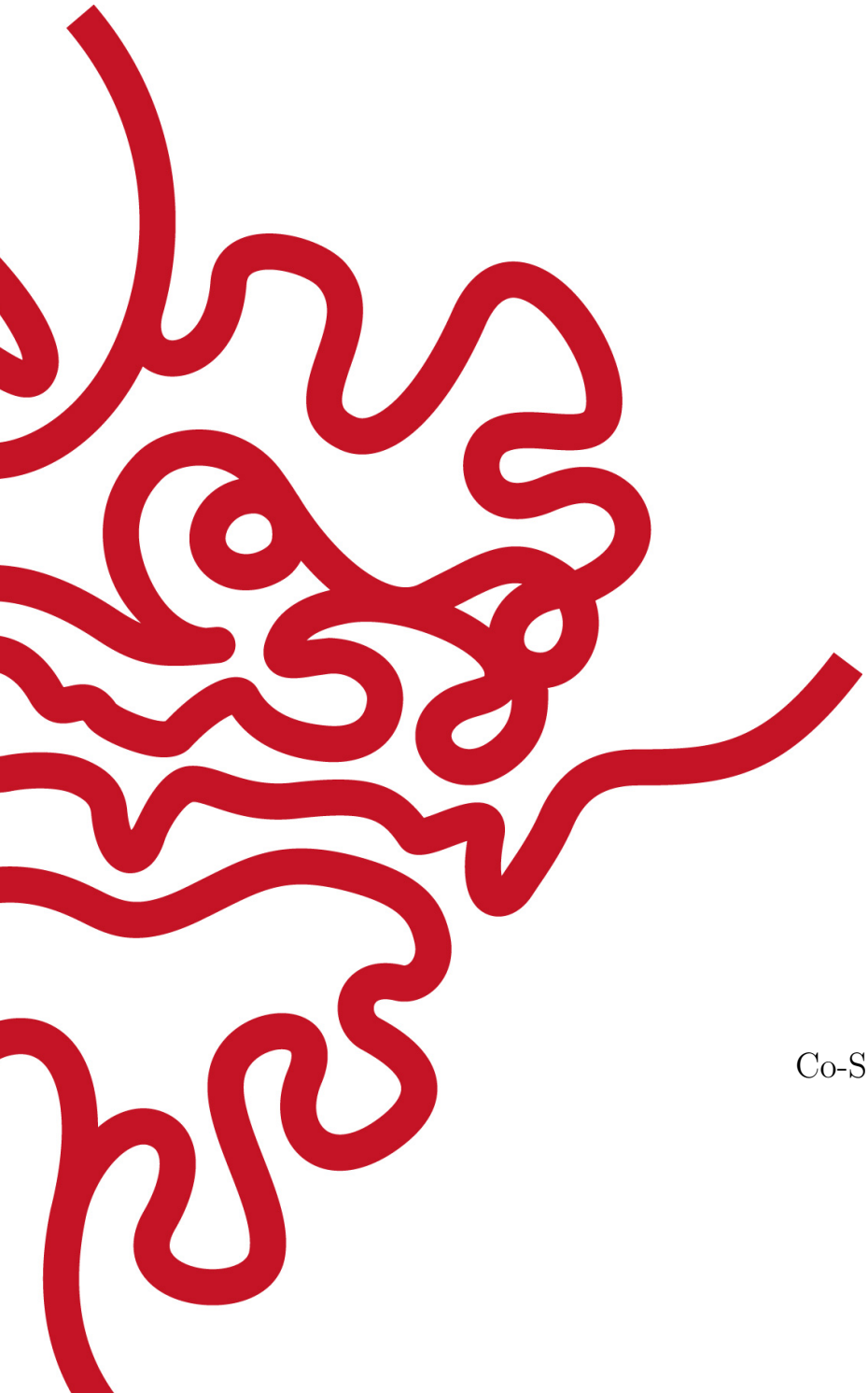
Okinawa Institute of Science and Technology
Graduate University

Thesis submitted for the degree

Doctor of Philosophy

# LaTeX Thesis Template



by

**Jeremie Gillet**

Supervisor: **S. Upervisor**
Co-Supervisor: **C. O'Supervisor**

March 2018

# Declaration of Original and Sole Authorship

I, Jeremie Gillet, declare that this thesis entitled *LaTeX Thesis Template* and the data presented in it are original and my own work.

I confirm that:

- No part of this work has previously been submitted for a degree at this or any other university.
- References to the work of others have been clearly acknowledged. Quotations from the work of others have been clearly indicated, and attributed to them.
- In cases where others have contributed to part of this work, such contribution has been clearly acknowledged and distinguished from my own work.
- None of this work has been previously published elsewhere, with the exception of the following: (provide list of publications or presentations, or delete this part). (If the work of any co-authors appears in this thesis, authorization such as a release or signed waiver from all affected co-authors must be obtained prior to publishing the thesis. If so, attach copies of this authorization to your initial and final submitted versions, as a separate document for retention by the Graduate School, and indicate on this page that such authorization has been obtained).

Date: March 2018

Signature: **You may include here an image with a scan of your signature.**

# Abstract


## LaTeX Thesis Template

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# Acknowledgment

Theses must acknowledge assistance received in any of the following areas:

- research design
- research execution
- data analysis
- data or research interpretation
- writing, proofreading, or copyediting of the manuscript

# Abbreviations

All abbreviations used in the thesis must be listed, with their definitions, in alphabetical order. This includes trivial and commonly used abbreviations, at your discretion, but not words that have entered into general English usage (laser, for example, or DNA). In particular, non-standard abbreviations should be presented.

| | |
|---|---|
| PPT | positive partial transpose |
| SRPT | Schrödinger-Robertson partial transpose |

# Glossary

A glossary of specialized terms should be included, as necessary.

| | |
|---|---|
| Dipole Blockade | Phenomenon in which the simultaneous excitation of two atoms is inhibited by their dipolar interaction. |
| Cavity Induced Transparency | Phenomenon in which a cavity containing two atoms excited with light at a frequency halfway between the atomic frequencies contains the number of photons an empty cavity would contain. |

# Nomenclature

Details of specialized nomenclature should be included, as necessary.

| | |
|---|---|
| $c$ | Speed of light ($2.997\ 924\ 58 \times 10^{8}$ ms$^{-1}$) |
| $\hbar$ | Planck constant ($1.054\ 572\ 66 \times 10^{-34}$ Js) |
| $k_B$ | Boltzmann constant ($1.380\ 658 \times 10^{-23}$ JK$^{-1}$) |
| $Z_0$ | Impedance of free space ($376.730\ 313\ 461\ \Omega$) |
| $\mu_0$ | Permeability of free-space ($4\pi \times 10^{-7}$ Hm$^{-1}$) |

If desired, an optional and short dedication may be included here.

# Contents

# List of Figures

# List of Tables

# Introduction

This is the introduction. You might want to leave it unnumbered, as it is now. If you want to number it, treat it like any other chapter.

# Chapter 1

# Guidelines on the preparation of theses

The guidelines below set out the organization and formatting requirements of the OIST PhD thesis, in order to assist students in the preparation of theses for submission.

The academic requirements of the thesis are defined in the Academic Program Policies that you can find here: `https://groups.oist.jp/grad/academic-program-policies`. Please always refer to the website for the latest updates in the guidelines as there may be a delay in updating the guidelines in this template.

This particular documents refers specifically a thesis written in LaTeX. As such, some points from the full guideline (for example page sizes) are not referenced directly here as they are already defined in this template. Some other points concerning specific pages (for example the abstract) are described in the specific pages themselves in this PDF.

## 1.1 Guidelines on the preparation of theses

**Plagiarism and Fraud**: Students are reminded that they must take all necessary precautions to avoid plagiarism and fraudulent misrepresentation of data. The Graduate School conducts plagiarism checks on all submitted theses, and may require rewriting if present. When submitting a thesis by dissertation, students should avoid self-plagiarism through rewriting earlier published work and/or self-citation.

**Reproducibility**: OIST is committed to openness in science. A cornerstone of this philosophy is reproducibility. Your thesis should present all data and methods necessary to allow complete repetition of the experiments and their results, and to allow expert review of your analysis of data. Accordingly, you must ensure that your methods are comprehensive, and that your data sets and code are available for subsequent review by lodging them in the OIST Institutional Repository or some other data repository or database, as appropriate.

**Inclusion of Published Material**: In some cases, inclusion of published material as chapters is desirable. Normally, however, when published material is included in the thesis, it should be modified in order to remove redundancy and achieve a coherent narrative. It is essential to indicate clearly any portion of the thesis that duplicates parts of articles that were previously published by the candidate. The candidate must cite the article and indicate any parts of a section or chapter of the thesis that depend on the previously published article. This does not apply to previous documents such as thesis proposals and reports written as part of the candidate's research.

An appropriate level of independence on the part of the student is expected. If parts of the thesis are based on published work under joint authorship, the supervisor should provide a statement about the extent to which this is the candidate's own work as part of the standard supervisor declaration.

When including material from publications in a thesis, students should be aware of the copyright policies of journals. It is recommended that students request journals to vary their normal copyright agreements to allow material from an article to be included in a thesis (as the thesis will be publicly available through the University's library). If, for copyright reasons, material from previously published papers may not be included in the electronically published thesis, the electronically published thesis may cite papers that are already published.

## 1.2 Organization of chapters and sections

**Title Page**: This page is the first printed page.

**Choice of Title**: Select a descriptive and unique title that clearly communicates your research. Avoid brief or misleading titles. The title will be displayed on your graduation testamur. The title should be unique within OIST, to distinguish your thesis from those of others working on similar subject.

**Declaration of Original Authorship**: Students must provide a signed declaration that the thesis is their own work and is original.

**Co-authorship**: Co-authorship is not allowed in an OIST PhD thesis. All research and analysis is to be the student's own work. Where co-authors have contributed to papers arising from the research, this data should not be included unless essential to the scientific narrative. When included, full disclosure of the contribution is required. Any and all work conducted by others, either internal or external to OIST, must be acknowledged.

**Abstract, Acknowledgements, List of Abbreviations, Glossary, Nomenclature, Dedication, Table of Contents, List of Figures and Tables**: Those are commented directly in the template. Glossary, Nomenclature, and Dedication pages are optional.

**Main body**: The main body of text may be arranged as a single body of material, divided into subsections of Introduction (including a statement of the problem to be investigated), Methods, Results, Discussions, or, if preferred, in chapters that each deal with a smaller part of the research, each itself divided into subchapters as above.

**Bibliography**: A complete list of all articles and books cited within the thesis, once only, at the end of the thesis. Citations should provide the title of the reference, and list at least the first three authors (et al. format is acceptable). Articles not cited within the thesis should not be included.

**Appendices**: As required. Unlike a journal article, no data or discussion may be presented separately as unpublished supplementary documents or data. Appendices should

be used instead for material that is tangentially relevant to the thesis but does not belong in the main narrative. If reference is needed to large volumes of data that cannot be printed (for example, an annotated genome, or a simulation including moving images), the data should be located on an OIST repository or public database and the URL of the dataset provided in the thesis.

## 1.3 Formatting Requirements

**Page size, Margins, Spacing, Justification, Pagination, Header, Fonts**: those are already built-in the template. Do not modify them.

**Equations**: Equations are considered part of the main text. As such, they should be formatted consistently throughout the thesis, following the advice of the Thesis Supervisor. Equations should be numbered to the right-hand margin.

**Spelling**: American spelling.

**Colors**: Color may be used in images and charts where necessary to enhance comprehension, but not for normal text or headings. The combination of red and green for binary images should be avoided to assist those who have difficulty in discerning hues. All text should be in black unless color-coding is necessary for meaning or contrast.

**Figues, Tables, Images**: Those are detailed in a later Chapter with examples.

**Word length**: No minimum word length is imposed on OIST theses. However, students must be concise in language and succinct in expression. The average length of a PhD thesis will vary between fields and between authors, but typical PhD theses are 100-400 pages in length (20,000-80,000 words of main body text).

**Citations**: All papers cited in the thesis must be referenced in a style relevant to the student's field. All referencing must include the full title, authors, reference location and the year of publication, all in the same style for all references. Citation style must be consistent throughout the thesis. Reference manager software, such as Endnote, or BibTex which offers similar functionality with LaTeX, may be used.

Citing one reference can be done like so: [3] and multiple references in one go like so [1, 2, 4].

**Editing**: The thesis must be entirely the work of the student. Minimal editing may be provided by the Thesis Supervisor(s) or peers, but only as a review of initial drafts. Assistance should not be sought from OIST internal or paid external editing services unless directed to do so by the Dean of Graduate School in revision stages.

# Chapter 2

# How to use the templates

This is a practical guide into how to use this template, by explaining the role of the different folders, and an option of `\documentclass{oist_thesis}`, which accepts either `temporary` or `final`.

## 2.1 Folders

The main folder contains three folders detailed here:

- **Images.** This folder should contain all the images that you will use in your thesis. It can contain subfolders, for example one for each chapter. To include an image from the main text, use something like `\includegraphics{subfolder/image.jpg}` without worrying about the `Images` path.

- **MainText.** This folder contains a series of LaTeX files that form the main text: introduction, chapters, conclusion, appendices and published articles. The introduction and conclusion as they are now are not numbered, which creates a few difficulties with the headers of the thesis. Those are solved by including the commands `\unnumberedchapter{}` and `\numberedchapter` before including the files in `xxx_Thesis.tex`. If you want the introduction and conclusion to be numbered, re-write and treat them as regular chapters.

- **Preamble.** This folder contains a series of LaTeX files with the pages that will appear before the main text. Please write (or copy and paste) your own text in those files and delete the dummy text when appropriate. The files are:
  - `abbreviations.tex` — List of abbreviations. If the list goes over one page, create another table.
  - `abstract.tex` — Abstract. Follow directions in the file.
  - `acknowledgments.tex` — Acknowledgments. Follow directions in the file.
  - `declaration.tex` — Declaration of Original and Sole Authorship. Only modify the last item. This page needs to be signed once printed.
  - `dedication.tex` — Dedication (optional). Should only be a very few lines.
  - `glossary.tex` — Glossary (optional). If the list goes over one page, create another table.
  - `nomenclature.tex` — Nomenclature (optional). If the list goes over one page, create another table.
  - `physics_bibstyle.bst` — Bibliography style file modified by Jeremie Gillet in 2011 to suit his thesis. Might be suitable for physics. If you want to use another custom bibliography style, include the file in this folder.
  - `Thesis_bibliography.bib` — BibTeX file containing your bibliography.

## 2.2 Thesis.tex

This is the main file, the only one that needs to be compiled to build the thesis. Compile once with LaTeX, once with BibTeX and finally twice with LaTeX to get all the references right. At the top of this file, you can see `\documentclass[temporary]{oist_thesis}`. When you submit a temporary version to the graduate school, do not modify it. When you submit a final version, use `\documentclass[final]{oist_thesis}` instead.

Let's go through each section and comment them briefly. The last section will emphasize the differences between options `\documentclass[temporary]{oist_thesis}` and `\documentclass[final]{oist_thesis}`.

### 2.2.1 PACKAGES AND OTHER DOCUMENT CONFIGURATIONS

This section contains the minimum number of packages and definitions to compile the thesis. No line should be removed or modified.

### 2.2.2 ADD YOUR CUSTOM VALUES, COMMANDS AND PACKAGES

This section should not be modified directly. Instead, your packages and definitions should be included in `Preamble/mydefinitions.tex`.

### 2.2.3 TITLE PAGE

Creates the title page. Do not modify.

### 2.2.4 PREAMBLE PAGES

Structures the style (header) for the preamble pages and builds them. Do not modify, except for deleting the optional preambles you might not want to include.

### 2.2.5 LIST OF CONTENTS/FIGURES/TABLES

Creates the different lists. Do not modify.

### 2.2.6 THESIS MAIN TEXT

Structures the style for the main text chapters and builds them.

The command `\numberedchapter` is only relevant for a transition between unnumbered sections and numbered sections, it does not need to be included between each chapter.

### 2.2.7 APPENDICES

Structures the style for the appendices and builds them. The appendices are numbered with letters but are structured like regular chapters.

### 2.2.8 BIBLIOGRAPHY

Builds the bibliography. The style of the bibliography can be defined in `Preamble/mydefinitions.tex`.

### 2.2.9 PUBLISHED ARTICLES

This last section add the PDF files of your previously published articles (or about to be published) to the thesis. You should only include PDF files provided by the publishing journal. This is strictly for the examiners' convenience in the temporary bound thesis, as for copyright reasons these files may not be published in the final version of the thesis.

### 2.2.10 Differences between a temporary version and final version

There are two main differences between `\documentclass[temporary]{oist_thesis}` and `\documentclass[final]{oist_thesis}`.

The first difference is that the final version (`\documentclass[final]{oist_thesis}`) does not contain the published articles for copyright reasons.

The second difference is in the document style: page size, header and line spacing are different This might create small issues, such as page breaking with large tables, images or captions, when compiling the same content.

# Chapter 3

# Figures, tables and images

## 3.1 Figures

Figures should appear as close as possible to the first mention of them in the text. All figures must be referred to in the text by either a parenthetical mark-up (Figure 3.1) or a phrasing such as "Sequencing data, shown in Figure 3.1, shows that...". A parenthetical mention, but not an in-text mention, may be abbreviated as (Fig. 3.1). The number of the chapter should be part of the Figure number.

Figures must be accompanied by a caption that describes the material clearly and succinctly. Figure captions may start with a brief title in bold, which can then be referenced in the list of figures.


**Figure 3.1: Short caption (if wanted).** Full caption with all the details here.

This secret image won't be numbered and won't appear in the List of Figures because of the *

**Table 3.1:** Short heading for the List of Tables.

| Parameter | Value |
|---|---|
| $\Delta$ | 0, 150 |
| $\alpha$ | 85 |
| $\epsilon$ | 6 |
| $\kappa$ | 6.8 |
| $\gamma$ | 0.2 |

Full caption with all the details here.

As a general rule, figures should not have captions that run across pages. If a figure and its caption will be larger than one page, rewriting should be considered, or a reorganization of the figure. If this cannot be avoided, the figure caption should continue on the immediate next page, with a reference comment at the start of the text to the fact that it is a continuation. No other main body text should then appear on that page.

## 3.2 Tables

All tables should be referred to in the text by number (for example) "Table 3.1 describes all particles found in...". Tables may be printed in landscape mode rather than portrait mode, but must then be printed on a separate page (with continuing and sequential pagination). Tables may extend for more than one page, but should then have the table header row repeated on each page. Do not use font sizes smaller than 9 point. Tables

| Parameter | Value |
|---|---|
| $\Delta$ | 0, 1500 |
| $\alpha$ | 850 |
| $\epsilon$ | 60 |
| $\kappa$ | 68 |
| $\gamma$ | 2 |

This secret table won't be numbered and won't appear in the List of Figures because of the *

should have a heading and may have a caption. The number of the chapter should be part of the Table number.

## 3.3 Images

Images are vital to presentation of scientific data. Textual annotations must be correctly labelled, and legends, when used, must be clear and legible. Small symbols should be used on charts for data points. Axis marks and axis labels should be large enough to be read clearly. All white space should be used where possible. Headings for charts and captions explain the data within should be meaningful. Students must be aware of expected standards covering image manipulation and the standard practice for image presentation within their field and adhere to it. Excessive density, contrast, and hue manipulation of photographic images should be avoided. Where extensive manipulation of images is required for data extraction or analysis, this must be clearly explained in the description of methodology, and explicitly in the caption for each figure.

# Conclusion

This is the conclusion. You might want to leave it unnumbered, as it is now. If you want to number it, treat it like any other chapter.

# Bibliography

[1] S. Filipp, P. Maurer, P. J. Leek, M. Baur, R. Bianchetti, J. M. Fink, M. Göppl, L. Steffen, J. M. Gambetta, A. Blais, and A. Wallraff. Two-qubit state tomography using a joint dispersive readout. *Phys. Rev. Lett.*, 102:200402, May 2009. doi: 10.1103/PhysRevLett.102.200402. URL `http://link.aps.org/doi/10.1103/PhysRevLett.102.200402`.

[2] H. Kramers. Scattering of light by atoms. *Atti Cong. Intern. Fisica Como*, 2:545–557, 1927.

[3] H. Lee and M. Scully. The physics of eit and lwi in v-type configurations. *Found. Phys.*, 28:585–600, 1998. ISSN 0015-9018. URL `http://dx.doi.org/10.1023/A:1018709621908`. 10.1023/A:1018709621908.

[4] M. Mücke, E. Figueroa, J. Bochmann, C. Hahn, K. Murr, S. Ritter, C. J. Villas-Boas, and G. Rempe. Electromagnetically induced transparency with single atoms in a cavity. *Nature*, 465(7299):755–758, 06 2010. URL `http://dx.doi.org/10.1038/nature09093`.

# Appendix A

# Appendices

These are optional and should only be used if necessary.

The examiners commit to read the proposal, but the Graduate School or Curriculum and Examinations Committee reserves the right to require students to rewrite excessively long, or poorly constructed, thesis proposals, without forwarding them to examiners. The student cannot assume that the examiners will read the optional appendices.

The complete thesis proposal document must be submitted to the Graduate School by the due date as nominated by the Dean (see the Academic and Examinations Timeline). Earlier submission may be required in order to provide the thesis proposal to the examination panel no later than four weeks (28 days) prior to the oral defense. Only in exceptional circumstances can an extension of the due date for thesis proposal submission be granted by the Graduate School, and only on receipt of a Request for Extension of Due Date before the due date. These requests must include documented support from the student's supervisor.

# Appendix B

# Appendices and Supplementary Data

As required. Unlike a journal article, no data or discussion may be presented separately as unpublished supplementary documents or data. Appendices should be used instead for material that is tangentially relevant to the thesis but does not belong in the main narrative. If reference is needed to large volumes of data that cannot be printed (for example, an annotated genome, or a simulation including moving images), the data should be located on an OIST repository or public database and the URL of the dataset provided in the thesis.

# Published articles

For convenience of the examiners, you may include here any number of PDF documents such as papers you published or submitted. Those documents will appear in the temporary version of the thesis, but will not be rendered on the final version to avoid copyright issues.

Authority:

- Approved by the President
- OIST School Corporation Act

# Chapter 1. WHO WE ARE:
## Founding and Governing Principles

### 1.1 FOUNDING OF THE OIST GRADUATE UNIVERSITY

The Okinawa Institute of Science and Technology Promotion Corporation (OIST PC) was established on September 1, 2005, pursuant to the Independent Administrative Institution Okinawa Institute of Science and Technology Promotion Corporation Act (Act No. 26 of 2005), in order to prepare the way for an international graduate university (the University) dedicated to science and technology. Following the successful establishment and operation of OIST PC, the OIST School Corporation Act (Act No. 76 of 2009) was enacted to provide the institutional basis for the University and to establish a framework for transitioning from a research institute to a fully functioning graduate university.

The express objectives of the OIST School Corporation (OIST SC) are to conduct outstanding international research and education in science and technology, and by this means to:

~contribute to the sustainable development of Okinawa; and
~to advance science and technology in Japan and the rest of the world.

#### 1.1.1 OBJECTIVES OF THE OIST GRADUATE UNIVERSITY

The founding documents established five central concepts to guide the University:

**Best in the World** - Be a leading center for education and research, which requires a culture where creativity, uniqueness, and diversity are encouraged.

**International** – Aim that more than half of the faculty and students will be non-Japanese and that English, as the international language of science and technology, will be the University's official language.

**Flexible** – Encourage innovation, creativity, and adaptability (academically and administratively), accommodate new initiatives, establish an interdisciplinary academic structure, and treat every student as a unique individual.

**Global Networking** – Increase research and education opportunities and enhance the visibility of the University through

hosting, attending at and participating in international meetings, conferences, workshops, collaborations, and the like.

**Collaboration with Industry** – Recognize that the research outcomes generated by the University's research in science and technology may be developed and applied by industry for the benefit of society in general as well as to facilitate sustainable development of Okinawa and the competitiveness of Japan.

### 1.1.2 SCHOOL CORPORATION & UNIVERSITY MANAGEMENT STRUCTURE

In keeping with the mandate of the OIST School Corporation Act, OIST SC and the University present a unified management structure:

The ultimate authority and responsibility for the management and operation of the OIST SC is vested in its Board of Governors (BOG). The BOG selects a Chief Executive Officer (CEO) for OIST SC, and the CEO also serves as the President of the University. The BOG entrusts the day-to-day management of the University to the President. Additionally, the BOG appoints the Senior Level Executive, who is also the Vice-CEO.

The President, in consultation with the BOG, establishes a management structure for the University, a structure which is to be an efficient and effective vehicle for operating a distinguished international graduate university and which will ensure transparency and accountability in its administrative and fiscal operations.

## 1.2 MISSION STATEMENT

The University shall conduct internationally outstanding education and research in science and technology, and thus contribute to the sustainable development of Okinawa, and promote and sustain the advancement of science and technology in Japan and throughout the world.

## 1.3 CORE VALUES

Integrity, honesty, fairness, respect for others, and dedication to the OIST mission are the values that inform the activities and behaviors of individuals working for, or asserting an affiliation with, the University. The University promotes diversity and provides equal opportunities for all community members without regard for race, color, religion, national origin, ancestry, physical or mental disability, medical condition, marital status, gender, sexual orientation, or age.

In addition, the University operates within the principles established by the following policies:

### 1.3.1 OPENNESS IN RESEARCH

The University's central functions of teaching, learning, researching, and publishing depend upon an atmosphere in which freedom of inquiry, thought, expression, scholarship and peaceable assembly are given full protection and support. Therefore, it is University policy that expression of the widest range of viewpoints is to be encouraged within the University.

In order to support the open and free exchange of ideas, the University as a matter of policy also encourages participation in the research enterprise by a diverse body of highly qualified individuals. Except in extraordinary circumstances as determined by the President [link: 2.4.1], participation in University research by otherwise qualified individuals will not be limited by citizenship, nationality, or ethnicity. Similarly, participants in University research shall not be denied access - based on citizenship, nationality, or ethnicity - to the intellectually significant portions of their research.

Additionally, because the University's research is intended for dissemination within the interested scientific community and throughout the world, only time-limited publication and disclosure restrictions based on contractual and/or legal obligations, such as those required for purposes of peer review and patentability review, may be imposed on the research.

### 1.3.2 RESPECTFUL WORKPLACE

**OIST Graduate University Respectful Workplace Policy**

The University is committed to providing a work environment that promotes education, research, and productivity through working relationships based on respectful communication. This commitment calls for a workplace where the following core values are upheld:

1. Everyone at OIST without exception has an important contribution to make toward the overall success of the University's mission.
2. This mission will be carried out in an atmosphere where all employees, in all types of jobs, value each other and treat each

other with respect. Communication between employees should be polite at all times. This will be true even in situations of high pressure and urgency.

3. Diversity among employees is celebrated at OIST and employees must at all times exercise tolerance and respect for cultural, gender, ethnic and other differences. Special consideration should be given to those employees with physical or mental impairment.
4. Managers, supervisors and others in positions of authority should consider themselves as role models in the promotion of these core values, without in any way abdicating their responsibility to direct their employees to perform work effectively.
5. In the same spirit, employees, irrespective of their job title, are encouraged to discuss issues of concern without fear that those discussions will result in negative treatment or punitive consequences from any other employee of the University.
6. To promote mutual understanding and avoid unnecessary conflicts, an atmosphere where native English speakers are considerate of non-native speakers, and vice versa, is expected so that no language-related barrier restricts employees from participating in discussions or in asking questions.
7. In response to staff input, the University will make reasonable changes to improve the work environment and productivity at OIST.

### 1.3.3 COMMITMENT TO STUDENTS

The University's PhD program is at the heart of the University, and its participants are selected from the very best science and technology graduate students in the world. The University is committed to their success, both while in the thesis program and beyond. During their graduate training at the University, each student will work closely with world-class faculty pursuing unique, highly individualized programs of study in modern well-equipped laboratories. The University's international composition and interdisciplinary approach has been expressly designed to spark exploration, creativity, discussion and innovation, in order to assure that our students will advance the cutting edge of research in science and technology. By providing excellent conditions for thesis research (including good practical support for living and thriving in Okinawa), the University advances the goals of its

students and encourages them to become tomorrow's leaders.

## 1.4 UNIVERSITY CODE OF CONDUCT

The Code of Conduct (Code) is a statement of our shared and mutual commitment to upholding ethical, professional and legal standards in conducting our lives and making decisions within the University community. The University values integrity, honesty, fairness, diversity, respect for others, and equality of opportunity; it strives to assure that no activity of the University undermines fundamental principles of human dignity. As members of the University community, all faculty, staff, students, University officers, members of the Board of Governors, and all University affiliates and volunteers are responsible for maintaining and demonstrating these values and for observing the ethical standards of both the University and the broader community in which it operates. The values contained in this Code of Conduct must be integral elements of the University's educational, research and business practices. Each of us also must be cognizant of, and comply with, the relevant external policies, standards, laws and regulations that pertain to our activities.

### 1.4.1 APPLICABILITY

The University's Code applies to the following members of the University community:

~ Those who are paid by the University when they are working for the University, including faculty, staff, researchers and students;

~ Those doing business with the University, such as consultants, vendors, and contractors;

~ Those who perform services for the University as volunteers; and

~ Those who assert an association with the University (such as alumni).

### 1.4.2 BUSINESS TRANSACTIONS & OTHER ACTIVITIES

Members of the community must transact University business in compliance with applicable laws, regulations, and University policies, rules, and procedures. Business transactions and other activities within the University may not always be subject to specific laws, regulations, or codes of ethics. In these instances, our core values will govern. The fact that a particular business or other practice is common, customary, or expedient will not justify its use at the University if that practice conflicts with the core values of the University or any other the requirements of the Code.

### 1.4.3 PROTECTION OF INFORMATION

Community members receive and generate on behalf of the University various types of confidential, proprietary, and private information. It is imperative that each member of the University community understands and complies with Japanese law concerning access to and disclosure of various types of information. In addition, each member of the University community must comply with disclosure/nondisclosure agreements with third parties, and with University policies, rules and procedures [link: 12] pertaining to the use, protection and disclosure of such information. Be aware that, in some cases, these rules and procedures may continue to apply even after a person's relationship with the University has ended.

### 1.4.4 CONFLICT OF INTEREST/CONFLICT OF COMMITMENT

Members of the University community who serve as faculty or staff owe their primary professional allegiance to the University and its mission. Outside professional activities, private financial interests, or the receipt of benefits from third parties can cause an actual or perceived divergence between an individual's private interests and the duty of allegiance to the University.

To help prevent such a potential conflict of interest or commitment (including the appearance of a conflict) from arising, faculty and staff who have other professional or financial interests shall disclose them in compliance with applicable conflict of interest/conflict of commitment policies and procedures set out in the Policies, Rules and Procedures Library at Chapter 22, Avoiding Conflicts of Interest & Commitment. [link: 22].