrument used for data collection, as applicable. The analysis should be based on clearly identified unit of analysis, as applicable.*

3.6 Research Ethics: *Research ethics followed during the conduct of this research should be clearly mentioned.*

REFERENCES *[For references, formatting and other documentation requirement, follow BU Thesis]*

ANNEXURES *[Timeline, Questionnaire, Additional Data etc. can be inserted here]*

NOTE:

- 1. Additional information into relevant sections can be added based on research requirements of respective Faculty. No further section should be added.*



2. *This format will help the scholars to develop innovative research proposal with clear directions and smooth transformation into a Thesis.*
3. *Guidelines for developing Research Proposal are also provided in annexure which should be followed in true letter and spirit. The same may be further augmented as per requirements of respective Faculty duly endorsed by the relevant FRC/Dean.*

Guidelines for Research Thesis

Initial pages of the *document should be as per BU Thesis Writing Manual.*

ABSTRACT

The abstract must cover all aspect of the study in a logically flow including research problem, research gap, objectives, methodology, key finding and significance of the study should be crisply mentioned. Keywords of the study should also be given in the abstract.

CHAPTER 1: INTRODUCTION

Introductory paragraph with descriptions of the research title i.e. what this project is all about?

- 1.1 *Background: Background of the research shows the impact and implication of the innovative topic (the specific set up in which you are studying the issue). It should be well elaborated. It should include current facts and figures in the background. The scholar should also explain it in the context with the work already done on the topic.*
- 1.2 *Research Gap/Rationale: Why this research is needed? Gap should come from following three critical domains:*
 - 1.2.1 *Theoretical Gap (Compulsory): At least 8-10 future research recommendations from the most recent empirical studies published in top tier journals.*
 - 1.2.2 *Contextual Gap/Analysis (Compulsory): The scholar should support the arguments in detail with empirical evidences.*
 - 1.2.3 *Methodological Gap/Analysis: The scholar should highlight the methodological gap analysis and significance of the gap to be addressed.*
- 1.3 *Problem Statement: Problem statement should be crisp, logical and holistically highlight the issue to be addressed through research being conducted by the scholar.*
- 1.4 *Research Question(s): The research questions should be clear and measurable.*
- 1.5 *Objectives: The research objectives should be clear and achievable. The research questions, research objectives and problem statement should be logically aligned.*



- 1.6 Significance of the Study: *The novelty of research should be highlighted which should be driven from the aforementioned sections (1.2 to 1.5).*

CHAPTER 2: LITERATURE REVIEW/ THEORETICAL FRAMEWORK

All discussion of literature should be critical and within the context of identified research gap, research questions and objectives based on recent studies on the topic. All conceptual, theoretical, logical relationship with all independent, mediating and moderating variables need to be discussed. The underpinning theory must be very logically presented and justified to support hypotheses and theoretical framework/research model

CHAPTER 3: RESEARCH METHODOLOGY

Explain research methodology of the research and provide justification covering the undermentioned subsets as applicable to the relevant Faculty:

3.1 **Research Epistemology:** *Explain and justify the research paradigm/philosophy and ontological approach.*

3.2 **Research Approach:** *Explain and justify research approach which should clearly highlight theory building and/or testing i.e. induction, deduction, experimentation and abduction, as per the requirement of concerned Faculty.*

3.3 **Research Strategy:** *Explain and justify research strategy i.e. Survey methods, Grounded theory, Experimental, Narrative inquiry etc. It should also explain and logically justify i.e. Data sets suitability and applicability, timeframe, etc.*

3.4 **Population and Sampling:** *Explain the target population and logically justify how the target population would be the best choice for this study? Also explain the proposed sample and logically justify the sampling strategy/technique. The unit of analysis should also be clearly and logically identified, as applicable.*

3.5 **Data Collection and Data Analysis:** *Explain and discuss the method of data collection and data analysis technique along with the software with proper justifications. This may also include information of adapted, adopted or new developed instrument used for data collection, as applicable. The analysis should be based on clearly identified unit of analysis, as applicable.*

3.6 **Research Ethics:** *Research ethics followed during the conduct of this research should be clearly mentioned.*

CHAPTER 4: DATA ANALYSIS/RESULTS/FINDINGS

This chapter should cover analysis of all the collected data and findings covering following aspects:

- 4.1 *Descriptive & Demographic analysis*
- 4.2 *Reliability and validity analysis*
- 4.3 *Experimental/Factor analysis*
- 4.4 *Hypotheses/Model fitness test etc*



4.5 *Result/Findings of hypotheses/experiments*

CHAPTER 5: DISCUSSION AND CONCLUSION

This chapter should cover scholarly discussion covering following aspects:

- 5.1 *Sequence of discussion should be experiment/hypotheses-wise.*
- 5.2 *Implications of the study*
 - 5.2.1 *Theoretical implications*
 - 5.2.2 *Practical implications*
 - 5.2.3 *Policy implications (where applicable)*
- 5.3 *Limitations of the study*
- 5.4 *Future research directions*
- 5.5 *Conclusion*

REFERENCES

[For references, formatting and other documentation requirement, follow BU Thesis Writing Manual]

ANNEXURES

[Code, Questionnaire, Additional Data etc can be inserted here]

NOTE:

1. *Additional information into relevant chapters can be added based on research requirements of respective Faculty. No further chapter should be added.*
2. *Guidelines for writing Research Thesis are also provided in annexure which should be followed in true letter and spirit. The same may be further augmented as per requirements of respective Faculty, duly endorsed by the relevant FRC/Dean.*

Annexure-C

BU THESIS WRITING MANUAL

for

Post Graduate Degrees



Directorate of Postgraduate Programs

Bahria University, Islamabad

2019

Table of Contents

CHAPTER 1	75
ORGANISATION OF THE THESIS	75
1.1 Definition of a Thesis.....	75
1.2 Organization of the Thesis	75
1.3 Title Page	76
1.3.1 Thesis Title.....	77
1.3.2 Statement of Award for the Thesis.....	77
1.4 Approval of Examination.....	77
1.5 Author's Declaration.....	77
1.6 Plagiarism Undertaking.....	77
1.7 Dedication Page (optional).....	78
1.8 Acknowledgement (optional).....	78
1.9 Abstract.....	78
1.10 Table of Contents Page (s).....	78
1.11 List of Tables	78
1.12 List of Figures	79
1.13 List of Symbols/Abbreviations/Notations/Terminology	79
1.14 List of Appendices	79
1.15 Text	79
1.15.1 Citation in the Text	80
1.15.2 Quotations in the Text.....	80
1.15.3 Tables in the Text.....	80
1.15.4 Figures in the Text	81
1.16 References.....	82
1.17 Appendix.....	82
CHAPTER 2	83
SIZE AND FORMAT	83
2.1 Paper and Size.....	83
2.2 Margin.....	83
2.3 Pagination	83
2.4 Numbering the Chapters and Sub-sections	84
2.5 Typing	85
2.6 Spacing and Format	85
2.7 Computer Printed Copy	86
2.8 Lettering and Drawing	86
2.9 Maximum Limits	86

2.10	Binding.....	86
2.10.1	Cover Colour and Writing.....	87
2.10.2	Front Cover	87
2.10.3	Spine	87
CHAPTER 3		88
REFERENCE STYLE		88
3.1	Introduction.....	88
3.2	Author and Year System.....	88
3.2.1	Citing in the Text	88
3.2.2	List of References	90
3.2.3	Writing Style for Authors' Names in the List of References.....	90
3.2.4	Writing Style for Various Types of Publication Materials in the List of References	92
3.3	Number System.....	96
3.3.1	Citing in the Text	96
3.3.2	Writing Style for Various Types of Publication Materials in the List of References	97
3.4	Reference from Internet	100
CHAPTER 4		101
NOTES AND FOOTNOTES.....		101
4.1	General Guidelines.....	101
4.2	Reference Style	101
CHAPTER 5		103
ELECTRONIC THESES AND DISSERTATIONS (ETD)		103
5.1	Introduction.....	103
5.2	Definition of Electronic Theses and Dissertations (ETD)	103
5.4	Contents of ETD	104
5.4.1	Pre-access File	104
5.4.2	Full Text File.....	104
5.5	Preparation Guideline	104

CHAPTER 1

ORGANISATION OF THE THESIS

1.1 Definition of a Thesis

Thesis in this manual refers to a documented report of the process followed and the results of original research conducted by a student in fulfilment of the requirements for a post graduate degree. The thesis should be presented in a manner that will reflect credit on the student, the faculty, and the University. The term *thesis* used throughout this manual refers to PhD and MS/MPhil theses.

1.2 Organization of the Thesis

A thesis is made up of three main parts namely preliminary pages, text and references.

These are arranged as in Table 1.1.

Table 1.1: Arrangement of parts in a thesis

Section	SUBJECT	STATUS	EXAMPLE (APPENDIX)	REMARKS
1.3	Title page	compulsory	A	without page number but counted as (i). Do not use BOLD letters.
1.4	Certificate of Approval for Examination	compulsory	B	page number using Roman numeric (ii)
1.5	Author's Declaration	compulsory	C	page number using Roman numeric (ii)
1.6	Plagiarism Undertaking	compulsory	D	page number using Roman numeric (ii)
1.7	Dedication	optional	E	page number using Roman numeric (if any)

1.8	Acknowledgements	optional	F	page number using Roman numeric (if any)
1.9	Abstract (English)	compulsory	G	page number using Roman numeric
1.10	Table of Contents	compulsory	H	page number using Roman numeric
1.11	List of Tables	compulsory	J	page number using Roman numeric
1.12	List of Figures	compulsory	K	page number using Roman numeric
1.13	List of Symbols/ Abbreviations / Notation/ Terminology	compulsory	L	page number using Roman numeric
1.14	List of Appendices	compulsory (if any)	M	page number using Roman numeric (if any)
1.15	Text	compulsory	N,P,Q,R,S	page number using Arabic numeric starting with page 1
1.16	References	compulsory	-	page number using Arabic numeric continue from the text
1.17	Appendices	optional	-	page number using Arabic numeric continue from the text

1.3 Title Page

Title page must contain information listed in the following order:

Title of the thesis;

Student's full name (as per registration in BU) ;

Statement of award for the thesis (see Appendix A);

Name of Department/Faculty/Campus/Centre where the student registered;

Name of the University; and

Month and Year of submission (Month and Year of submission of hard bound copy of the thesis).

See example in Appendix A.

1.3.1 Thesis Title

The title should be a short and snappy description of the main topic of the thesis. Not more than 16 words. Redundancies such as ““On the ...”, “Some ,,”, and “Toward a ...” must be avoided. Thesis title should not contain formulas, symbols or subscripts, Greek letters, or other non-alphabetical symbols; rather word substitutes are used.

1.3.2 Statement of Award for the Thesis

This statement should be written on the Title Page. It should state the purpose and the award for which the thesis is submitted. Examples of statements for various purposes and awards are listed in Appendix A.

1.4 Approval of Examination

This page should contain declaration by the Principal Supervisor regarding approval of thesis for examination. The page should be signed by the Principal Supervisor. See example in Appendix B.

1.5 Author’s Declaration

This page should contain declaration by the student on originality of the thesis stating that it is his/her own work and has not been submitted previously by him/her for taking any degree. The declaration should be signed by the student. See example in Appendix C.

1.6 Plagiarism Undertaking

This page should contain declaration by the student on plagiarism. The undertaking should be signed by the student. See example in Appendix D.

1.7 Dedication Page (optional)

The dedication must be brief, not more than one paragraph, and must not contain any number, chart or photograph. See example in Appendix E.

1.8 Acknowledgement (optional)

The student may acknowledge the assistance of various individuals or organizations in successfully producing the thesis. This should be written in one page. Example can be seen in Appendix F.

1.9 Abstract

Abstracts must be written in English. The abstract should be brief, written in one paragraph/page and not exceed 500 words. An abstract is different from synopsis or summary of a thesis. It should state the field of study, problem definition, methodology adopted, research process, results obtained and conclusion of the research. The abstract can be written using single or one and a half spacing. Examples can be seen in Appendix G (English).

1.10 Table of Contents Page (s)

The Table of Contents page (s) must start on a new page. It should list all sections, chapters and sub-headings. The titles must be written using the same words as those written in the text. See example in Appendix H.

1.11 List of Tables

This page should list all the tables found in the thesis. The page number of the table must also be included. The table numbers should be arranged according to the chapters. See example in Appendix J.

1.12 List of Figures

Diagrams, photographs, drawings, graphs, charts and maps are included as figures. The list should be written similar as the List of Tables. See example in Appendix K.

1.13 List of Symbols/Abbreviations/Notations/Terminology

All symbols or abbreviations or notations or terminology found in the text should be listed on this page. They are listed in the following order:

- | | | |
|---------------|---|--------------------|
| Roman letters | - | alphabetical order |
| Greek letters | - | alphabetical order |
| Superscripts | - | alphabetical order |
| Subscripts | - | alphabetical order |

See example in Appendix L.

1.14 List of Appendices

All appendices should be listed on this page. See example in Appendix M.

1.15 Text

A thesis must be divided into chapters. A title must be given and it should reflect its content. A new chapter must begin on a new page. A chapter must be divided into sections. These sections must be given appropriate titles and numbered. See example of numbering a chapter and sub headings in a chapter in Appendix N.

Texts must be written in paragraphs. Long paragraphs should be avoided. Each paragraph must describe an issue or subject. There must be continuity between paragraphs of chapters. See example of page continuation in Appendix p.

The text should contain:

- (i) an introduction, background, and problem statement of the study or research;
- (ii) a detailed description of the study or research which include theories, models, and materials and methods used;
- (iii) the data collection and analysis techniques.
- (iv) the main results and discussions; and
- (v) the conclusions and significance of the findings.

1.15.1 Citation in the Text

Citation means formally recognizing within the text, the resources from which the information or idea were obtained. The purpose is to acknowledge the work of others, to demonstrate the body of knowledge in which the work is based on and to lead others for further information. Citation in the texts must be written according to any one of the styles described in Chapter 3.

1.15.2 Quotations in the Text

A quotation must be written in a separate paragraph. If the quotation is in a different language, it must be written in *italic*. Example of writing a quotation is shown in Appendix Q.

1.15.3 Tables in the Text

All tables must be numbered using English numeric. A caption should be positioned at the top of the table. If the caption is written in a single line, it should be centered. If the caption is written more than one line, it should align to the left and justified. Preferably, long tables should be reduced to fit on a single page unless the oversized materials are absolutely necessary for clarity and understanding. Tables must be numbered with respect to the chapter. For example, Table 4.3 is the third table that appears in chapter 4. See example in Appendix R.

A table should be positioned after it is being cited for the first time in the text. All tables in the chapter can also be grouped together and positioned at an appropriate location. All tables must be listed in the List of Tables page.

1.15.4 Figures in the Text

Illustrations such as maps, charts, graphs, drawings, diagrams, and photographs are referred as *figures*. All figures must be clear and of high quality. Figures must be numbered using English numeric. A caption should be located at the bottom of the figure. If the caption is written in a single line, it should be centered. If the caption is written in more than one line, it should be aligned to the left and justified. Figures are numbered with respect to the chapter. For example, Figure 4.3 is the third figure that appears in chapter 4.

A figure should be positioned after it has been cited for the first time in the text. All figures in the chapter can also be grouped together and positioned at an appropriate location. All figures must be listed in the List of Figures page.

Illustrations in the form of CD's, slides, and others should be placed in specially made pockets glued to the inner side of the back cover. Oversized illustrations in the form of plans, maps, charts, graphs, and others should be reduced to fit a single page unless the oversized materials are absolutely necessary for clarity and understanding. For illustrations other than above, please refer to the following guidelines;

(i) Photographs

Photographs should be digitally embedded in the text unless absolutely impossible.

(ii) Newspaper Cuttings or Similar Materials

Copies of newspaper cuttings or similar materials should be of high quality.

It is advisable to scan all illustration materials using a scanner and printing them using a high quality colour printer. See example in Appendix S.

1.16 References

References are detailed description of items from which information were obtained in preparing the thesis. All references must be listed at the end of the text. They should be arranged using one of the methods discussed in Chapter 3.

1.17 Appendix

Appendices are supplementary materials to the text. These include tables, charts, computer program listings, and others. The following should be noted:

- (a) Appendix is not a must in a thesis. If necessary, data used for analysis, example of questionnaires, maps, photographs and other materials which are lengthy to be included in the text or materials that are not required implicitly to clarify matters discussed can be accompanied as appendix.
- (b) Appendix can be named as Appendix A, Appendix B, and so on, depends on types and quantity to be included. Specific titles can also be given.

CHAPTER 2

SIZE AND FORMAT

2.1 Paper and Size

White simile 80 gram high quality A4 size papers (210 × 297 mm) should be used.

2.2 Margin

All pages should be set with the same margin. The left margin should be at least 3.5 cm (for binding purposes) and 2.5 cm for the top, right and bottom margins.

2.3 Pagination

Each page of a thesis must be counted and numbered. Pages should be numbered consecutively as shown in Table 1.1. The page numbers should be printed at the top right-hand corner, at least 1.00 cm from the top edge and 2.5 cm from the right edge. Numbering should be as follows:

- (i) Preliminary pages of a thesis, starting from the title page should be numbered using small letter Roman numeric (i, ii, iii, etc.); the texts should be numbered using English numeric (1, 2, 3, etc.).
- (ii) The first page should be the title page. This page should be counted “i” but page number should not be printed.
- (iii) The first page of the text (Chapter 1) should be counted “1”.

2.4 Numbering the Chapters and Sub-sections

All chapters and their sub-sections must be labelled and numbered. The chapters are numbered using English numeric, i.e. Chapter 1, Chapter 2, Chapter 3, and so on. The sub-sections should not be indented but arranged in a structured manner not more than four levels as follows:

- 2 First level (Title of the chapter)
- 2.1 Second level (Title of the sub-section)
- 2.1.1 Third level (Title of the sub-sub-section)
- 2.1.1.1 Fourth level (Title of the sub-sub-sub-section)

If the length of a title of a chapter or any level is more than one line, single line spacing as in the text should be used. Sub-sections beyond level four should be labelled using characters. Examples are shown in Appendices P and Q.

If a thesis is divided into parts, separation sheets should be used to separate them. The separation sheets should be printed with capital letters, i.e. PART 1, PART 2, PART 3, and so on.

2.5 Typing

A thesis should be typed using MS Word or text processor. Font type and size that are commonly used for printed academic materials should be used. The same font type should be used throughout the thesis. The character size should **not be less** than 0.2 cm for capital letters and 0.15 cm for small letters. If *Microsoft Word* is used, font type *Times New Roman* with font size 12 or bigger should be used. One and a half line spacing should be used in the text. The text must be printed on one side only.

The title of a chapter should be typed using capital letters and centered. A new chapter must start on a new page. Chapters and their sub-sections must be given titles. The titles should be typed using bold letters and should not be underlined. See examples in Appendices P and Q.

2.6 Spacing and Format

The following guidelines should be observed:

- (i) The spacing between the top margin and the chapter number should be 2.5 cm;
- (ii) The spacing between the chapter number and the title, and between the title and the first line of a text should be at least two (2) line spacing;
- (iii) The spacing between the last line of a text with the title of a sub-section should be at least two (2) line spacing;
- (iv) The spacing between the title of a sub-section and the first line of a text should be two (2) line spacing;
- (v) The spacing between paragraphs should be at least one (1) line spacing;
- (vi) The number and the title of sub-section should be aligned with the left margin;
- (vii) The alignment of text in entire thesis should be justified.
- (viii) The spacing between the last line of a text and a table, or a figure or an illustration should be two (2) line spacing;
- (ix) The spacing after a full stop should be one (1) character spacing.

- (x) The spacing after a full stop (.) and a comma (,) should be one (1).

2.7 Computer Printed Copy

A thesis should be typed using word or text processors for fast and easy editing. Hardcopy should be produced using a laser printer or similar quality machines.

2.8 Lettering and Drawing

Lettering and drawing must be clear and should be reproducible satisfactorily without loss of any information.

2.9 Maximum Limits

The maximum number of pages for a dissertation/thesis are as follows:

MS/MPhil Dissertation/Thesis	:	200 pages (OR 10,000-30,000 words)
Doctorate Thesis	:	300 pages (OR 40,000-80,000 words)

These limits include tables, figures and other illustrations in the text but do not include references and appendices.

2.10 Binding

A thesis must be bound properly. A thesis should be temporarily bound for the purpose of examination. A thesis for final submission must be permanently bound with hard cover.

2.10.1 Cover Colour and Writing

A thesis submitted to the University must be permanently bound. A Buckram type cover must be used and written with golden/silver ink for the lettering. The minimum size of the letters should be 18 point. The cover colours should be as follows:

Thesis		Colour	Lettering
(i) <i>PhD Degree</i>			
a.	Faculty of Management Sciences	Maroon	Golden
b.	Faculty of Engineering Sciences	Dark Blue	Golden
c.	Faculty of Psychology	Dark Green	Golden
c.	Faculty of Health Sciences	Black	Golden
(ii) <i>MS/MPhil Degree</i>			
a.	Faculty of Management Sciences	Maroon	Silver
b.	Faculty of Engineering Sciences	Dark Blue	Silver
c.	Faculty of Psychology	Dark Green	Silver
d.	Faculty of Health Sciences	Black	Silver

2.10.2 Front Cover

The front cover should be written with the title of the thesis, the STUDENT'S NAME and BAHRIA UNIVERSITY with "CAMPUS" name using capital letters. An example is shown in Appendix T.

2.10.3 Spine

On the spine should be written the student's name, the degree (MS/MPhil/PhD), the year in which the thesis is approved (the year in which final bound thesis submitted) and BU Campus as in Appendix U.

CHAPTER 3

REFERENCE STYLE

3.1 Introduction

The details of the references cited in the text, published or unpublished should be located in the List of References. The list should be placed at the end of the thesis, a listing of sources actually cited, compiled either alphabetically (APA System) or numerically (Number System) as per the requirement of respective Faculty. The style selected must be used consistently throughout the thesis.

3.2 Author and Year System

This system is also known as APA System.

3.2.1 Citing in the Text

The references cited in the text should be indicated using the name of the author and the year of publication. Examples are as follow:

- (a) If the name of an author is written as part of a sentence, the year published should be written in parentheses.

“Works by Yao (1993) have shown that in order to maintain the behavioral link between the off springs and their parents, the use of crossover operator should be avoided.”

- (b) If the name of an author is not written as part of a sentence, both the name and year published should be written in parentheses.

“ANN offers useful properties and capabilities such as non-linearity, input and output mapping, adaptability and fault tolerance among others (Haykin, 1999).”

- (c) If there are two authors for a cited reference, both names should be written.

“In designing the model for non-linear system, the parsimonious principle (Soderstrom and Stoica, 1989) is critical because a non-linear model involves an excessive number of parameters.”

“Syu and Chang (1999) successfully used neural networks to adaptively control *Penicillin acylase* fermentation.”

- (d) If there are three authors for a cited reference, all three names should be written first time. Subsequently, use *et al.* after the name of the first author, if same reference is cited in text more than once.

“In designing the model for non-linear system, the parsimonious principle (Soderstrom, Mortin and Stoica, 1989) is critical because a non-linear model involves an excessive number of parameters.”

“Soderstrom et al (1989) successfully used neural networks to adaptively control *Penicillin acylase* fermentation.”

- (e) If there are more than three authors for a cited reference, use *et al.* after the name of the first author.

“The algorithm can be calculated by applying Gram-Schmidt procedures as described by Korenberg *et al.* (1988).”

- (f) If more than one reference materials by the same author in a same year are cited, use small letter alphabets (a, b, c, and so on) to distinguish them.
- (g) “Some of the basic principles widely used by many researchers are Lagrange-Euler (LE) equations (Uicker, 1965; Bejczy and Paul,1981), Newton-Euler (NE) equations (Luh et al., 1980a) and d’Alembert (G-D) equations (Lee et al., 1983).”
- (h) “Luh et al. (1980b) presented an example of an acceleration control of robot arm/manipulator.”
- (i) Cross referencing in not allowed in a thesis. Only primary sources should be used.

3.2.2 List of References

All references cited should be listed in the List of References at the end of the last chapter. List the references alphabetically. If more than one published material by the same author are cited, these materials should be listed chronologically. For example, an article by Scholfield published in 1964 should be listed before the one published in 1967.

3.2.3 Writing Style for Authors’ Names in the List of References

Generally, authors' names are listed using surname followed by their initials. The followings are examples of writing style according to the name of the author:

- (i) Single and multiple authors

Example (single author):

Veres, S. M. (1990). *Structure Selection of Stochastic Dynamic Systems*.

New York: Gordon and Breach Science Publishers.

Example (two or more authors):

Soderstrom, T., and Stoica, P. (1989). *System Identification*. United Kingdom: Prentice Hall International Ltd.

Luh, J. Y. S., Walker, M. W., and Paul, R. P. (1980b). Resolved-Acceleration Control of Mechanical Manipulators. *IEEE Trans. Automatic Control*. 25(3): 468-474.

- (ii) Editor

Example:

Martin, A. M. (Ed.) (1991). *Peat as an Agent in Biological Degradation of Waste*. London: Elsevier

Lees, R. H. and Thomas T. R. (Eds.) (1974). *Chemical Nomenclature Usage*. Chichester: Ellis Horwood.

- (iii) Corporate author/editor

Example:

Engineers Joint Council (1969). *Thesaurus of Management Sciences and Scientific Terms*. New York: Engineers Joint Council.

3.2.4 Writing Style for Various Types of Publication Materials in the List of References

Frequently, different types of publication materials are cited in a thesis. The style of writing details on cited publication in the List of References should be as follows:

(i) Book

Author (Year). *Title*. (Edition). Place published: Publisher.

Example:

Theusen, G. J. and Fabrycky, W. J. (1984). *Management Sciences Economy*. (6th ed.) Englewood Cliffs, N. J.: Prentice Hall.

(ii) Article in a book

Author of the article (Year). *Title of the article*. In author or editor of the book. *Title of the book*. (page). Place published: Publisher.

Example:

Hussein, S. B., Jamaluddin, H., Mailah, M. and Zalzal, A. M. S. (2000). *An Evolutionary Neural Network Controller for Intelligent Active Force Control*. In Parmee, I. C. (Ed.) *Evolutionary Design and Manufacturing* (pp. 351 –362). London: Springer-Verlag.

(iii) Journal articles

Print format

Author (Year). *Title of the article*. Title of the Journal. Volume (Issue no.), page.

Example:

Billings, S. A. (1980). *Identification of Nonlinear Systems: A survey*. Proc. IEE, Part D. 127(6), 272-284.

Electronic format

Author (Year). *Title of the article*. Title of the Journal. Volume (Issue no.),
page. Publisher

Example:

Borman, W. C. (1993). *Role of Early Supervisory Experience in Supervisor Performance*. Journal of Applied Psychology, 78, 443 – 449. American Psychology Association.

(iv) Conference articles

Author (Year). *Title of the article*. Name of the conference. Date of the
conference. Place, page.

Example:

Sheta, A. F. and De Jong, K. (1996). *Parameter Estimation of Nonlinear Systems in Noisy Environments Using Genetic Algorithms*. Proceedings of the 1996 IEEE International Symposium on Intelligent Control. 15-18 September. Dearborn, Michigan: IEEE, 360 - 365.

(v) Thesis

Author (Year). *Title of the thesis*. Thesis awarded. University, Place published.

Example:

Adnan bin Hassan (2002). *On-line Recognition of Developing Control Chart Patterns*. Ph.D. Thesis. Bahria University, Islamabad.

(vi) Standards

Name of the institution (Year). *Standard number*. Place published: Publisher

Example:

British Standards Institution (1990). *B.S. 764*. London: British Standards Institution.

(vii) Patent Print
format

Author (Year). *Patent number*. Place published: Official source.

Example:

Smith, I. M. (1988). *U.S. Patent No. 123, 445*. Washington DC: U.S. Patent and Trademark Office.

Electronic format

Author (Year). *Patent number*. Retrieved on date, year, from URL address of the patent database.

Example:

Ulrich, K. (2001). *European Patent No. EP1162184*. Retrieved on March 7, 2002, from <ftp://ep.espacenet.com/>

(ix) Brochure

Name of organization (Year). *Title* [Brochure]. Place published: Publisher.

Example:

Research and Training Center (1993). *Guidelines for Reporting and Writing About People with Disabilities*. [Brochure]. Lawrence, KS: Macmillan

(x) Unpublished materials

Author (Year). *Title*. Unpublished note, Name of organization.

(xii) Newspaper article

Print format

No author

Title of article. (Year, date). *Name of newspaper*,

page. Example:

Gearing up to meet new challenges. (2000, February 22). *The Star*. p. 2.

Author

Author. (Year, date). Title of article. *Name of newspaper*, page.

Example:

Izatun Shari (2000, April 18). K-economy: draft out in October. *New Straits Times*. p. 2-4.

(xii) Magazine

Author. (Year). Title of article. *Name of magazine*, Volume/Issue no.,

page Example:

Smith, B. L. (1994). Biofeedback. *Science*, 62, 673 – 675.

(xiii) CD-ROM

Author. (Year). Title of article. [CD-ROM]. *Title of Journal*,, Volume, page.
Publisher.

Example:

Ivry, R. B. (1995). Perception and production of temporal intervals across a range of durations. [CD-ROM]. *Journal of Experimental Psychology*, 21, 3-18. American Psychological Association.

Example of a List of References using author and year system is shown in Appendix V.

3.3 Number System

3.3.1 Citing in the Text

All references cited in the text must be assigned numbers using Arabic numeric. The first cited reference should be assigned with number 1. Subsequent cited references should be given consecutive numbers. One of the methods below can be used when citing:

- (i) If the name of an author is written as part of a sentence, the reference number should be inserted in parenthesis or square brackets or superscript after the author's name, for example:

“Genetic algorithm was introduced by Holland (1) and was extensively explored by Goldberg (2).”

OR

“Genetic algorithm was introduced by Holland [1] and was extensively explored by Goldberg [2].”

OR

“Genetic algorithm was introduced by Holland¹ and was extensively explored by Goldberg².”

- (ii) If the name of an author is not part of a sentence, the reference number should be inserted in parenthesis or square brackets or superscript at the appropriate location; for example:

“Recently, evolutionary programming has been applied to various optimization problems (1) and it offers many advantages such as having global search characteristics.”

OR

“Recently, evolutionary programming has been applied to various optimization problems [1] and it offers many advantages such as having global search characteristics.”

OR

“Recently, evolutionary programming has been applied to various optimization problems¹ and it offers many advantages such as having global search characteristics.”

3.3.2 Writing Style for Various Types of Publication Materials in the List of References

In the list of references, the numbers assigned to the source of references cited in the text are listed in incremental order. The style of writing details on cited publication in the List of References are as follows:

- (i) Book

Author. *Title of the book*. Edition (if not the first). Place published:
Publisher. Year

Example:

[1] Theusen, G. J. and Fabrycky, W. J. *Management Sciences Economy*.
6th. ed. Englewood Cliffs, N. J.: Prentice-Hall. 1984

(ii) Article in a book

Author. Title of the article. In: Author of the book. *Title of the book*. Place published: Publisher. page; Year.

Example:

[2] Hussein, S. B., Jamaluddin, H., Mailah, M. and Zalzal, A. M. S. An Evolutionary Neural Network Controller for Intelligent Active Force Control. In: Parmee, I. C. ed. *Evolutionary Design and Manufacturing*. London: Springer-Verlag. 351-362; 2000

(iii) Journal articles

Author. Title of the article. *Title of the Journal*. Year. Volume (number): page.

Example:

[3] Billings, S. A. Identification of Nonlinear Systems: A Survey. *Proc. IEE Part D*, 1980. 127(6): 272-284.

(iv) Conference articles

Author. Title of the article. *Name of the conference*. Date of the conference. Place published: Publisher. Year. page.

Example:

[4] Sheta, A. F. and De Jong, K. Parameter Estimation of Nonlinear Systems in Noisy Environments Using Genetic Algorithms. *Proceedings of the 1996 IEEE International Symposium on Intelligent Control*. September 15-18, 1996. Dearborn, Michigan: IEEE. 1996. 360-365.

(v) Thesis

Author. *Title of the thesis*. Thesis award. Name of Institution; Year

Example:

[5] Adnan bin Hassan. *On-line Recognition of Developing Control Chart Patterns*. Ph.D. Thesis. Bahria University Islamabad; 2002

(vi) Standards

Name of the Institution. *Title of the standard*. Place published, Standard number. Year

Example:

[6] British Standards Institution. *Tongued And Grooved Software Flooring*. London, BS 1297. 1987

(vii) Patent

Owner's name. *Title of the patent*. Patent number. Year.

Example:

[7] Lindgren, E. A. *Screen Room Air Inlet and Wave Guard*. U.S. Patent 2, 925, 457. 1960.

(viii) Commercial catalogue

Name of distributor. *Title*. Place published: Note. Year

Example:

[8] Howick Partitioning Ltd. *Howick: Partitioning in Business*. Redhill (U.K.): Trade brochure. 1984.

Example of a List of References using Number System is in Appendix W.

3.4 Reference from Internet

Although internet provides a large source of references, the information from internet are not permanent and are up-dated periodically. Thus, these are unreliable sources of reference. Internet should only be used to retrieve primary sources of reference.

CHAPTER 4

NOTES AND FOOTNOTES

4.1 General Guidelines

Notes are supplementary information provided in a writing. Notes such as footnotes, final notes, and others, are mostly not allowed for theses in the field of Science and Technology. However, limited use of footnotes is allowed for theses in the field of Humanities and Social Sciences. Footnotes are used to elaborate or provide additional information regarding matters discussed in that page. Footnotes are recorded using Arabic numeric and numbered consecutively. Raised superscript numerals in the text refer to explanatory notes and documented sources appearing either at the bottom of the page as footnotes or at the end of the thesis as endnotes in a notes section. The advantage of using notes is that explanatory type of information can be presented along with source citations on the same page or place.

4.2 Reference Style

Footnotes for references are written differently in the aspect of author's name and the use of punctuation. The author's name should be written in full. Comma or quotation mark should be used to separate author's name, title of the article and publication details. The font size used should be two (2) points smaller than the text.

Style for writing reference as footnotes:

numeral Author, "Title of article." publication details, year, page.

Example:

10 Mary Duncan Carter, Wallace John Bonk, and Rose Mary Magrill, "Building Library Collections." Fourth edition. (Metuchen, N. J.: Scarecrow Press, 1974), pp. 61 - 66.

CHAPTER 5

ELECTRONIC THESES AND DISSERTATIONS (ETD)

5.1 Introduction

All postgraduate students are to submit a copy of Thesis in digital form beside the normal bound hardcopy after approval. Students are required to submit Four (4) bound hardcopies and One (1) CD containing digital thesis.

The main purpose of implementing digital thesis is to enable theses submitted to Bahria University be accessible through the Internet. This is in-line with development in digital technology and globalization. With this implementation, Bahria University hopes to be projected as a leading university in research and graduate studies.

5.2 Definition of Electronic Theses and Dissertations (ETD)

Electronic Theses and Dissertations or ETD are documents that record results of research or scholarship of graduate students. These documents are prepared in the form

that can be accessed globally through the Internet. An ETD is the same as the original paper document that has been approved by the panel of examiners and Senate.

5.4 Contents of ETD

An ETD must consist of two (2) files, namely pre-access file and full text file. Both files should be in word as well as in PDF format. Scanned copy of plagiarism report duly signed by the Principal Supervisor should also be added in the CD (PDF).

5.4.1 Pre-access File

Pre-access file is a file that contains information about the brief content of the thesis. By reading this file, a reader will be able to assess the relevance of the document to the reader's research interest. If a reader wishes to access the whole thesis, the reader should contact the librarian for the full text file. The pre-access file should include all the preliminary pages and the first ten pages of the introduction as arranged in the bound thesis.

5.4.2 Full Text File

A full text file consists of all contents of the thesis that has been approved by the examiners and relevant statutory bodies. This includes all preliminary pages, main contents of the thesis and all appendices as submitted to the panel of examiners and approved. Writing style as the original bound hardcopy must be retained as presented in Chapters 1 to 4. All these pages must be saved into one (1) file only.

5.5 Preparation Guideline

The following guidelines must be observed:

- i. The electronic version must be the same as the final bound thesis as approved by the examiners/statutory bodies;
- ii. Convert the thesis into PDF format. Use the latest version of Adobe Acrobat PDFMaker. **Do not set Document Security;**
- iii. All pages which contain signatures of student and supervisor must be scanned;
- iv. Two files must be generated. The first file is for the purpose of pre-access that will be made accessible to the public. The second file is the full text file. The files should be named as follows:

`<name><registration.no><d><yy><f><c>.pdf`

Code description

`<name>` is the student's first name (without surname or father's name)

`<registration.no>` is the student's registration number allotted by the BU

`<d>` is the name of degree for which thesis was submitted

`<yy>` is the year in which thesis approved

`<f>` is the file type

p – pre-access file

t – full text file

`<c>` is the campus of BU

Example 1:

Muhammad Adnan Hassan, is a MS(CS) student at Bahria University, Lahore Campus. His thesis is approved in the year 2017. His registration number is 25875. Therefore:

<name> = Muhammad Adnan Hassan
<registration.no> = 25875
<d> = MS(CS)
<yy> = 2017
<f> = t
<c>=BULC

The files should be named as follows:

muhammadadnanhassan25875ms(cs)2017pbulc.pdf (pre-access file)
muhammadadnanhassan25875ms(cs)2017tbulc.pdf (full texts file)

Example 2:

Samina Khalid, is a PhD(CE) student at Bahria University, Islamabad Campus. Her thesis is approved in the year 2019. His registration number is 10158. Therefore:

<name> = Samina Khalid
<registration.no> = 10158
<d> = PhD(CE)
<yy> = 2019
<f> = t
<c>=BUIC

The files should be named as follows:

saminakhalid10158phd(ce)2019pbuic.pdf (pre-access file)
saminakhalid10158phd(ce)2019tbuic.pdf (full texts file)

2.5 cm

APPENDIX A

Example of a title page

2.5 cm

ON-LINE RECOGNITION OF DEVELOPING CONTROL CHART PATTERNS
USING ARTIFICIAL NEURAL NETWORKS



MUHAMMAD ADNAN HASSAN
01-281121-007

3.5 cm

A thesis submitted in fulfilment of the
requirements for the award of the degree of
Doctor of Philosophy (Computer Engineering)

2.5 cm

Department of Computer Engineering

BAHRIA UNIVERSITY ISLAMABAD

AUGUST 2019

APPENDIX B

Sample of a Certificate of Approval for Examination

Approval for Examination

Scholar's Name: _____ Registration No. _____

Programme _____ of _____ Study: _____

Thesis _____ Title: _____

It is to certify that the above scholar's thesis has been completed to my satisfaction and, to my belief, its standard is appropriate for submission for examination. I have also conducted plagiarism test of this thesis using HEC prescribed software and found similarity index at _____ and from single source is _____ that is within the permissible limit set by the HEC for the MS/MPhil/Equivalent degree thesis. I have also found the thesis in a format recognized by the BU for the PhD thesis.

Principal Supervisor's Signature:

Date: _____

Name: _____

APPENDIX C
Sample of Author's Declaration

Author's Declaration

I, _____ hereby state that my PhD thesis titled
“ _____
_____”

is my own work and has not been submitted previously by me for taking any degree from this university

_____ (Name _____ of
University) _____

or anywhere else in the country/world.

At any time if my statement is found to be incorrect even after my graduation, the University has the right to withdraw/cancel my PhD degree.

Name of scholar: _____

Date: _____

APPENDIX D
Sample of Plagiarism Undertaking

Plagiarism Undertaking

I, solemnly declare that research work presented in the thesis titled
“ _____

_____”

is solely my research work with no significant contribution from any other person. Small contribution / help wherever taken has been duly acknowledged and that complete thesis has been written by me.

I understand the zero tolerance policy of the HEC and Bahria University towards plagiarism. Therefore I as an Author of the above titled thesis declare that no portion of my thesis has been plagiarized and any material used as reference is properly referred / cited.

I undertake that if I am found guilty of any formal plagiarism in the above titled thesis even after award of PhD degree, the university reserves the right to withdraw / revoke my PhD degree and that HEC and the University has the right to publish my name on the HEC / University website on which names of scholars are placed who submitted plagiarized thesis.

Scholar / Author's Sign: _____

Name of the Scholar: _____

APPENDIX E
Sample of a dedication page

To my beloved mother and father

2.5 cm

APPENDIX F

Example of acknowledgement page

2.5 cm

ACKNOWLEDGEMENT

4 lines

1.27 cm (0.5 inci)

↔ In preparing this thesis, I was in contact with many people, researchers, academicians, and practitioners. They have contributed towards my understanding and thoughts. In particular, I wish to express my sincere appreciation to my main thesis supervisor, Professor Dr. Mohd Shariff Nabi Baksh, for encouragement, guidance, critics and friendship. I am also very thankful to my co-supervisors Professor Dr. Awaluddin Mohd Shaharoun and Associate Professor Dr. Hishamuddin Jamaluddin for their guidance, advices and motivation. Without their continued support and interest, this thesis would not have been the same as presented here.

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Librarians at Bahria University also deserve special thanks for their assistance in supplying the relevant literatures. My fellow postgraduate students should also be recognised for their support. My sincere appreciation also extends to all my colleagues and others who have provided assistance at various occasions. Their views and tips are useful indeed. Unfortunately, it is not possible to list all of them in this limited space. I am grateful to all my family members.

APPENDIX G

Example of an abstract in English

ABSTRACT

The purpose of this study is to investigate the application of genetic algorithm (GA) in modelling linear and non-linear dynamic systems and develop an alternative model structure selection algorithm based on GA. Orthogonal least square (OLS), a gradient descent method was used as the benchmark for the proposed algorithm. A model structure selection based on modified genetic algorithm (MGA) has been proposed in this study to reduce problems of premature convergence in simple GA (SGA). The effect of different combinations of MGA operators on the performance of the developed model was studied and the effectiveness and shortcomings of MGA were highlighted. Results were compared between SGA, MGA and benchmark OLS method. It was discovered that with similar number of dynamic terms, in most cases, MGA performs better than SGA in terms of exploring potential solution and outperformed the OLS algorithm in terms of selected number of terms and predictive accuracy. In addition, the use of local search with MGA for fine-tuning the algorithm was also proposed and investigated, named as memetic algorithm (MA). Simulation results demonstrated that in most cases, MA is able to produce an adequate and parsimonious model that can satisfy the model validation tests with significant advantages over OLS, SGA and MGA methods. Furthermore, the case studies on identification of multivariable systems based on real experimental data from two systems namely a turbo alternator and a continuous stirred tank reactor showed that the proposed algorithm could be used as an alternative to adequately identify adequate and parsimonious models for those systems.

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APPENDIX H

Sample of a Table of Contents page

CHAPTER	TITLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENTS	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xii
	LIST OF FIGURES	xiv
	LIST OF ABBREVIATIONS	xix
	LIST OF SYMBOLS	xxi
1	ORGANISATION OF THE THESIS	1
	1.1 Definition of a Thesis	1
	1.2 Organisation of the Thesis	1
	1.3 Thesis Status Declaration	1
	1.4 Declaration	3
	1.4.1 Supervisor's Declaration	4
2	NOTES AND FOOTNOTES	6
	2.1 General guideline	6
	2.2 Consistency	11
	REFERENCES	125
	Appendices A - Y	136 -162

APPENDIX J

Example of a List of Tables

LIST OF TABLES

TABLE NO.	TITLE	PAGE
2.1	The role of statistical quality Management Sciences tools and methodologies	16
2.2	Basic ANN models used for control chart pattern recognition	47
2.3	General design strategies/structures for CCPR	49
3.1	The overall research plan	70
3.2	Parameters for simulating individual process variation data	75
3.3	Description of performance measures	92
4.1	Targeted recogniser outputs	103
4.2	Design matrix and results for the preliminary feature screening	108
4.3	Regression analysis for the results of preliminary feature screening	111
4.4	ANOVA for the results of preliminary feature screening	111
4.5	Tentative significant main effects and two-factor interactions	113
4.6	Estimated effects and regression coefficients for the recogniser's performance (reduced model)	116
4.7	ANOVA for the recogniser's performance (reduced model)	116

APPENDIX K

Example of a List of Figures

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
1.1	Trends leading to the problem	2
1.2	Design and development phases of the proposed scheme	7
1.3	Summary of the research contributions	10
1.4	Organisation of the thesis	11
2.1	Chance and assignable causes of process variation (Montgomery, 1996a)	14
2.2	Classification of statistical quality Management Sciences tools	15
2.3	Continuous variability reduction using SPC chart (Revelle and Harrington, 1992)	19
2.4	Classification of research areas in SPC	20
2.5	Advances in process variation monitoring and recognition using SPC charting	25
2.6	Nelson's runs rules (Nelson, 1984)	26
2.7	Typical fully developed patterns on Shewhart control chart (Cheng, 1989)	28

APPENDIX L

Example of a List of Symbols

LIST OF SYMBOLS

D, d	-	diameter
F	-	Force
g	-	Gravity = 9.81 m/s
I	-	Moment of inersia
l	-	Length
m	-	Mass
N	-	Rotaional velocity
P	-	Pressure
Q	-	Volumetric flow-rate
r	-	Radius
T	-	Torque
Re	-	Reynold number
V	-	Velocity
w	-	Angular velocity
x	-	Displacement
z	-	Height
θ	-	Angle
ρ		Density

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APPENDIX M
Example of a List of Appendices

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LIST OF APPENDICES

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APPENDIX

TITLE

PAGE

A	Examples of possible assignable causes of unnatural control chart patterns	253
B	Models for generating the control chart patterns (data streams)	254
C1	Mathematical expressions for the statistical features	256
C2	Minimum and maximum feature values	259
C3	Analysis of results for experiments to revise the parameter setting	260

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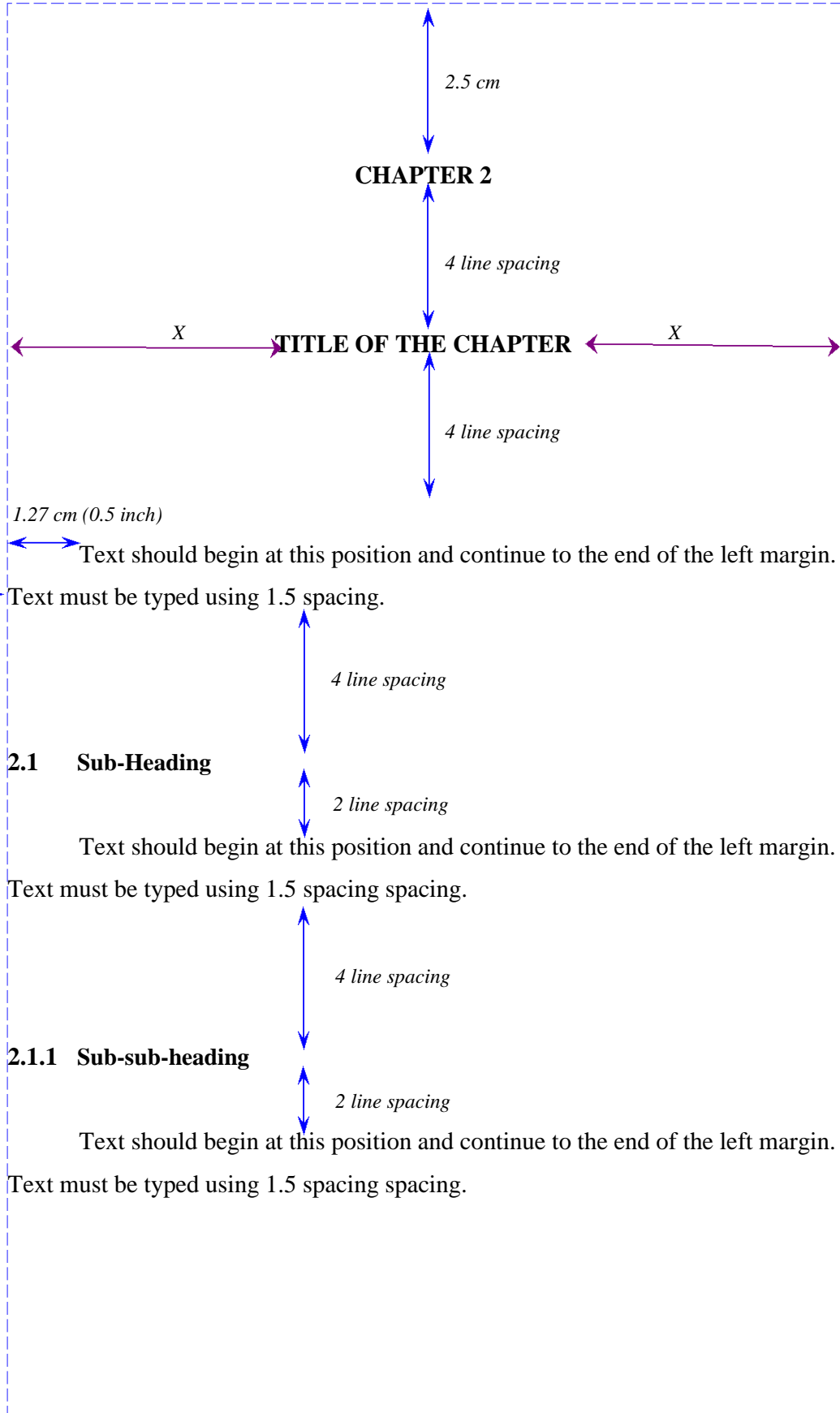
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2.5 cm

2.5 cm

APPENDIX N

Sample of numbering a chapter and sub-heading in the chapter



2.5 cm

APPENDIX P

Sample of a page continuation

Texts from previous page continue here.

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2.5 Sub Heading

2 line spacing

Text should begin here.

and ends here.

4 line spacing

2.5.1 Sub-sub-Heading

2 line spacing

2.5.1.1 Sub-sub-sub Heading

2 line spacing

Text should begin here .

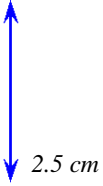
- **First Bullet**

Text should begin here

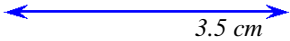
- **Second Bullet**

Text should begin here

and ends here.



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2.5 cm

2.5 cm



2.5 cm

APPENDIX Q
Sample of a quotation in the text

After deliberating on doctoral education in Australia in the 1990s, one observer in Australia writes:

The lack of any significant formal course work within our Ph.D. and master degrees by research has continued for three decades. The focus of our Ph.D. research type degrees continues to be the research project, and this is almost the only medium by which education is accomplished.

(Stranks, 1984:171)

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2.5 cm

2.5 cm

2.5 cm

APPENDIX R

Sample of a table in the text

Table 4.3 : Comparison of experimental and computer simulation results

Distance Ratio	Experiment (mean value)	Computer Simulation (mean value)
0.125	0.25	0.137
0.250	0.46	0.560
0.375	0.63	0.738
0.500	0.75	0.861
0.625	0.83	0.939
0.750	0.88	0.981
0.875	0.93	0.997
1.000	1.00	1.000

3.5 cm

2.5 cm

2.5 cm

2.5 cm

APPENDIX S

Sample of an illustration or a figure

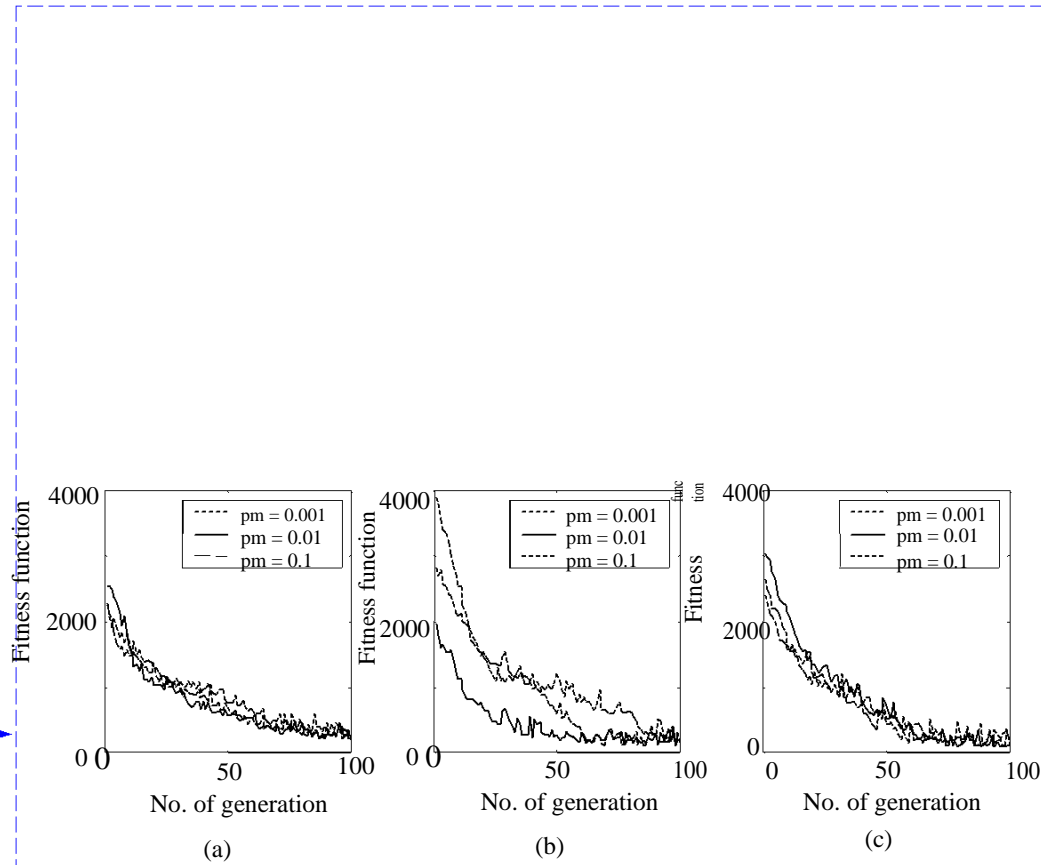


Figure 4.3 Simulation results for model 1 on effect of varied crossover and mutation a) $p_c = 0.05$, varied p_m , b) $p_c = 0.6$, varied p_m c) $p_c = 0.95$, varied p_m

2.5 cm

2.5 cm

APPENDIX T
Sample of a thesis front cover

2.5 cm

TITLE IN CAPITAL LETTERS
(Centered within prescribed margin)



3.5 cm

2.5 cm

STUDENT'S NAME
ENROLLMENT NO

BAHRIA UNIVERSITY ISLAMABAD

2.5 cm

2.5 cm

APPENDIX U

Sample of a thesis spine (must be in English)

MUHAMMAD ADNAN HASSN
MS(EE)
2016
BUKC

MUHAMMAD ADNAN HASSN
PhD(CE)
2017
BUIC

APPENDIX V

Sample of a reference list using author and year system

- American Chemical Society ed. (1978). *Handbook for Authors of American Chemical Society Publications*. Washington, D. C.: American Chemical Society.
- Billings, S. A. (1980). Identification of Nonlinear Systems: A survey. *Proc. Instn Electr. Engrs, Part D*. 127(6): 272-284.
- Engineers Joint Council (1969). *Thesaurus of Management Sciences and Scientific Terms*. New York: Engineers Joint Council.
- Martin, A. M. ed. (1991). *Peat as an Agent in Biological Degradation of Waste*. London: Elsevier. 314–362.
- Puget, J. F. and Albert, P. (1994a). *SOLVER: Constraints – Objects Descriptions*. Technical Report. ILOG S. A.
- Puget, J. F. and Albert, P. (1994b). *A C++ Implementation of CLP*. Technical Report. ILOG S. A.
- Sheta, A. F. and De Jong, K.(1996). Parameter Estimation of Nonlinear Systems in Noisy Environments Using Genetic Algorithms. *Proceedings of the 1966 IEEE International Symposium on Intelligent Control*. September 15-18. Dearborn, Michigan: IEEE, 360-365.
- Theusen, G. J. and Fabrycky, W. J. (1984). *Management Sciences Economy*. 6th edition. Englewood Cliffs, N. J.: Prentice-Hall.
- Veres, S. M. (1990). *Structure Selection of Stochastic Dynamic Systems*. New York: Gordon and Breach Science Publishers.

Note: Arranged alphabetically according to author's name.

APPENDIX W

Sample of a reference list using number system

1. Theusen, G. J. and Fabrycky, W. J. *Management Sciences Economy*. 6th edition. Englewood Cliffs, N. J.: Prentice-Hall. 1984.
2. Billings. S. A. Identification of Nonlinear Systems: A Survey. *Proc. Instn Electr. Engrs, Part D*, 1980, 127(6): 272-284.
3. Sheta, A. F. and De Jong, K. Parameter Estimation of Nonlinear Systems in Noisy Environments Using Genetic Algorithms. *Proceedings of the 1966 IEEE International Symposium on Intelligent Control*. September 15-18, 1996. Dearborn, Michigan: IEEE, 1996. 360-365.
4. British Standards Institution. *Tongued and Grooved Software Flooring*. London, BS 1297. 1987
5. Lindgren, E. A. *Screen Room Air Inlet and Wave Guard*. U.S. Patent 2, 925, 457. 1960.
6. Howick Partitioning Ltd. *Howick: Partitioning in Business*. Redhill (U.K.): Trade brochure. 1984.
7. Sheta, A. F. and De Jong, K. Parameter Estimation of Nonlinear Systems in Noisy Environments Using Genetic Algorithms. *Proceedings of the 1966 IEEE International Symposium on Intelligent Control*. September 15-18. Dearborn, Michigan: IEEE. 1996. 360-365.

Note: Arranged in the order in which the references were cited in the thesis.

Annexure-D

GRIEVANCES MANAGEMENT SYSTEM

1. *Purpose:*

The purpose of this policy is to establish a grievance management system, so that all grievances/complaints of graduate students/prospective students and stakeholders are addressed in a fair, equitable, and timely manner, by simultaneously adhering to the following purposes:

- i. The aim is to develop a culture in which grievances are viewed as opportunities for improvement.
- ii. Ensure that students or potential students are free to complain without fear of discrimination.
- iii. Ensure that BU administration/faculty are fully aware of grievance processes and are appropriately trained to ensure that the processes are consistently applied.
- iv. Requires respectful behavior among all parties when handling grievances.
- v. Communicate effectively in a timely manner to keep all parties up to date with the progress of grievances.
- vi. Ensure that all information is held at the utmost confidence.
- vii. Ensure that the principles of natural justice are applied.
- viii. To ensure that grievances are resolved to the satisfaction of all parties.

2. *Classification of Grievances:*

Based on the diversified nature of academic/administrative process, grievances are classified into following categories:

- i. Grievance against the teacher/supervisor
- ii. Grievance against the administration
- iii. Grievance against the facilities
- iv. Grievance against the exams/grading
- v. Grievance against the PhD process(/s)

3. *Grievances Handling Mechanism:*

All grievances must be handled in following hierarchy:

- i. The student will submit the grievance to HOD/Principal.
- ii. The grievance against will be handled by the grievance management committee and report will be submitted to the HOD.
- iii. HOD will present the case in the DRC and FRC along with decision of the committee for record purpose. A copy of the report will be submitted to DG/Director campus as well.
- iv. In case the grievance is not resolved at committee level, DRC will handle the case, and similarly if the case is beyond the scope of DRC, it will be forwarded to FRC for appropriate action. In case the grievance still persists, FRC will refer the case to HERC.
- v. The grievance must be handled for a maximum time of four weeks. Rector's approval can be obtained subject to ratification of the case from the forth coming HERC.

4. *Guidelines to Prevent Grievances*

Each Dept/School will nominate counselors (/PGP coordinators) to conduct the mentoring/briefing sessions/seminars for the students/scholars/faculty/support staff about the postgraduate/administrative procedures. The session exercise will be conducted once in each semester by the respective counselors and the report will be presented in respective DRCs/FRCs.

Index:

<p>Admission,1,4,10,12,14,15,19,33,34 Admission Committee,1,14,15,33,34 Advisory Committee,8 Aptitude Test,14 Assessment,10,20,24,25,28,49 Attestation,14 Claims,19 Conflict Resolution,19 Candidate,4,7,8,9,10,14,15 Chance,1,19,21,28 Comprehensive Examination,8 Co-Supervisor,4,9,20,28,32,44,45 Course Withdrawal,18 Courses outside BU,18 Credit Hours,1,15,17,29,37,38 Definitions,1,4,16,49,58 Degree,1,4,5,6,10,12,16 DRC,1,4,8,9,12,13,17,18 Drop,1,13,19,30,39,40,41,42 Duration,1,5,15,16,17,18,22,29,45,50 Extension,12,29,32,35 Extended,5,15,16,35,50 Eligibility,1,10,14,17,33 Equivalence Committee,4,17,37,38 Equivalency,14 Ethical Review Committee/ERC,1,8,10,21,45 Exemption,1,4,5,8,9,12,17,32,36 External Examiner,4,7,8,21,24,27,62 Foreign Evaluator,8,13 Format,5,15,17,18,20 FRC,1,7,8,9,11,12,13,17 HERC,6,30, Honorarium for Examiners,29 Internal Examiner,5,21,27,62 Migration,1,17,19,22,27,36 MS Forms,32 MS/MPhil Credit Hours,1,15,17,29,37,38</p>	<p>Post-Graduate Programmes Coordinator,1,6,8,9 Post-Graduate Programmes Directorate,1,8,9,10 Principal Supervisor,5,8,9,20,22,23,24,25,28 Probation,19 Progress Report,1,8,9,12,13 Refund,1,18,19 Registration Procedure,1,8,13,14,16,21,39,41 Regular/Minimum,16 Research Committees,6 Research Proposal,1,9,10,21,32,49,50 Semester Freeze,1,18,30,32,41,42 Selection,1,14,15,59 Shortfall, 35 Submission of Thesis Revision,29 Thesis Defence,1,4,5,6,8,16,24,25,26,27,29,62 Thesis Evaluation,1,16,23,24,29,32,56,57 Thesis Submission,1,23,32 Time Bar/Barred,5 Time Late,5,16,35 Transfer of Credits/TOC,1,5,8,9,17,32,36,37 Viva Voce,1,6,8,9,25,26,27,28,29,32,61,62 Waiver to Time Bar,5,6,15,16,35</p>
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