# 专业硕士学位论文


中国海洋大學

OCEAN UNIVERSITY OF CHINA

## 中国海洋大学本科、硕士、博士论文

## 模板范例

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A dissertation for master's degree


# An Example of OUC Thesis Template for Bachelor, Master and Doctor

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# ABSTRACT

This is a sample document of ouc thesis LaTeX template for bachelor, master and doctor. The template is created by Tyrone Zeka, which orignate from the template created by zepinglee. The template meets the requirements of ouc thesis writing standards.

This document will show the usage of basic commands provided by LaTeX and some features provided by the template. For more information, please refer to the template document oucthesis.pdf.

**Key Words**: Ocean University of China (ouc); Thesis; LaTeX Template; Bachelor; Master; PhD

# Contents

# Chapter 1 Introduction

## 1.1 Research Background

In recent years, X has attracted increasing attention due to its wide applications in Y. However, existing methods still face challenges such as Z and limited scalability.

## 1.2 Research Objectives and Scope

The purpose of this study is to develop an improved framework that addresses these issues by combining A and B techniques.

## 1.3 Research Methods

This research adopts both theoretical analysis and experimental validation. Data were collected from multiple sources to ensure reliability.

## 1.4 Thesis Structure

The remainder of this thesis is organized as follows: Chapter **??** reviews related work; Chapter **??** introduces the proposed approach; Chapter **??** presents experiments and results; and Chapter **??** concludes the thesis and suggests future work.

# Chapter 2 Mathematics and Formulae

## 2.1 Mathematical Symbols

The template defines some upright mathematical symbols:

| Symbol | 命令 |
|---|---|
| Euler's Numbere | `\eu` |
| plural unitsi | `\iu` |
| diffd | `\diff` |
| $\arg\max$ | `\argmax` |
| $\arg\min$ | `\argmin` |

Examples：

$$\mathrm{e}^{\mathrm{i}\pi} + 1 = 0 \tag{2.1}$$

$$\frac{\mathrm{d}^2 u}{\mathrm{d}t^2} = \int f(x)\,\mathrm{d}x \tag{2.2}$$

$$\arg\min_{x} f(x) \tag{2.3}$$

## 2.2 Theorems and Proof

**Definition 2.1** If the integral of function $f$ is measurable and non-negative, we define its (extended) **Lebesgue integral** by

$$\int f = \sup_{g} \int g, \tag{2.4}$$

where the supremum is taken over all measurable functions $g$ such that $0 \leqslant g \leqslant f$, and where $g$ is bounded and supported on a set of finite measure.

**Example 2.1** Simple examples of functions on $\mathbb{R}^d$ that are integrable (or non-integrable) are given by

$$f_a(x) = \begin{cases} |x|^{-a} & \text{if } |x| \leqslant 1, \\ 0 & \text{if } x > 1. \end{cases} \tag{2.5}$$

$$F_a(x) = \frac{1}{1+|x|^a}, \qquad \text{all } x \in \mathbb{R}^d. \tag{2.6}$$

Then $f_a$ is integrable exactly when $a < d$, while $F_a$ is integrable exactly when $a > d$.

**Lemma 2.1** (Fatou) Suppose $\{f_n\}$ is a sequence of measurable functions with $f_n \geqslant 0$. If $\lim_{n\to\infty} f_n(x) = f(x)$ for a.e. $x$, then

$$\int f \leqslant \liminf_{n\to\infty} \int f_n. \tag{2.7}$$

**Remark** We do not exclude the cases $\int f = \infty$, or $\liminf_{n\to\infty} f_n = \infty$.

**Corollary 2.2** Suppose $f$ is a non-negative measurable function, and $\{f_n\}$ a sequence of non-negative measurable functions with $f_n(x) \leqslant f(x)$ and $f_n(x) \to f(x)$ for almost every $x$. Then

$$\lim_{n\to\infty} \int f_n = \int f. \tag{2.8}$$

**Proposition 2.3** Suppose $f$ is integrable on $\mathbb{R}^d$. Then for every $\epsilon > 0$:

i. There exists a set of finite measure $B$ (a ball, for example) such that

$$\int_{B^c} |f| < \epsilon. \tag{2.9}$$

ii. There is a $\delta > 0$ such that

$$\int_E |f| < \epsilon \qquad \text{whenever } m(E) < \delta. \tag{2.10}$$

**Theorem 2.4** Suppose $\{f_n\}$ is a sequence of measurable functions such that $f_n(x) \to f(x)$ a.e. $x$, as $n$ tends to infinity. If $|f_n(x)| \leqslant g(x)$, where $g$ is integrable, then

$$\int |f_n - f| \to 0 \qquad \text{as } n \to \infty, \tag{2.11}$$

and consequently

$$\int f_n \to \int f \qquad \text{as } n \to \infty. \tag{2.12}$$

**Proof** Trivial. □

## 2.3 Customizable

**Axiom of choice** Suppose $E$ is a set and $E_\alpha$ is a collection of non-empty subsets of $E$. Then there is a function $\alpha \mapsto x_\alpha$ (a "choice function") such that

$$x_\alpha \in E_\alpha, \qquad \text{for all } \alpha. \tag{2.13}$$

**Observation 1** Suppose a partially ordered set $P$ has the property that every chain has an upper bound in $P$. Then the set $P$ contains at least one maximal element.

**A concise proof** Obvious. □

# Chapter 3 Floating Elements

## 3.1 Three-Line Tables

The three-line table format is the recommended style in the *Writing Manual*, as shown in Table 3.1.

**Table 3.1 Caption of the table goes here**

| Operating System | TeX Distribution |
|---|---|
| All Platforms | TeX Live |
| macOS | MacTeX |
| Windows | MikTeX |

**Notes**: This is a very long table note that demonstrates how lengthy footnotes can be displayed properly within a table.

## 3.2 Long Tables

Tables that span more than one page should use the dedicated `longtable` environment (see Table 3.2).

**Table 3.2 Demonstration of Long Table**

| Name | Description | Remarks |
|---|---|---|
| AAAAAAAAAAA | BBBBBBBBBB | CCCCCCCCCCCCC |
| AAAAAAAAAAA | BBBBBBBBBB | CCCCCCCCCCCCC |
| AAAAAAAAAAA | BBBBBBBBBB | CCCCCCCCCCCCC |
| (Repeated rows omitted for brevity) | | |

## 3.3 Figures

Some authors prefer to reference figures and tables by relative position (e.g., “the figure below” or “the table above”) and insist that floats be placed exactly where they are mentioned. In fact, this is not recommended because it can easily create large areas of

blank space in the text. In academic writing, the standard way is to refer to elements by their numbers, such as “Figure 3.1” and “Table 3.1”.


**Fig. 3.1 Sample Figure**

For more examples of figures and graphics, many papers on arXiv provide their TEX source files, which can be studied for reference.

## 3.4 Algorithm Environment

The `algorithm2e` package is used in this template to typeset algorithms. For detailed usage, please refer to the official documentation of the package.

**Data:** this text
**Result:** how to write algorithm with LATEX2e
initialization;
**while** *not at end of this document* **do**
    read current;
    **if** *understand* **then**
        go to next section;
        current section becomes this one;
    **else**
        go back to the beginning of current section;
    **end**
**end**

**Algorithm 3.1:** Example Algorithm 1

Note that algorithms can be included in the thesis, but inserting large blocks of raw code is generally unwise. However, if code must be shown, the listings package is recommended for that purpose.

# Chapter 4 Citation Anotation Methods

## 4.1 Numerical Citation System

### 4.1.1. Superscript Method

| | | |
|---|---|---|
| `\cite{knuth86a}` | ⇒ | [1] |
| `\citet{knuth86a}` | ⇒ | Knuth[1] |
| `\citet[chap.~2]{knuth86a}` | ⇒ | Knuth[1]chap. 2 |
| `\citep{knuth86a}` | ⇒ | [1] |
| `\citep[chap.~2]{knuth86a}` | ⇒ | [1]chap. 2 |
| `\citep[see][]{knuth86a}` | ⇒ | see[1] |
| `\citep[see][chap.~2]{knuth86a}` | ⇒ | see[1]chap. 2 |
| `\citet*{knuth86a}` | ⇒ | Knuth[1] |
| `\citep*{knuth86a}` | ⇒ | [1] |
| `\citet{knuth86a,tlc2}` | ⇒ | Knuth[1], Mittelbach et al.[2] |
| `\citep{knuth86a,tlc2}` | ⇒ | [1,2] |
| `\cite{knuth86a,knuth84}` | ⇒ | [1,3] |
| `\citet{knuth86a,knuth84}` | ⇒ | Knuth[1,3] |
| `\citep{knuth86a,knuth84}` | ⇒ | [1,3] |
| `\cite{knuth86a,knuth84,tlc2}` | ⇒ | [1–3] |

### 4.1.2. Numbers

| | | |
|---|---|---|
| `\cite{knuth86a}` | ⇒ | [1] |
| `\citet{knuth86a}` | ⇒ | Knuth [1] |
| `\citet[chap.~2]{knuth86a}` | ⇒ | Knuth [1]chap. 2 |
| `\citep{knuth86a}` | ⇒ | [1] |
| `\citep[chap.~2]{knuth86a}` | ⇒ | [1]chap. 2 |
| `\citep[see][]{knuth86a}` | ⇒ | [see 1] |
| `\citep[see][chap.~2]{knuth86a}` | ⇒ | [see 1]chap. 2 |
| `\citet*{knuth86a}` | ⇒ | Knuth [1] |
| `\citep*{knuth86a}` | ⇒ | [1] |

`\citet{knuth86a,tlc2}` ⇒ Knuth [1], Mittelbach et al. [2]
`\citep{knuth86a,tlc2}` ⇒ [1, 2]
`\cite{knuth86a,knuth84}` ⇒ [1, 3]
`\citet{knuth86a,knuth84}` ⇒ Knuth [1, 3]
`\citep{knuth86a,knuth84}` ⇒ [1, 3]
`\cite{knuth86a,knuth84,tlc2}` ⇒ [1–3]

## 4.2 Author-Year

`\cite{knuth86a}` ⇒ Knuth (1986)
`\citet{knuth86a}` ⇒ Knuth (1986)
`\citet[chap.~2]{knuth86a}` ⇒ Knuth (1986)[chap. 2]
`\citep{knuth86a}` ⇒ (Knuth, 1986)
`\citep[chap.~2]{knuth86a}` ⇒ (Knuth, 1986)[chap. 2]
`\citep[see][]{knuth86a}` ⇒ (see Knuth, 1986)
`\citep[see][chap.~2]{knuth86a}` ⇒ (see Knuth, 1986)[chap. 2]
`\citet*{knuth86a}` ⇒ Knuth (1986)
`\citep*{knuth86a}` ⇒ (Knuth, 1986)
`\citet{knuth86a,tlc2}` ⇒ Knuth (1986); Mittelbach et al. (2004)
`\citep{knuth86a,tlc2}` ⇒ (Knuth, 1986; Mittelbach et al., 2004)
`\cite{knuth86a,knuth84}` ⇒ Knuth (1986, 1984)
`\citet{knuth86a,knuth84}` ⇒ Knuth (1986, 1984)
`\citep{knuth86a,knuth84}` ⇒ (Knuth, 1986, 1984)

## 4.3 Author-Year(no parentheses)

`\citealt{tlc2}` ⇒ Mittelbach et al. 2004
`\citealt*{tlc2}` ⇒ Mittelbach, Goossens, Braams, and Carlisle 2004
`\citealp{tlc2}` ⇒ Mittelbach et al., 2004
`\citealp*{tlc2}` ⇒ Mittelbach, Goossens, Braams, and Carlisle, 2004
`\citealp{tlc2,knuth86a}` ⇒ Knuth, 1986; Mittelbach et al., 2004
`\citealp[pg.~32]{tlc2}` ⇒ Mittelbach et al., 2004[pg. 32]
`\citenum{tlc2}` ⇒ 2
`\citetext{priv.\ comm.}` ⇒ (priv. comm.)

| | | |
|---|---|---|
| `\citeauthor{tlc2}` | ⇒ | Mittelbach et al. |
| `\citeauthor*{tlc2}` | ⇒ | Mittelbach, Goossens, Braams, and Carlisle |
| `\citeyear{tlc2}` | ⇒ | 2004 |
| `\citeyearpar{tlc2}` | ⇒ | 2004 |

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# Appendix A Thesis Formatting Guidelines

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# Publications

## Published Papers

1. Tyrone Zeka, et. all; This Awesome Paper, Some awesome journal, 2025
2. A A A A A A A A A

## Papers to be published

1. A A A A A A A A A
2. A A A A A A A A A

## Thesis Reports

1. A A A A A A A A A
2. A A A A A A A A A