Term Paper

M.Sc. (Physics)

(Semester System)

Guidelines
Documentation Format
Instructions

CDRC, CDP, TU, Kirtipur

May 2019

Guidelines (as given in Curriculum)

PHY605/653: Term Paper (III)/(IV) 2 CH

Nature of the course: Research/Presentation Full Marks: 50 Pass Marks: 30

Course Description:

This course develops the skill of research work in Physics.

Objectives:

The course will give an exposure to the students regarding the problem identification in the various areas of research work in Physics by performing book, literature review and finally deliver a presentation followed by VIVA examination.

Term Paper Guidelines

1) A student can do project work only if a physics faculty of the department agrees to guide his/her Term Paper. The criteria for the '***Term Paper Guidance***' will be developed by the Central Department Research Committee (CDRC).

2) Term Paper will be carried out in groups of either two or three students under a project. They should work as a team for their objectives. This course will be offered in the third semester to the students who already enrolled for the dissertation, and the rest students with two elective papers will do it in the fourth semester.

3) The nature of Term Paper work can be field oriented, theoretical, computational, observational and experimental. Whatever the nature of the work, students should **critically review literature** of the area of interest and identify the problem specifically. It is expected that the problem can be addressed through a method.

4) Students should prepare a one-page proposal (title with a brief description) and submit it to the department within 2 months of the beginning of third semester. Advisor should sign the proposal.

5) Term Paper report should be submitted by students separately. The format of the Term Paper report will be decided by the Central Department Research Committee (CDRC). There will be a final presentation by the group/individual followed by VIVA examination. The final VIVA examination will be held within one months of third semester practical examination. The Dean Office will appoint the external examiner of final VIVA examination. The evaluation committee for the final VIVA examination consist 4 members - HoD or program coordinator, supervisor, external and internal examiner.

6) There will be additional fee for the Term Paper. It should be paid by the student during submission. The remuneration for the evaluation committee will be the same as the M.Sc. Project Work decided by the IoST, TU in the year 2072.

Text Books:

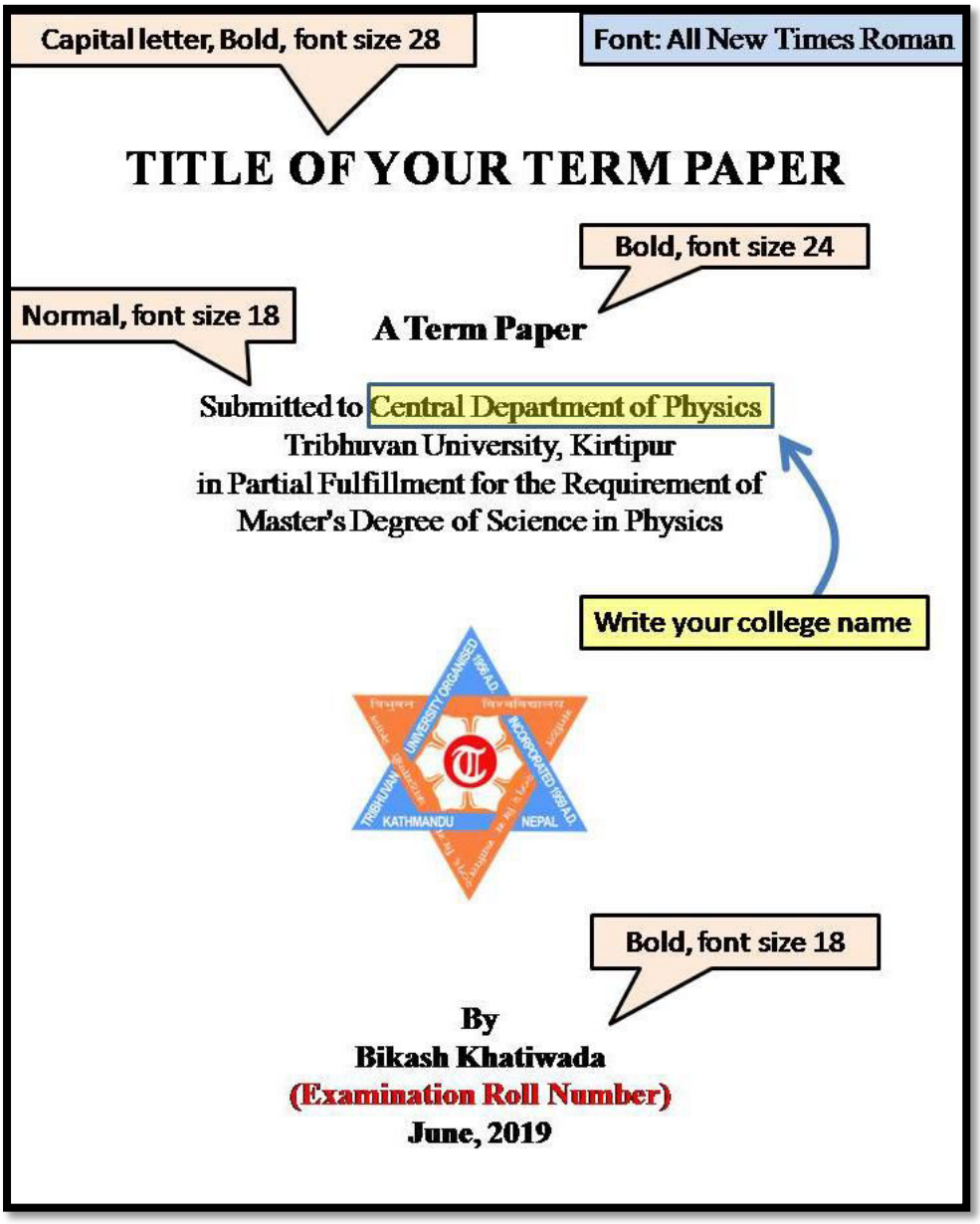
1. All related literatures, masters' dissertation and Ph.D. thesis of various areas of Physics can be reading/performing material for term paper.

Reference Books:

1. All the books that are the text books and reference book of M.Sc. first to fourth semester curriculum can be reference material for the term paper.

M.Sc. (Physics) Term Paper Format

1. M.Sc. (Physics) **term paper** should be written in scientific English, font new times roman, size 12, spacing 1.5 and in a style consistent with that of the scientific/technical communication.
2. The **title** (new times roman, bold, capital letter, font size 28) of the term paper should be concise, but informative enough to instruct the non-expert reader and to facilitate information retrieval.
3. The format of the **cover page** is given (below). Term paper should be **hard cover binding** with the cover print same as the cover page.



4. The author must carefully **proofread** the report of the term paper to eliminate grammatical errors, misspellings, and omission of symbols. The text should be directed at a **general readership**, not specialists. Avoid acronyms and jargon, even if they seem of common usage. If unavoidable, define

them in the text. The page number should be given at the centre of the bottom page. The title & chapter running is proffered.

5. **Notation** should be unambiguous, concise, and consistent with standard usage. Introduce new terminology or notation only when clearly needed.
6. There must be an **abstract** of no more than 1500 characters, including spaces, which should be self-contained (no footnotes) for use in abstracting journals and databases. References, comments and replies should not include an abstract.
7. **Acknowledgment page** should be used to recognize named individuals who contributed scientifically to the specific research of the paper, to cite the funding agencies that provided financial support for the work, and to note the affiliation of institutions in the byline with a larger system.
8. The **front matter** should be as follows:

   Recommendation **i** (*page number in roman*)

   (TU Logo, Full name, address of the advisor & co-advisor(s), their signature with statement)

   Acknowledgement **ii** (*page number in roman*)

   (follow guideline text above)

   Evaluation **iii** (*page number in roman*)

   (Full name, position and affiliation of the advisors, head of dept, external, internal examiners, date in AD)

   Abstract **iv** (*page number in roman*)

   (follow guideline text)

   Content **v** (*page number in roman*)
9. The **main matter** should be as follows:

   Chapter 1: Introduction or Background or any terminology that introduces the research work. There should be *general objectives* at the end of chapter 1.

   Chapter 2: Theory related matter or literature review or whatever needed. There should be *specific objectives* at the end of this chapter.

   Chapter 3: Methods or Database or Experimental Design or Algorithm or Region of Interest or whatever needed (depending on the nature of the work)

   Chapter 4: Result and Discussion or whatever needed (depending on the nature of the work)

   Chapter 5: Conclusion or Concluding Remarks & Future work or Future Prospectus

   References (for detail see below)

   Appendix

10. **Size of the report:** The minimum page required is 20 (excluding front matter and appendix).

11. All equations should be clearly **displayed** (*with equation number: chapter number dot equation number*), and not inline text. In the equation, variable should be made *italic*. As an example

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left(a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right) \tag{3.4}$$

The equation and the parameter (or variables or constants) should be described in the text. If needed appropriate references should be cited.

12. **Figures** should be clear (white background) and readable. In the figure, full caption with reference/source (if needed) should be given below the figure. For example:

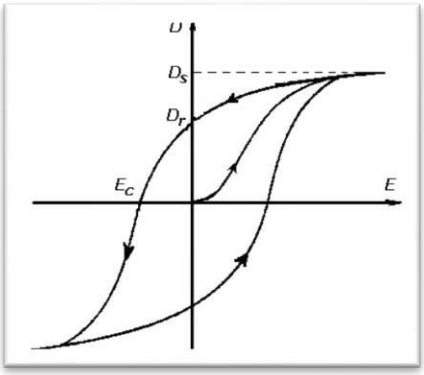


Figure 3.4: Electric displacement field *D* of a ferroelectric material as the electric field *E* is first decreased, then increased. The curves form a hysteresis loop [7].

Here [7] represents the reference from which figure is cited/explained.

13. **Table** should be readable. Table caption (*with table number: chapter number dot table number*) should be given at the top of the table. In the caption, each column should be explained clearly. For an example:

Table 3.4: A list of Galaxies that have Active Galactic Nuclei at their centre. First column lists the name of the galaxy. The next two columns give longitude (***L***) and latitude (***B***) of the galaxy. The last column represents the redshift (***z***) of respective galaxies. [9]

Name	***L***	***B***	***z***
SDSS2349	236.82	27.72	0.0894
SDSS2350	236.86	27.75	0.0889
SDSS2351	236.89	27.85	0.0905
SDSS2352	236.98	27.92	0.0899

14. Reference style

14.1: Text Citation: References in text, should be in the form "**Smith, Doe, and Jones [2]**" or "**……recent experiments [5,6]**". The names of all authors of cited papers should normally be given in the references except when the number of authors is very large (say, more than 10).

14.2: The reference style should be as follows:

[cited number] Authors (first name in abbreviation & full family name), Full title of the article (italic), Journal name (standard abbreviated form), volume number (boldface), Issue Number (if needed), page number, and year (in bracket)

[cited number] Authors (first name in abbreviation & full family name), book title (in italic), editor(s) (if required), publisher, year of publication (in bracket)

[cited number] Authors (first name in abbreviation & family name), title of the research work (Ph.D. or M.Sc. or technical/scientific report – in italic), publisher (University/Institute or any Research Agency), and year of publication (in bracket)

Examples:

[1] C. Oostenbrink, T. A. Soares, N. F. Van der Vegt, and W. F. Van Gunsteren, *Validation of the 53a6 gromos force field*, Eur. Biophys. J., **34**, 4, 273-284, (2005).

[2] H. J. C. Berendsen, J. R. Grigera, and T. P. Straatsma, *The missing term in effective pair potentials*, J. Phys. Chem., **91**, 6269-6271 (1987).

[3] J. M. Smith, *Molecular Dynamics*, Elsevier, New York (1980).

[4] R. Brown, *Charge Density Waves in Solids*, ed: C. Green, *Modern Problems in Condensed Matter Sciences*, North-Holland Amsterdam (1989).

[5] C. Green, *Report No. MAD/PH/650*, University of Wisconsin, Madison (1991).

[6] J. M. Smith, in Proceedings of the *Topical Meeting on CP Violation*, 12-19 December, Calcutta (1990).

[7] S. Paudel, *A New Far Infrared Nebula at -60^o Latitude*, M.Sc. (Physics) Dissertation, Central Department of Physics, Tribhuvan University, Nepal (2013).

Students are encouraged to add DOI if available. DOI should be added in the next line. For example

[1] C. Oostenbrink, T. A. Soares, N. F. Van der Vegt, and W. F. Van Gunsteren, *Validation of the 53a6 gromos force field*, Eur. Biophys. J., **34**, 4, 273-284, (2005).
DOI: 10.1007/s00249-004-0448-6

15. In order to **reproduce** figures, tables, etc., from another journal, authors must show that they have complied with the requirements of the publisher of the other journal, possibly including written agreement of both publisher and author of the originally published work.

This format for should be strictly followed by the M.Sc. (Physics) students for their Term Paper in all campuses, colleges affiliated with Tribhuvan University.

Central Department Research Committee
Central Department of Physics
Tribhuvan University, Kirtipur

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