

ÉCLAT STYLE GUIDE

1 Preamble

Add the following to the preamble of your TeX file:

```
\usepackage{amsmath,amsthm}
\usepackage{amssymb}
\usepackage[hyperfootnotes=false]{hyperref}
\usepackage{abstract}
\usepackage[paperheight=9.5in,paperwidth=7.5in,top=0.75in,bottom=0.5in,left=.75in,right=.75in]{geometry}
\renewcommand{\baselinestretch}{1.1}
\usepackage{newunicodechar}
\usepackage{fancyhdr}
\usepackage{indentfirst}
\usepackage{quotes}
```

The above given packages are **non-exhaustive**. The author may require more (or less) packages as per the needs of the paper.

2 Top Matter

Top matter elements appear on the first page of a paper. In addition to the abstract and keywords, it includes information that would appear in a bibliographic reference to the paper, i.e., how your paper would be presented as a reference in some other paper.

2.1 Title

- In case of multi-line titles, strong preference is to break before any prepositions, articles, or conjunctions, or logically within or around phrases. (Avoid only one word on the last line.)
- The first letter of each word should be capitalised except articles, conjunctions, prepositions etc. (e.g. an, and, behind etc.).
- Acronyms to be stated in full in the title, and no footnotes are allowed in the title.

2.2 Author(s)

- The author line is centered and follows the title. Do not use “et al.” within the author line - all author names must appear here.
- Insert a space between initials, and a period after each initial.
- All names must be separated by commas, except the last two names, which should be separated by “and” only.

- **Insert mentor’s name first**, using appropriate title (e.g., Dr., Mr., Ms. etc.), followed by the names of the student authors in order of seniority. If more than one student belongs to a particular year, then *alphabetical order* is to be followed.

From Discrete to Continuous Networks: An Excursion into Neural Ordinary Differential Equations

Dr. P. Mathur, S. Misra, A. Thouman and M. Varghese

2.3 Abstract

- An abstract must be able to stand alone, independent of the paper as it may appear individually for indexing. The use of first-person pronouns in the abstract is acceptable.
- The text and mathematics of the abstract are treated exactly as in the body of the paper. Ensure that spelling, hyphenation, and other points of style are consistent with the paper.
- The abstract should be **45-60 words** long. It must describe the content of the paper in no more than *four lines*.
- The abstract cannot contain references to bibliography citations or any of the paper’s numbered elements, such as theorems and equations. Cross-references to numbered equations that appear in the body of the paper should be replaced with the full equations.
- Acronyms are to be spelled out on first use. If the acronym does not appear again in the abstract, spell it out and delete the acronym itself. Acronyms defined in the abstract must be *defined again* on first occurrence in the body of the paper.

2.4 Keywords

- Keywords are important words/concepts found in your paper. Thus, it must include the terms and definitions that are fundamental to understanding the content of the paper.
- It is to be written after the last line of the abstract, leaving one line and flushed left.

Abstract

Global Positioning System (GPS) is a satellite-based radio navigation system formed by 24 satellites orbiting the earth and their corresponding receivers on the earth. This utility detects and transmits time and location based information through a GPS receiver, located anywhere on or near the earth’s surface. This paper discusses the mathematics involved in the tracking of a GPS signal.

Keywords: GPS, Pseudo-ranges, Gaussian Elimination

3 End Matter

End matter appears at the end of an article and consists of author details and acknowledgements (if any). Together, they constitute **two** unnumbered sections.

3.1 Author Affiliation

- For student authors, write the full name, name of course, semester, name of college/university - all in **SMALL CAPS** font.
- For the mentor, write the full name, post, department, name of college/university - all in **SMALL CAPS** font

3.2 Email addresses and mentor URLs

- Write the email addresses of the student authors and mentor in **Typewriter** font.
- If a mentor's URL is provided, it appears on a separate line following the email address in **Typewriter** font.

(MENTOR) DR. PRIYA MATHUR, ASSISTANT PROFESSOR, DEPARTMENT OF MATHEMATICS,
LADY SHRI RAM COLLEGE FOR WOMEN, NEW DELHI

priya.mathur@gmail.com

URL: <http://www.intertrust.com/star/goldberg>

SAUMYA MISRA, B.SC.(H) MATHEMATICS, 4TH SEMESTER, LADY SHRI RAM COLLEGE FOR
WOMEN, NEW DELHI

s.misra@gmail.com

AARCIAH THOUMAN, B.SC.(H) MATHEMATICS, 2ND SEMESTER, LADY SHRI RAM COLLEGE FOR
WOMEN, NEW DELHI

aarciah@yahoo.com

MALATHI VARGHESE, B.SC.(H) MATHEMATICS, 2ND SEMESTER, LADY SHRI RAM COLLEGE FOR
WOMEN, NEW DELHI

m.varghese@yahoo.com

- **Write the details of mentor first.** And take extra care that the mentor & author details appear flushed left, since the *indentfirst* package has been used in the paper.

3.3 Acknowledgement

- This is an unnumbered section, occurring *after* the concluding section of the paper and *before* the references.
- Including this in the paper is **optional**. It is recommended that this section be included only if significant help has been received from outside the usual team of the Éclat Editorial Team.

- It is recommended that the acknowledgement be written in the third-person, and not exceeding more than two lines.

ACKNOWLEDGEMENT

The authors thank Dr. M. Paul and Dr. T. Silas for their helpful comments and corrections.

4 Section and Subsection Heads

Section and subsection heads must appear with the specified directions.

4.1 Heading Styles

- The ‘**Introduction**’ section is compulsory, however, the ‘Conclusion’ section is not. Terminology other than “conclusion” may be used for the concluding section, e.g., summary, remarks, concluding remarks, etc.
- For a section heading, use **sentence-style capitalization**: the first letter is capped and the rest are lowercase, unless they are proper nouns. The exceptions to this is when a colon appears within the heading; the first letter after a colon is also capped.
- Section heads are set in SMALL CAPS font. And any math in any head appears in math mode.

3. RESULTS: THE DISCRETE HEISENBERG GROUP

- The text following a section head has a paragraph indent unless it is an enunciation e.g., theorems, lemmas, etc.
- A sub-section head appears flush left and uses sentence-style capitalization, as in a section head. None of the headings should be in bold, and **no period** (i.e., no full stop) is required at the end of any, unless necessary.

4.1 Basic equations and Fredholm’s equations ([3])

Theorem 2.1. *[The text continues in paragraph form and italics since this example is a theorem.]*

- **No citations allowed in a section head.** If a reference is cited within the a sub-section head, it appears at the end of the head, within parentheses and before the period in roman text.
- A third level of section head, a subsection head, is allowed. The text is run in after this head.

2.2.1 Stress intensity factors of Theorem 3.7 ([27]). [The text continues in paragraph form.]

4.2 Text Callouts

- Spell out citations to sections in full (e.g., Section 7.1) since they are proper nouns. Abbreviated forms (e.g., Sec. 7.1) are not allowed.
- Two or more sections are cited in text as “see Sections 2.3 and 4.2” or “see Sections 2.3, 4.2, and 4.3”, not as “see Section 2.3 and Section 2.4” or “see Section 2.3, Section 4.2, and Section 4.3”, respectively.

5 Enunciation

There are four general enunciation categories — theorems, proofs, definitions, and remarks — which form the basis for all of our enunciation styles. Most often, these are numbered, in which case we refer to them as *enumerated elements*. If a paper has very few of these, they need not be numbered.

5.1 Theorem Style

- Theorems include the following enunciation style:
Theorem heading: title and number **bold**. Theorem text: *italic*.
Theorems are set flush left.
- The theorem style includes the following enunciations:

Algorithm	Assertion	Hypothesis
Corollary	Criterion	Conjecture
Proposition	Axiom	Lemma

- Spell out numbered theorem-style enunciations in full (e.g., Theorem 2.1) since they are proper nouns. Abbreviated forms (e.g., Thm. 2.1) are not allowed except when cited as part of a reference (e.g., [11, Thm. 2.1]).
- It is *strongly preferred* that theorems, corollaries, lemmas and other results are **cited**.
- **As a general rule, theorems, corollaries, lemmas and other results which are rare or not taught at the undergraduate level must be cited.** If the theorem, corollary, lemma, or result is common or generally known (to an undergraduate reader), the author may decide upon matters of citation.

Theorem 2.1. *Let F be a field and $f(x)$ a non-constant polynomial in $F(x)$. Then there is an extension field E of F in which $f(x)$ has a zero ([3]).*

5.2 Proof Style

- Proofs follow the following enunciation style:
Heading: title *italic* and number roman (if any). Text: roman.
Proofs are set flush left.
- Proofs commonly end with an open square box (a QED box), which is flush right at the end of the last line of the proof. The QED box may land flush right on a separate line if it follows a full line of text, a display, or a list.

Proof. Observe that $[GF(p)(a) : GF(p)] = [GF(p^n) : GF(p)] = n$. □

5.3 Definition Style

- Definitions follow the following enunciation style:
Heading: title and number **bold**. Text: roman.
Definitions are set flush left.
- The definition style includes the following enunciations:

Discussion	Question	Fact
Property	Assumption	Terminology
Application	Exercise	Convention
Example	Condition	Problem

- Spell out numbered definition-style enunciations in full (e.g., Definition 2.1) since they are proper nouns. Abbreviated forms (e.g., Def. 2.1) are not allowed except when cited as part of a reference (e.g., [11, Def. 2.1]).

Definition 3.3. A *partition* of a non-empty set S is a collection of one or more subsets of S such that each element of S belongs to precisely one subset ([5]).

5.4 Remark Style

- Remarks follow the following enunciation style:
Heading: title *italic* and number roman. Text: roman.
Remarks are set flush left.
- The remark style includes the following enunciations:

Answer	Step	Claim
Conclusion	Case	Observation
Subcase	Notation	Comment
Note	Summary	

- Spell out numbered remark-style enunciations in full (e.g., Remark 2.1) since they are proper nouns. Abbreviated forms (e.g., Rem. 2.1) are not allowed except when cited as part of a reference (e.g., [11, Rem. 2.1]).

Remark 2.4. Besides the infinitely many cases of two-bridge knots listed in Theorem 1.2, explicit calculations seem to confirm Theorem 1.1.

5.5 Writing Equations

- **Only cited equations to be numbered.** Moreover, cited equations to be numbered in the Hindu–Arabic numeral system.

6 Tables

When working with tables, their numbering, cross-references, caption-placement and punctuation all need to be reviewed for style consistency.

6.1 Numbering

- Tables should be numbered within sections and should appear within the appropriate section, e.g., Table 4.8 falls within section 4.
- Hyphens in section-numbered tables (e.g., Table 8-1) are not acceptable. And, check that nowhere has a table been labelled as a figure.

6.2 Captions

- A caption consists of two parts - the numbered enunciation and any text that follows it. The numbered enunciation is of the form Table 7 or Table 1.6. End punctuation is only required when a caption is a full sentence - not for short descriptive phrases.
- Table caption appears **centered above** the table, and it must also include the source.

Table 4: Return rates on online ad-auctions; (source: https://www.ams.org/display/981022.pdf)

- If the table has been created by the author, the software used may be mentioned.

Table 1.3: Comparative performance of root-finding methods for $f(x)$ tabulated on Microsoft Excel
--

6.3 Table placement and text callouts

- **All tables must be cited**, and are generally placed near where they are first cited.
- Tables should always be cited in full (e.g., Table 3). Abbreviated forms (e.g., Tab. 3) are not allowed. In-text callouts to numbered tables appearing as, e.g., “in the table above” or “in the table below” must be changed to, e.g., “in Table 3.4”.
- Numbered tables never appear mid-paragraph. However, *small unnumbered* tables may appear within paragraphs, if these are part of the surrounding text and cannot be separated out.

6.4 Sizing and altering tables

- Text within a table should be edited in accordance with the content of the paper. In case of long tables, ensure that it fits in the text block and does not break across pages.

7 Figures

When working with figures, their numbering, cross-references, caption-placement and punctuation all need to be reviewed for style consistency.

7.1 Numbering

- Figures should be numbered independently of other numbered enunciations, including tables.
- Figures should be numbered within sections and should appear within the appropriate section, e.g., Figure 4.8 falls within section 4.
- Hyphens in section-numbered figures (e.g., Figure 7-1) is not acceptable. And, check that nowhere has a figure been labelled as a table.

7.2 Captions

- A caption consists of two parts - the numbered enunciation and any text that follows it. The numbered enunciation is of the form *Figure 7*. End punctuation is only required when a caption is a full sentence - not for short descriptive phrases.
- The caption of the figure always appears **centered under** the figure.

Figure 2: Maryam receives the Fields Medal; (source: <https://news/article-4699868.html>)

- If the figure has been drawn by the author, the software used may be mentioned.

Figure 3.3: Graphical representations of geometrical sequences drawn in Adobe Photoshop

7.3 Figure placement and text callouts

- **All figures must be cited**, and are generally placed near where they are first cited. Authors may refrain from citing image of persons, or any other picture/diagram/figure that does not need citing.
- Figures should always be cited in full (e.g., Figure 3). Abbreviated forms (e.g., Fig. 3) are not allowed. In-text callouts to numbered figures appearing as, e.g., “in the figure above” or “in the figure below” must be changed to, e.g., “in Figure 3.4”.
- Numbered figures never appear mid-paragraph. However, *unnumbered* figures may appear within sentences or mid-paragraph, if these are part of the surrounding text and cannot be separated out.

7.4 Sizing and altering figures

- Figures should be sized to ensure they fit within the text block.

8 Footnotes

Here is a list of characteristics for footnotes in Éclat.

- A footnote callout is placed *after* the word or phrase to which it refers, or it is placed *after* internal and end punctuation.
- If the author has cited a footnote within a mathematical expression, the callout could cause confusion with superscripts. If a footnote symbol can be mistaken for a mathematically pertinent superscript, then move the callout to the end of the text preceding the displayed mathematics.
- Equations and other mathematical material in footnotes are allowed; set these as compactly as possible.
- If a footnote is actually a reference, move it to the References section and replace the footnote citation with a reference citation.

9 References

Here is a list of reference checking and reference citation in Éclat.

9.1 Reference Checking

The format for different sources is as follows:

- **For books**, author name (last name first, first name in initials separated by periods), book name (in *italics*), book edition, publisher name, year of publishing, page numbers cited.
- **For journal article**, author name (last name first, first name in initials separated by periods), article name (in *italics*), journal name, volume of journal, year/quarter of publishing, page numbers cited.
- **For an entire website**, author or compiler name - if available (last name first, first name initials separated by periods), name of site (in *italics*), version number (if available), name of institution/organization affiliated with the site (sponsor or publisher), date of resource creation (if available), DOI (preferred) otherwise include a URL or permalink.
- **For individual page(s) on a website**, author or compiler name - if available (last name first, first name initials separated by periods), name of specific page or article being referenced (usually in header), name of website (in *italics*), version number of website (if available), name of institution/organization affiliated with the site (sponsor or publisher), date of resource creation (if available), DOI (preferred) otherwise include a URL or permalink.
- **The order of references must follow the order - book, journal, website/webpage. References within each category must be in alphabetical order.**
- For books, alphabetical order of book names (not authors) to be followed. For journals, alphabetical order of journal names (only) to be followed. For websites/webpage, alphabetical order of site names (usually occurring after “www.”) to be followed.

9.2 Reference Citation

- **All references must be cited in the paper.** The reference citations within the text must exactly match what appears in the reference section.
- **Manual referencing and manual citation are not allowed.** Manual referencing of equations, figures, tables, etc. are not allowed. Use LaTeX commands for referencing and citations.
- Reference citations can be enumerated with a number within brackets, e.g., [1], [2], **before the period mark.**
- In case of more than two citations in the same line, separate them by commas e.g. [1],[2],[5].
- If an author needs to cite something specific within a referenced work, that information is **appended to the citation** and is kept within the brackets, e.g., [1, Thm. 3.9]. In this example, the use of “Thm.” is allowed because it is part of the citation.

In the following example, two books, two journals, one website and two webpages have been shown. In each category, viz. book, journal, website/webpage, the references have been written in alphabetical order.

References

- [1] Gallian A. J., *Contemporary Abstract Algebra*, University of Minnesota, 4th edition, Houghton Mifflin Company, 1998, pp. 105-111.
- [2] Blake I., Seroussi G. and Smart N. P., *Elliptical curves in cryptography*, Cambridge University Press, 1999, pp. 328-333.
- [3] Mirzakhani M., *A simple proof of a theorem of Schur*, American Mathematical Monthly, Volume 2, Issue 3, 1998, pp. 260-262.
- [4] Agarwal N., Shah R. and Venkataraman G., Maryam Mirzakhani, *The Master Artist of Curved Surfaces*, Resonance, Volume 23, Issue 3, March 2018, pp. 253-262.
- [5] Moler C. and Zeroin, Part 1: Dekker’s Algorithm, *MathWorks*, October 12, 2015, <https://blogs.mathworks.com/cleve/2015/10/12/zeroin-part-1-dekkers-algorithm>.
- [6] *MIT OpenCourseWare*, Massachusetts Institute of Technology, <https://ocw.mit.edu/index.htm>.
- [7] Tao T., Notes 2: Decoupling theory, *Terence Tao*, 13th April, 2020, <https://terrytao.wordpress.com/2020/04/13/247b-notes-2-decoupling-theory/>.