UNIVERSITÀ DEGLI STUDI
DI TRENTO

CIMeC - Center for Mind/Brain Sciences

CIMeC

DOCTORAL PROGRAM IN
COGNITIVE AND BRAIN SCIENCES

2025-2026
STUDENT HANDBOOK

41ST CYCLE

Approved by the Doctorate Program Committee on July 17, 2025

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Welcome to the PhD program in COGNITIVE AND BRAIN SCIENCES

Since 2006 the PhD in Cognitive and Brain Sciences has been promoted by CIMeC, the Center for Mind/Brain Sciences of Trento University, and is based on the multi-disciplinary skills in the area of mind and brain sciences that reflect its faculty and researchers.

A fundamental resource at CIMeC and its partnering researcher centers are the labs, which offer the most advanced methods for the study of the neural correlates of cognitive functions (3T fMRI, EEG, MEG, TMS), the measurement of human and animal behavior (movement kinematics, eye movements, equipment for the collection of psychophysical data), molecular neurobiology and neuroanatomy, and the collection of neurophysiological data and for the modeling of brain functioning mechanisms (neuroinformatics).

In this context, PhD students can acquire high-level skills in specific sectors of research, both basic and applied. Furthermore, the strong interdisciplinary format favors the development of innovative and frontier paths in the field of cognitive neuroscience through the integration of knowledge from different research areas but linked by a common scientific interest, the study of the nervous system, of mental processes and of behavior.

PhD students will also be involved in seminar initiatives that enhance the educational potential of the doctorate. The PhD lasts 4 years, activities are carried out in English and require active participation. The training environment is enriched by the presence of the graduate program, numerous post-docs and by a large flow of researchers and visiting professors from Italy and abroad.

This Student Handbook aims to provide a concise overview of the main activities of your PhD, as well as useful information concerning the organization of the doctoral program. Yr1 students receive a hard copy at the onset of their PhD career but should refer to the updated yearly version available on the CIMeC wiki pages.

Happy Doctorate!

Massimiliano Zampini	Veronica Mazza	Leah Mercanti
PhD Director	PhD Deputy Director	PhD Manager

1.
DOCTORATE PROGRAM ORGANIZATION

Director of the Doctorate Program

Massimiliano Zampini

Deputy-Director of the Doctorate Program

Veronica Mazza

Doctorate Program Executive Committee

Doctoral Program Committee

Daniel Baldauf, Lorella Battelli (Harvard), Paolo Belardinelli, Raffaella Bernardi (UniBZ), Roberto Bottini, Yuri Bozzi, Stefania Bracci, Luigi Cattaneo, Ludovico Coletta (FBK), Corrado Corradi Dell'Acqua, Alessandra Dodich, Scott Fairhall, Elisa Frasnelli, Alessandro Gozzi (IIT), Giorgio Fumagalli, Albrecht Haase, Uri Hasson, Jorge Jovicich, Michael Lombardo (IIT), Uwe Mayer, Veronica Mazza, Andrea Messina, Carlo Miniussi, Costanza Papagno, Eugenio Parise, Francesco Pavani, Manuela Piazza, Stefania Pighin, Paolo Rota, Silvio Sarubbo, Jakub Szymanik, Valeria Sovrano, Katya Tentori, Stefano Teso, Massimo Turatto, Luca Turella, Giorgio Vallortigara, Moritz Wurm, Massimiliano Zampini

Additional Faculty and Supervisors

Sara Assecondi, Claudia Bonfiglioli, Giuliano Iurilli (IIT), Simona Monaco, Federico Rossi (IIT), Paola Sgadò

Doctorate Program Administrator

Leah Mercanti

Student Representatives

- 40th cycle: Benedikt Fuhr (also representative of the UNITN Council of Doctoral Students)
- 38th cycle: Debora Spagnolo (also CIMeC Council representative)

PhD Students *(PhDS)*

41st cycle (Year 1)	**40th cycle** (Year 2)	**39th cycle** (Year 3)	**38th cycle** (Year 4)	**37th cycle** (Extension)
Matilde Barucci	Michele Acconcia	Alessandra Barbon	Valeria Bedin	Andrea Belluzzi
Tiziano Causin	Alp Akova	Marisa Monika Amalie Birk	Luca Betteto	Davide Cortinovis
Noemi Fiorillo	Margherita Bisaglia	Yadunandan Edayadathodi	Matteo De Matola	Martina Mancano
Daniela Miriam Gibbons	Benedikt Paul Fuhr	Chiara Fornari	Silvia Gini	Chiara Pepe
Martina Grandi	Yiping Ge	Greta Gaimarri	Alessandra Gobbo	Matilde Perrino
Ignacio Lembo Ferrari	Atri Ghosh	Giulia Mazzi	Davide Mazzaccara	Chiara Riccardi
Melissa Null	Marco Gigliozzi	Cristina Pagliara	Elisa Pasquini	Samantha Sartin
Serena Raus	Mohit Kumar Jaiswal	Dario Pesenti	Debora Spagnolo	Michele Tosi
Ester Riccardi	Davide Liga	Valerio Rubino	Marco Tagliaferri	Le Minh Nhut Truong
Riccardo Romano	Nicole Mancin	Ines Severino		
Alberto Spolverato	Ilaria Mirlisenna	Heather Nicole Strelevitz		
Giorgia Zilio	Jessica Muraro	Roberta Vertullo		
	Manu Raghavan Pullur			
	Martina Schiano Visconte			
	Mila Urosevic			
	Aseka J. Wickramarachch			
	Shiyao Xu			

2.
DOCTORAL PROGRAM MEMBER DESCRIPTIONS

SUPERVISOR

The Supervisor's role is to follow and supervise the academic path and research activities of his/her Student and is one of the 3 members of the PhD Student's Oversight Committee. The Supervisor for each Student is chosen by the PhD student during the admissions process and is designated by the Executive Committee at the onset of the PhD program.

CO-SUPERVISOR

Co-supervision is obligatory and is one of the Oversight Committee members, other than the Supervisor of the Student. Should the Student's Supervisor not be a University faculty member, then the Co-Supervisor must be a University faculty member, preferably at the Doctorate in Cognitive and Brain Sciences.

OVERSIGHT COMMITTEE (*OC*)

At various points of the program, Students present their work to an Oversight Committee (OC) made up of the Supervisor and two other experts (one of which is the Co-Supervisor). At least one member of the OC must be a member of the Doctorate Program Committee of the Doctorate in Cognitive and Brain Sciences. The OC is appointed by the Supervisor after discussion with the Student, and then confirmed by the Executive Committee. Upon completion of a Student's presentation or written report, the OC has the obligation of supplying the Student with feedback (both written and oral) immediately. The members of the Student's OC remain the same throughout the four years of the Doctorate.

MENTOR

Your mentor is a senior scientist, typically a full or associate professor that has been at the CIMEC for at least three years, and who will be available throughout the Student's doctorate. Students are encouraged to meet with the Mentor at least once a year. Typically, the Mentor is not involved in the research of the Student and his/her role is mainly to support them on issues other than the specific PhD research project. Mentors are chosen solely by the PhD Students, among the DPC members, but may also be faculty who have been members in a Doctorate program for at least three years, pending authorization from the Executive Committee. Mentors contact the PhDS in Yr1 but subsequent meetings are initiated by the PhDS.

PHD DIRECTOR

The PhD Director is elected by the DPC, the position lasts 3 years, and is renewable once. As the principle academic representative of the Doctorate in Cognitive and Brain Sciences the PhD Director is the overall responsible of the Program, other than coordinating its affairs. The PhD Director is member by right of the EC.

PHD DEPUTY-DIRECTOR

The PhD Deputy-Director is nominated by the PhD Director soon after the election and lasts as long as the Director's mandate. The Deputy-Director substitutes the PhD Director for institutional matters should the Director be unavailable.

PhD STUDENT REPRESENTATIVES

Given that the PhD Program lasts 4 years, there are two PhDS representatives: one "Junior" (Yr1 & 2) and one "Senior" (Yr3 & 4). Representatives are the voice of the student body of the Doctorate and represent you in the Doctoral Program Committee and CIMeC Council meetings.

PhD ADMINISTRATOR *(PA - Leah)*

The PhD administrator's role is to provide support to all doctoral program Students and Supervisors in their daily and long-term PhD program related activities. Main activities include PhDS admission

selection, student oral defence organization, support to the EYE-C, EC and DPC, as well as to Student representatives, Student Handbook, annual internal reports, and doctorate logistics.

Maintaining a constructive relationship with your Supervisor, your colleagues and the CIMeC community-at-large is one of the essential ingredients for a successful PhD. Should you experience difficulties during your studies, you are encouraged to contact your Supervisor, other members of your Oversight Committee and/or your Mentor. The Director of the Program and the Deputy-Director as well as the PA can also provide support. However, should you want to speak with someone outside of the doctorate program, then the Confidential Counsellor and Psychological Counselling at the University of Trento are available.

More information about them are available on the University website:

- Confidential Councilor
- Psychological Counseling

DOCTORAL PROGRAM COMMITTEE (*DPC*)

The Doctoral Program Committee consists of Faculty and Supervisors who are members of the CIMeC Doctoral Program. The DPC operates according to the duties under Art. 12 of the Doctoral Regulations of the University of Trento and is summoned approximately between 3 and 6 times a year.

EXECUTIVE COMMITTEE (*EC*)

The Executive Committee assists the Director of the Program in fulfilling his or her duties under Art. 14 of the Doctoral Regulations and deliberates on matters delegated by the Doctoral Program Committee. It is composed of at least 4 elected members of the DPC other than the Director of the Program, who is a member by right and chairs the meetings. The EC meets approximately 6 times throughout the year.

END-YEAR EVALUATION COMMITTEE (*EYE-C*)

Before the end of each academic year, the DPC determines the pass/fail status of Students in order to be admitted to the following year. Students, Supervisors and Course Lecturers provide a checklist to a separate committee made up of a minimum of 2 members of the DPC, nominated by the Executive Committee, which is called the End-Year Evaluation Committee (EYE-C). The duty of the EYE-C is to review all checklists, feedback, evaluations and reports, and to provide a recommendation-based summary to the DPC. The EYE-C has the remit to collect any additional information from Supervisors, Students or other sources deemed relevant to its duties.

PhD TRENTO OFFICE *(CSSH)*

PhD Students should contact the Humanities and Cognitive Sciences Area - PhD Office (phd.office-cssh@unitn.it) directly for the following purposes:

- Yearly enrolments and certifications, also for *permesso di soggiorno* purposes
- TDS payment
- Diploma
- Formal final exam requests
- Bank change information
- Period abroad certifications and paperwork

3.
OVERALL PLAN OF ACTIVITIES

The Doctorate in Cognitive and Brain Sciences uses an online PhD organization and depository tool called "**PhDigital**" (url: phdigital.cimec.unitn.it). **Almost all PhD tasks, deadlines and reports are managed via this online platform. PhD students are obligated to continuously log their PhD activity (educational, public engagement, conferences) in PhDigital throughout the year. PhDigital deadlines must be observed or students risk expulsion**. For almost all tasks PhD students, Supervisors, OC members, Course Coordinators and Mentors receive alerts in their email box prompting them to enter PhDigital in order to complete their upcoming deadlines.

Please note that the PhD program at CIMeC is residential. Long absences are not permitted, unless previously approved by the Supervisor and the Executive Committee, who guarantee that the absence is motivated by research activity. Foreseeable absences longer than two weeks must be communicated at least 1 month in advance to the PhD administrator by the Student in writing, approved by the Supervisor and taken note of by the Course Lecturer, should the absence overlap with a course the Student is enrolled in. **Repeated unjustified absences or a delay in completing an assignment will be reported to the Doctoral Program Committee and may lead to the expulsion from the doctoral program.**

All courses offered by the Doctorate are in presence in classrooms that are double the capacity of the maximum number of occupants. Should it be absolutely necessary they may run online. Please check with the Doctorate's Course Coordinator should the latter be the case.

Holidays observed in the 2025-2026 a.y. are as follows:

2025	2026
Dec. 8	Jan. 1, 6
Dec. 25-26	Apr. 6
	May 1
	June 2
	June 26 (Trento/Mattarello only)
	Aug. 5 (Rovereto only)

All other interruptions must be agreed upon with the Supervisor and Course Lecturers should the absences coincide with course dates *no matter how long the absence*.

3.1 2025/26 CHECKLIST (check PhDigital and email-alerts for due dates)

YEAR 1 – Cycle 41

Study plan

- [ ] Final YR1 study plan

Research

- [ ] Research plan
- [ ] Doctoral Student Day poster
- [ ] YR1 research presentation

Logs

- [ ] Lab / Supervisor meetings
- [ ] Colloquia attended
- [ ] CIMeC seminars attended
- [ ] Initiated participation and public engagement activities
- [ ] Profiles and publications update on Digital University and IRIS

YEAR 2 – Cycle 40

Study plan

- [ ] Final YR2 study plan

Research

- [ ] YR2 project proposal presentation

Assignments

- [ ] Critical Literature Review (CLR)
- [ ] Doctoral Student Day poster/talk slides

Logs

- [ ] Lab / Supervisor meetings
- [ ] Colloquia attended
- [ ] CIMeC Seminars attended
- [ ] Initiated participation and public engagement activities
- [ ] Profiles and publications update on Digital University and IRIS

YEAR 3 – Cycle 39*

Study plan

- ☐ Final YR3 study plan

Research project

- ☐ YR3 project progress presentation

Assignments

- ☐ Doctoral Student Day poster/talk slides

Logs

- ☐ Lab / Supervisor meetings
- ☐ Colloquia attended
- ☐ CIMeC Seminars attended
- ☐ Initiated participation and public engagement activities
- ☐ Profiles and publications update on Digital University and IRIS

* English B2 level certification for those students who didn't present a valid (max. 2 yrs old) certification at the onset of the PhD

YEAR 4 – Cycle 38

Research project

- ☐ YR4 project results presentation
- ☐ 1st/1st co-authorship of publication relevant to thesis

Assignments

- ☐ Doctoral Student Day poster/talk slides
- ☐ Thesis abstract
- ☐ Thesis delivery
- ☐ CIMeC Seminar presentation

Logs

- ☐ Lab/Supervisor meetings
- ☐ Colloquia attended
- ☐ CIMeC Seminars attended
- ☐ Initiated participation and public engagement activities
- ☐ Profiles and publications update on Digital University and IRIS

3.2. Yearly Admission

As specified in the Checklist and Gantt diagrams above, admission to the following year of your PhD depends on approval by the Doctoral Program Committee and will result in one of three options: pass, pass with reserve or fail.

The Doctoral Program Committee's decision to admit PhD Students to the following year is based on:

1) performance in developing the thesis project and presenting it on the deadline dictated by the School;
2) completing the PhD program's assignments in due time;
3) completing all course requirements and passing all the COMPULSORY courses in the study plan;
4) self-reporting in PhDigital, including study plans, minimum required attendance at CIMeC Colloquia, CIMeC Seminars and other seminars, Supervisor/Lab meetings, and general activities;
5) participation/public engagement in the Center's activities.

In order to be admitted to Yr4, in addition to the tasks listed above, students must also obtain at least B2 level of a valid (max. 2 yrs since applying to the PhD program), internationally recognized English certification (i.e. IELTS, TOEFL).

4.
COURSES

As of 2025/26 all courses offered by the PhD program are **obligatory. The default list of courses is in the students' study plan profiles in PhDigital.** Most courses take place in Yr1 and the Research Communication ones in Yr2 (details on next page).

Yr1 exceptions: in case a PhD student is an expert of one of the mandatory courses s/he must first discuss this with the Supervisor and decide on an alternative. The alternative may be an external course or teaching assistance (for specifics on Teaching Assistance read its description on page 24). Once student and supervisor have decided then the student **must add the alternativec under "External courses"** in the study plan profile **by Dec. 10** and **email** phd.cimec@unitn.it, CC'ing the Supervisor, stating explicitly which course s/he will be substitute/adding. The external course(s) or teaching assistance must be the same number of hours (or more) of the course that is being substituted.

The Doctorate Program encourages the student to look into the educational offerings throughout the University in order to fulfill educational needs of their research. Like all courses in a student's study plan, the course may only be taken prior to both Supervisor's and Executive Committee's approval. Since the PhD's academic year ends on October 31st, all courses offered by the PhD program must end by early September in order to be accounted for in the same academic year.

Absences

Course attendance is COMPULSORY. For each course a student is allowed up to 25% absences. There is no distinction between different absences. If a Student exceeds 25% of these absences he/she will be required to re-take the course the following year.

Testing

Testing methods are determined by each lecturer. Details on how and when the test shall take place are the responsibility of the course lecturer and are shared with the students within the first 2 lessons of the course. The general guideline for PhD Lecturers is that testing take place within 2 weeks from the end of the course and feedback is provided within 3 weeks from when the evaluation takes place. Testing can only be done when course evaluations have been filled by each student. Should the student fail a course for any reason, the course lecturer emails the fail to the Student cc'ing his/her supervisor and notifying the School. **The last possible date for a course test is Sept. 8 each year.**

Additional external courses

In case the CBS Doctoral Program does not offer a course/courses in the field of expertise of/relevant to the PhD project, students may take an additional course/courses of their choice at another PhD or master's level program within University of Trento's network or online. Students are allowed to take courses even in Yr3 and Yr4. In order to do this the student must:

1) discuss this with their supervisor and, if s/he agrees, then
2) add it to the list of external courses in the study plan profile in PhDigital by Nov. 30 (Yr2, 3 and 4 students) and Dec. 10 (Yr1)
3) email phd.cimec@unitn.it CC'ing the Supervisor stating explicitly which course s/he will be substitute/adding.

Pass/fail status or certifications by external course Lecturer must be uploaded by PhD students in the PhDigital **by 9 September**.

Course credits obtained from other institutions, including summer schools, during the Program can be proposed in the study plan. In this case external course syllabi, schedules, **pass/fail status** and course instructor names must be added to the proposed study plan and final documentation (certifications) uploaded in PhDigital under "External courses". If the study plan in PhDigital is void of this information it will not appear in your career report (no credit will be given). In order to obtain credit for your external course there must be a final test or project on the basis of which you pass the course.

Study plans are final after Nov.30th/Dec. 10th. PhD students who fail to enter a course substitution in their study plan by the Nov. 30 (if Yr2, 3 or 4) or Dec. 10 due date are obligated to take it. If such notice is not given, students are obligated to take it or it will appear as a fail in their transcript. No changes can be made once the Final Study Plan has been validated by the Supervisor.

4.1 COURSE LIST

6 frontal hours = 1 credit
FT = Frontal teaching
R = Research

1- SAFETY AND PRIVACY

Part of your research consists in keeping up-to-date with **safety and privacy certifications**. Please check with your Supervisor and email the certifications to Leah within 1 month of start of PhD. A general, and low and/or medium online course on safety in the workplace is compulsory for all UNITN personnel. **Until you pass these courses you cannot have access to your labs.**

2- MAKE THE MOST OF YOUR PHD

Course	Lecturer	When	Type	Hours
Introduction to the PhD program at CIMeC	M. Zampini, V. Mazza, L. Mercanti	YR1	FT	2
Peer-to-Peer Introduction to the Doctorate in Cognitive and Brain Sciences	YR4 Students	YR1	FT	2
Time Management	A. Dodich	YR1	FT	2
1st Year-in-Review	M. Zampini, V. Mazza, L. Mercanti	YR1	FT	1

3- ETHICS AND GOOD PRACTICE OF RESEARCH

Course	Lecturer	When	Type	Hours
Ethics of Research in Neuroscience - General	C. Bonfiglioli	YR1	FT	2
Ethics of Research in Neuroscience - Human track	C. Bonfiglioli	YR1	FT	6
Ethics of Research in Neuroscience - Animal track	P. Sgadò	YR1	FT	6
Code of conduct in science	S. Pighin	YR1	FT	4

4- PARTICIPATE IN THE LIFE OF YOUR INSTITUTION

Course	Reference	When	Type	N. / Hrs.
Colloquia Attendance	M. Wurm/PhD student organizers	Each year	FT	4
CIMeC Seminar Attendance	PhD Students	Each year	R	10
Doctoral Student Day	L. Turella / Phd Students organizers	Each year	FT	8 hrs
Participation / Public engagement	L. Mercanti	Each year	FT	Varies
Third mission - Open Science	A.Dodich, C. Miniussi	YR1	FT	10 hrs

5- ACHIEVING COMPUTATIONAL & IT EXPERTISE

Course	Lecturer	When	Type	Hours
Remote Computing with UNIX	P. Rota, S. Teso, S. Tessari	YR1	FT	10
Statistical Methods for Neuroscience	C. Corradi Dell'Acqua	YR1	FT	20
Python for Open Neuroscience	S. Assecondi	YR1	FT	32

6- RESEARCH COMMUNICATION

Course	Lecturer	When	Type	Hours
Data visualization & Conference presentations	R. Bottini	YR2	FT	20
Writing & How to Respond to Reviewers	J. Jovicich	YR2	FT	12
How to Review a Journal Article	A. Dodich	YR2	FT	6
Academic writing*	CLA lecturers	YR2	FT	24

*Should PhDS already be an English native speaker with proven academic writing skills s/he may choose an extra 24 hours of courses to be added in PhDigital by Nov. 30.

7- TEACHING ASSISTANCE

Course	Lecturer	When	Type	Hours
Teaching Assistance	PhDS	All years	FT	40 max./Yr.

4.2 COURSE DESCRIPTIONS

1 – SAFETY AND PRIVACY

Part of your research consists in keeping up-to-date with safety and privacy certifications. Please check with your Supervisor and email the certifications to Leah within 1 month of start of PhD. A general, and low and/or medium online course on safety in the workplace is COMPULSORY for all UNITN personnel. Until you pass these courses you cannot have access to your labs.

2 – MAKE THE MOST OF YOUR PHD

These attendance-only seminars include an **introduction to the PhD program at CIMeC**, held by the PhD program Coordinator and the PhD administrator; tips on getting by your PhD from the **Yr4 PhD Students**; and on **time management**.

3 – ETHICS AND GOOD PRACTICE OF RESEARCH

ETHICS OF RESEARCH IN NEUROSCIENCE - GENERAL, HUMAN + ANIMAL TRACKS

Contents (Common to both tracks):
Introduction on the responsible and ethical conduct of scientific research: obligations of researchers towards individuals and society. Class will focus on issues important when conducting research involving human participants or animals, including results interpretation and dissemination.
Brief history of the introduction of ethical considerations in research.

Lecturer: C. Bonfiglioli

Human track:
Focus on the Declaration of Helsinki, international reference document on the ethical principles guiding research with human participants;
Submitting a protocol for ethics approval to CER (Comitato Etico per la Ricerca, Research Ethics Committee: the guidelines for submitting an approval request to the UniTN CER will be illustrated, with a particular emphasis on important issues such as informed consent, special care towards vulnerable populations, participants' privacy protection.

Lecturer: C. Bonfiglioli

Animal track:
Introduction to the ethical and scientific issues of using animals for scientific purposes. Focus on the current European and Italian regulations for animal research, animal welfare, and the 3R principle.
Preparing and submitting a protocol for ethical approval to the OBPA and the Italian Ministry of Health: the guidelines for submitting an approval request to the OBPA will be illustrated.

Lecturer: P. Sgadò

Teaching Method: A combination of frontal lectures and class discussions

Objectives: At the end of the course students will:
have achieved a greater understanding of the ethical issues associated with research involving human participants or animals;

be able to critically evaluate the ethically relevant aspects of their own research, and that of others; be able to design a study taking into account the ethical principles shared by the scientific community; be able to draft an approval request to the University Research Ethics Committee (CER) or to the Organismo Preposto al Benessere Animale (OPBA).

Evaluation method: The evaluation will be based on participation in class discussions and completion of a written assignment.

CODE OF CONDUCT IN SCIENCE

Contents: The lessons introduce PhD students to ethical practices for responsible research. Key principles such as honesty, reliability, and accountability are explored through real-world cases of scientific misconduct. Topics include plagiarism, fabrication, falsification, as well as questionable research practices, and publication bias.

Teaching method: The lessons are structured around interactive lectures, case studies, and group discussions. Students will analyze real-world examples of research misconduct and ethical dilemmas, encouraging critical thinking and active engagement. Practical examples will be used to deepen their understanding of responsible research practices.

Objectives: By the end of the lessons, students develop a better understanding of research integrity and ethical responsibilities in academia. They will learn to recognize and evaluate different forms of misconduct, and understand the importance of transparency and accountability in research.

Evaluation method: This teaching activity does not include a final evaluation but requires students' attendance and active participation in class. Attendance is mandatory and will be verified.

Lecturer: S. Pighin

4 – PARTICIPATE IN THE LIFE OF YOUR INSTITUTION

COLLOQUIA

Contents: Colloquia at CIMeC are talks given by prominent invited researchers in the mind/brain sciences. Students have the opportunity to meet the speakers of CIMeC-organized Colloquia personally during their visit and are invited do so by contacting the Colloquium Host prior to their arrival/talk.

Teaching Method: Seminars

Objectives: Get to know and hear talks from leading scientists in the research fields being currently focused on at the Center for Mind/Brain Sciences.

Evaluation method: Of the 6 Colloquia offered throughout the year, PhD students must attend at least 4 of them and report the Colloquia attended in PhDigital. Should students be unable to attend them they are still required to attend seminars from leading scientists in their field throughout the year and report them in PhDigital.

Colloquium Academic Coordinator: M. Wurm, Colloquium PhDS Committee

CIMEC SEMINARS

CIMeC Seminars are the CIMeC researchers' bi-weekly meeting to get to know what's going on at the Center. All CIMeC Principle Investigators, Postdocs, PhD Students, and MSc Students are strongly encouraged to attend them. The talks are aimed at a broad audience and address fundamental questions, problems, theories, or ideas in the mind/brain sciences.

DOCTORAL STUDENT DAY

Contents: Doctoral Student Day is an opportunity for the CIMeC PhD Students to organize a day of talks and poster sessions in order to present their work to the CIMeC, enabling them to receive feedback from researchers they may not normally interact with, and to promote dialogue among researchers from the different fields represented in the Doctorate.

Teaching Method: Poster and talk preparation followed by poster sessions and presentations.

Objectives: Allow PhD students to organize a symposia entirely focused on them and the research they are carrying out, as well as exchange knowledge and receive feedback from other researchers and supervisors.

Evaluation method: Awards are given to the best poster for each cohort as well as best talk.

Faculty Contact: L. Turella

PARTICIPATION WITHIN THE SCIENTIFIC COMMUNITY / PUBLIC ENGAGEMENT

CIMeC PhD Students are part of both a scientific and public community. As such, voluntary and proactive participation in the Center's activities is considered key in becoming a researcher. Participation within the scientific community and public engagement can be intended as, but not limited to, the following: assisting and organizing lab tours, DS Day organization, CIMeC event planning, Researchers' Night, Orientation/Open Days, cross-lab journal clubs, assisting visiting professors, etc. Find ways to participate in your scientific community and to build a gap between science and society in the designated sections of the CIMeC Wiki Pages.

Contact: L. Mercanti, CIMeC's Third Mission Delegate: Prof. Veronica Mazza

THIRD MISSION - OPEN SCIENCE

Contents: The 10-hr course aims to equip participants with a basic understanding of the Third Mission and Open Science principles, emphasizing their goals of promoting the valorization and application of knowledge to foster social, cultural, and economic development. Participants will explore why PhD students should be engaged with the Third Mission and Open Science, and learn about various activities and strategies to effectively transfer knowledge to society, ensuring the sustainability of their research efforts.

For the Open Science practicum:

Reproducible scripting for data analysis: tools and good practices (2 hours): An overview on good practices and currently available tools to make data analysis code effective, portable and ready to be shared.

Reproducible research objects: disseminate information by following standard and FAIR schemas (2 hours): An overview on concepts and practices to transform collections of research data files into standard, well-formed and FAIR (Findable, Accessible, Interoperable, Reusable)-compliant datasets.

Teaching Method: The course will consist of a combination of frontal lecture and practical exercises.

Objectives: The primary goal of this course is to provide students with a practical framework that enables them to enhance their PhD activities in alignment with Third Mission and Open Science principles. Students will learn how to incorporate these concepts into their portfolios, thereby advancing their careers and contributing to societal development.

Evaluation method: Students are assessed through a written project, either individually or in groups. This project requires students to propose an idea and outline a plan for implementing Third Mission and Open Science initiatives throughout their specific PhD studies (topic). The project is then briefly presented in class and submitted to the course lecturers for evaluation.

Faculty: A. Dodich, C. Miniussi

5- ACHIEVING COMPUTATIONAL AND IT EXPERTISE

REMOTE COMPUTING WITH UNIX

Contents: The course will give participants a comprehensive map of the diverse computing and storage infrastructures available at CIMeC, outlining their capabilities and potential research applications and will provide essential skills for interacting with servers and clusters. Moreover, it will cover essential concepts and tools for leveraging CIMeC's infrastructure, with a focus on Python use cases. The main topics will be: 1) The structure of a remote UNIX server, 2) How to interact with UNIX systems through one or more shells as well as a selection of key commands, 3) How to use tools -- chiefly Jupyter notebooks and Visual Studio code -- for remote programming and debugging, 4) Best practices for improving productivity and avoiding software and hardware issues, with special consideration for GPU workloads.

Teaching method: The course will include both frontal classes and hands-on sessions. All necessary study materials will be provided during the lectures.

Objectives: This short course is designed to enable students to acquire key knowledge and skills for managing computational workloads – like data analysis and processing, especially of large scale data effectively running script and processing data – with the UNIX shell and Python on CPU and GPU servers, as well as providing them with a clear description of the research computing infrastructures available at CIMeC.

Evaluation method: Multiple choice exam.

Lecturers: P. Rota, S. Teso, S. Tessari

STATISTICAL METHODS FOR NEUROSCIENCE

Prerequisites: The course is targeted to any student enrolled to the Doctorate program in Cognitive and Brain Sciences, regardless of the previous background.

Contents: The course will address following topics:
Basics of statistical programming and data manipulation and transformation.
Basic parametric analyses: t-test, linear regression & Analysis of Variance.
Basic parametric analyses: binomial & χ2 tests, and categorical data analysis.
Linear Mixed models.
Non-parameric tests: rank-based and resampling-based analyses.
Principal component analysis and factor analysis.
Robust regression, ordinary least squares analyses and multivariate regressors.
Machine learning classification.

Teaching Methods: The course will be organized over approx. 20 lecturing hours. The course slides will be accessible on Moodle, together with complementary reading materials. Despite this, attendance, active participation and discussion during the course are highly encouraged.

Objectives: This course will provide an introduction to the most prominent statistical methods within Neuroscience and Psychology. Specifically the course will range from standard approaches for descriptive and inferential statistics (t-test, ANOVA, chi-square tests), frequently used in these fields, to more advanced methods (robust analyses, bayesian inferences, machine learning prediction). The main objective is to ensure that students enrolled to the Doctoral program share a rich and common methodological expertise, regardless of their previous background.

Evaluation method: In order to examine both students' knowledge of the lectures' content and their ability to apply the said knowledge in addressing research questions, the final exam will be organized as follows. Each student will have access to a dataset (e.g., simulated data provided by the lecturers), and will be introduced to a research problem described in terms of:
main research question
experimental paradigm used to address this question
nature of the data collected
Students will be asked to analyze the data to address the experimental question of interest, by employing relevant preliminary, main and follow-up tests. Furthermore, students will be asked to draft a brief report describing the procedure used, the results found and the associated interpretation.

Lecturer: C. Corradi Dell'Acqua

PYTHON FOR OPEN NEUROSCIENCE

Content: This course introduces the Python programming language, starting from the basics and progressing to more advanced topics. The goal is to equip participants with the necessary tools to tackle common challenges in laboratory work, using Python for handling large matrices and datasets, data aggregation and statistical analysis, machine learning, visualizations, simulations, and hardware control. The course is designed for both beginners and those with prior experience in Python.

Teaching Method: A combination of theoretical lessons, hands-on exercises, and homework assignments to reinforce learning and foster autonomy in using Python.

Objectives: To provide practical skills for data analysis and visualization, the use of specialized libraries for neuroscience, and integration into laboratory workflows.

Evaluation method: Pass/fail evaluation based on the completion of exercises and a final project applied to a research problem.

Lecturer: S. Assecondi

6 – RESEARCH COMMUNICATION

DATA VISUALIZATION & CONFERENCE PRESENTATIONS

Content: This course explores how thoughtful visual communication can turn complex data into clear, persuasive stories. We begin with a brief historical overview of data visualization, then learn to read and interpret graphs, charts and maps, to select the most appropriate visual form for a given audience, and to recognise the many ways in which visual displays can mislead. Moving from fundamentals to practice, each participant will work with a data set—either their own or a freely available one—transforming it into at least two contrasting graphics and discussing the benefits and drawbacks of each choice with classmates.
Building on these skills, we shift our focus to the scientific poster as a distinct genre. We discuss how posters differ from talks and papers, examine layout, typography, colour and overall "gestalt," and consider how to balance fine-grained detail with an instantly graspable take-home message. Students will then design a full poster describing a study of their choice and present it in a mini-conference session, receiving feedback on both the visual design and the oral delivery.
By the end of the course you will be able to craft insightful data visuals, translate them into an engaging poster, and guide viewers through your findings with confidence.

Teaching methods: Lecture + Student presentation and group discussion

Objectives:

- Explain the historical development of data visualization and its role in scientific communication.
- Accurately read, interpret and critique common visual formats—including graphs, charts and maps.
- Choose the most appropriate visualization strategy for different datasets, audiences and communicative goals.
- Detect and avoid misleading visual practices that can distort quantitative information.
- Create at least two distinct, well-justified visualizations of a chosen dataset and articulate their respective strengths and limitations.
- Apply principles of layout, typography, colour and gestalt to design a coherent, engaging scientific poster.
- Integrate multiple visuals into a unified narrative that highlights key findings while maintaining clarity and brevity.
- Deliver a concise, persuasive poster presentation, fielding questions with confidence and clarity.
- Offer and incorporate constructive peer feedback to refine both visual design and oral delivery.
- Critically evaluate posters and data visuals produced by others, identifying areas of strength and opportunities for improvement.

Evaluation method: Data visualization task + Poster presentation

Lecturer: R. Bottini

CONFERENCE PRESENTATIONS

Content: This module will cover several aspects of conference presentation including: (i) Visual aids during conference presentation (slide aspect/structure; graphs and charts); (ii) Structure of the talk (talk outline, subparts, scope and depth); (iii) Speech (use of voice, emphasis, "live" demonstrations); (iv) Delivery (delivery style; control of anxiety). During the class, students will be asked to prepare a short presentation of a study of their choice (either their own data, or freely available ones) and briefly present it in front of their colleagues, receiving feedback about all the aspects mentioned above.

Teaching methods: Lecture + Student presentation and group discussion

Objectives:

- Visual Aids – Create clear, appealing slides, graphs, and charts.
- Talk Structure – Organize content logically with an effective introduction, main points, and conclusion.
- Speech Techniques – Control voice, pace, and emphasis; possibly include brief demonstrations.
- Delivery – Develop a confident presentation style and manage anxiety.

Evaluation method: Oral presentation

Lecturer: R. Bottini

WRITING AND HOW TO RESPOND TO REVIEWERS

Contents: This module consists of four 3-hour lectures that cover the following materials. The first lecture gives an overview of the general structure of a scientific paper, dissecting and discussing the internal structure of all its parts (from the choice of journal to the acknowledgements section) and their connections, giving suggestions for the order in which they may be developed. The second lecture covers the issue of plagiarism in scientific writing, defining it, discussing its reasons and how serious it is, providing various examples and checks to avoid it. In the third lecture, students present their homework 1, and this is followed by a discussion of alternative scientific outputs relative to the standard research article. In the fourth lecture, each student reviews homework 2 from their colleagues and then present their homework with the feedback received. The course does not cover language aspects of writing, which are covered in the course “Academic Writing”.

Teaching method: Frontal lectures, reading & writing homework exercises, in-class presentations and discussions

Objectives: The main objectives include: i) Improve proficiency in scientific reading & writing by enhancing the awareness of the basic components in a research article; ii) improve the awareness of plagiarism forms and ways to avoid them; iii) learn how to effectively respond to reviewer's comments and revise the article accordingly; iv) become aware of various different forms of scientific communications beyond the classical research article.

Evaluation method: Pass/fail based on presence (at least 3 of the 4 lectures) and delivery of all homework in the established time.

Lecturer: J. Jovicich

HOW TO REVIEW A JOURNAL ARTICLE

Contents: This module is designed to introduce students to the activity of peer review of a Journal Article. It will consist of 3 two-hour lessons during which we will discuss (i) what a peer review is and its role in the scientific flow (ii) how to perform peer review and the main challenges (iii) available guidelines, ethical and practical considerations.

Teaching method: The course will consist of a combination of frontal lectures and practical exercises.

Objectives: Provide the student with an overview of the peer-review process and enable him/her to develop a routine to perform a journal article review.

Evaluation method: During the practical activity, students will work in pairs to review a preprint, taking on the roles of reviewer 1 and reviewer 2. In the second part of the course, they will present their work to their colleagues and receive a pass/fail evaluation.

Lecturer: A. Dodich

ACADEMIC WRITING

Contents: The course focuses on shaping the draft of a text so that it best achieves its goals and meets the expectations of target readers. The texts produced will be sections of a research paper. The initial focus is on enhancing the clarity of the content through improving the flow, the placement of and emphasis on information, and the readability. The improved texts are then revised by an AI tool, and the differences between the original and the AI version are discussed and evaluated. Follow-up practice exercises are provided to develop understanding of common language issues.
Specific topics to be addressed include:

- analysing genres to identify audience, aims, and patterns of organization
understanding and avoiding plagiarism
- improving academic style: register, citations, structures, and punctuation
- writing effectively: achieving clarity through choice of grammatical subject and of verb, effective placement of information within sentences, appropriate amount of information in
a sentence, connections between sentences, connections between paragraphs.
- considering readers' knowledge: language options for prioritising or backgrounding
information and explanations
- paragraphing for ease of reading
- writing concisely
- expressing an appropriate level of confidence: hedging and boosting
- automated revision of texts and other tools for academic writing
- evaluating rephrasing suggested by AI – which version is better and why?
- the effect of grammatical choices in areas such as word order, articles, tenses, participle
clauses, noun phrases, relative clauses, parallel structures and punctuation

Teaching method: An active approach is used, with participants drafting, discussing, and revising short texts related to their academic work. Lessons consist of a mixture of teacher explanation, practice exercises, and class/group discussion of participants' own writing and of revisions suggested by AI tools. At the start of the course participants are required to complete the Self-Paced Course on Academic Writing on didatticaonline.unitn.it/postlaurea. This consists of 5 modules covering basic principles of effective writing. During the course, students are required to draft 2 short written texts, and to revise each text based on peer and teacher feedback so that it is ready for superficial language editing, justifying their revisions. Students are then required to further revise the text and justify the language choices made. At the end of the course, each student produces 2 lists summarizing what they have learnt from
the course: their points to bear in mind at the drafting/initial editing stage, and the language knowledge they would like to apply in their future writing.

Objectives: The course aims to further students' ability to draft a part of an academic paper and then improve it through a variety of tools, applying their knowledge of textual, grammatical, and lexical features of written academic English.

Evaluation method: The production and revision of 2 short academic texts and the production of 2 lists summarizing what the student has learnt from the course are required components for completion of the course.
An exam during the last lesson tests students' ability to apply the content of the course. Several short academic texts are provided, each of which must be revised for one aspect of writing covered on the course.

Lecturer: CLA faculty

6 – TEACHING ASSISTANCE

As an integral part of the training program, and subject to the approval of the Executive Committee, Students can carry out the following duties:

a) NOT FOR CREDIT: paid or informal/unpaid Supervision/Tutoring students in undergraduate and master's degrees at the University of Trento (unlimited);
b) FOR CREDIT: supplementary teaching activities involving up to a maximum of 40 hours (prep + frontal teaching time) for each year of the PhD. The recognition of these hours is equivalent to the amount of preparation time including frontal time. In case they are carried out in actual lessons, then the 40 hours correspond to 5 lessons: i.e., 8 hours of preparation time, 2 hours of lesson delivery. If a 1-hr lecture then 4-hour prep time are recognized.
c) CO-TEACHING: class supervision, teaching assistance during hands-on activities in presence with course lecturer. Counts as half the hours of Teaching Assistance in b) ie., 4 hours of co-teaching will amount to 2 of Teaching Assistance in PhDigital.

5.
EVALUATIONS

Evaluations are necessary to maintain the health and quality of the PhD program. Whenever requested, they are to be carried out by the Supervisor, the PhD Student, and OC members independently in order to ensure minimum requirements are met regarding the quantity and quality of the research and educational objectives. The outcome of the evaluations is monitored by the EYE-C, Administration, and with regards to research activity, by the OC. Ultimately a yearly report of the evaluations is sent to the University of Trento's Evaluation Group (*Nucleo di Valutazione*).

Currently there are 3 types of evaluations sent to the PhD students:

- End Year Supervisor, OC and Mentor
- Individual PhD Courses (received anonymously prior to course test/essay is delivered)
- End Year General PhD Program (anonymous)

7.
CODE OF CONDUCT

Honesty in Computer and Other Equipment Use
Theft, damage or misuse of the equipment is forbidden as it takes advantage of all the other users who will lose the use of the resources. Allowing unauthorized non-CBS Doctoral Program people access to the equipment is strictly prohibited as it reduces the amount of equipment available for CBS users and may lead to thefts. Network usage concerning downloading of material and files and placing material on the web must be restricted to work-related items. In particular, CBS computers should not be used for downloading media files from websites that encourage copyright infringement.

Use of Facilities
The Doctoral Program offers a number of facilities to the Students, such as telephone and printer usage and internet access; these services must be used only for work related activities and not for personal purposes. Moreover, their usage is restricted to Students, who should not invite external people to use CBS services. All data collected from your experiments should be saved on the UNITN computers, which are backed-up on a routine basis.

Workspace
Students are expected to be quiet and respectful of others in the shared workspace. The workspace is shared by several people and so it is necessary to let everybody do his/her work quietly and with the needed concentration. The workspace, as well as the use of shared facilities, is a privilege which is based on courtesy, respect for one's neighbours, and common sense. If the behavior of the Student interferes with his/her colleagues, then the privilege of CBS-provided workspace may be revoked.

Tests/Assignments
If there is any confusion concerning the tests/assignments, it is your responsibility as a Student to seek clarification from the lecturers. Violating an exam policy takes unfair advantage of other Students in the class and compromises the trust of the instructor.

Papers and Reports
Students are required to produce reports and research papers during their careers at the University. In collecting data and information, Students need to actively avoid plagiarizing the work of others or using generative AI tools. Proper footnoting of source material and documentation of borrowed ideas are absolutely essential. Texts reproduced from any other document (published paper, webpage, etc…) must be clearly cited as the work of others.

Affiliations and Acknowledgements
When presenting a paper, a poster, or a talk you must acknowledge CIMeC in your affiliations. If you are funded by a UniTN fellowship, then CIMeC must be the primary affiliation as well as the UNITN's PhD program sponsors: the Autonomous Province of Trento, the Fondazione Cassa di Risparmio di Trento e Rovereto and the Municipality of Trento. If you are funded by external grants (e.g., from IIT or FBK), you must still acknowledge CIMeC as your secondary affiliation.

Communications
It is the responsibility of PhD Students to receive and answer to the messages sent to their "UNITN" e-mail address within a reasonable time frame, independently of the place they are.

Violations of to the Codes of Conduct are a serious matter. Consequences can range from a disciplinary note from the Executive Committee to expulsion by the Doctoral Program Committee.

8.
STUDENT HONOR CODE

The objective of the Doctoral Program is to provide Students with a high-quality education and prepare them for research careers in academia or industry. A core aspect of scientific work is maintaining scientific integrity, first as a Student, and later as a researcher. In science and academia, scientific misconduct harms the entire community and may even set back scientific work in extreme cases such as data fabrication. It is with this in mind that we have set forth our ethical code: an Honor Code at the Cognitive and Brain Sciences Doctoral Program that is meant to guide you through your responsibilities as Students and practicing scientists. The Honor Code provides guidance and information regarding the expectations of Students and staff in our Doctoral Program and complements, but does not replace, the University of Trento ethics regulations[1].

The Honor Code at the CBS Doctoral Program aims at cultivating a community based on trust, academic integrity and honor. It specifically aims at accomplishing the following:

- ensure that Students, faculty and administrators understand that the responsibility for upholding academic honesty at CBS Doctoral Program lies with them;
- prevent Students from gaining an unfair advantage over others through academic misconduct;
- ensure that Students understand that academic dishonesty is a violation of trust: the trust of the academic and non-academic community in the results, and, ultimately, of the tax-payers who fund our research;
- cultivate an environment at the CBS Doctoral Program where academic dishonesty is not tolerated among the Students.

1. Honesty

Honesty with others and the CBS Doctoral Program in regard to both academic and non-academic issues is fundamental in creating and maintaining a good environment at the CBS Doctoral Program. The standard that should guide the Students is whether their conduct is morally just.

2. Lying, Deception, and Fraud

Any attempt to gain an advantage or to avoid a consequence by lying, deception or fraud is not acceptable behavior at the CBS Doctoral Program.
Examples of lying, deception, and fraud include falsifying records of time and attendance at work, providing false information to a CBS Doctoral Program official, and failing to take responsibility for personal conduct.

3. Scientific misconduct: Plagiarism / Fabrication / Falsification

Scientific misconduct will not be tolerated and can lead to expulsion from the program.

Plagiarism: The way in which Students communicate their ideas reflects their writing and analytic ability. For this reason, Students are expected to communicate their ideas using their own phrasings, and attribute any prior ideas or language to their source. Verbatim citations from written or online resources should be enclosed in quotation marks and accompanied by an accurate citation. Do not make minor changes or word substitutions to prior written work in an attempt to avoid citing it. If you are unclear on how to cite a particular resource, consult your faculty Supervisor or use the American Psychological Association format.
Copying text from your own prior work (or your Supervisor's) is considered self-plagiarism. Although often considered less blameworthy than other forms of plagiarism, self-plagiarism is nonetheless a form of scientific misconduct.
You should cite any prior source that directly influences your scientific treatment of the topic in question. This includes research design, code, analytic strategies or more general ideas. Failing to cite or properly attribute ideas to their source results in a misrepresentation of the Student's intellectual or writing ability. When citing primary sources based on reading of secondary sources such as chapters or review articles, you should make clear that the primary materials were not directly evaluated.

Fabrication and Falsification. Data fabrication involves any form of creating data sets or adding data to existing ones. This is an extreme form of scientific misconduct and will not be tolerated. "Findings" reported from fabricated

[1] https://www.unitn.it/sites/default/files/2025-05/code_of_ethics_29_05_2014.pdf

data cannot be replicated and result in wasted time and resources within the scientific community. Data falsification is any attempt to alter existing data including modifications of means or variances. Students should not invent, alter or delete data collected. Students must maintain records of all original data and share them with their Supervisor. Procedures for data filtering (e.g., outlier removal or discarding participants) should be consulted on and approved by the faculty Supervisor. In particular "P-hacking" should be avoided: null results are a frequent outcome in scientific studies, and Students should not aim to analyse their data to the point they obtain a "significant" ($p < .05$) result. Similarly, when multiple analysis strategies exist, whether or not a strategy results in a significant result should not be considered a factor in selection of an analysis to report. Students should consider reporting null or statistically marginal findings, as they are essential to future meta-analyses and for the assessment of the research project as a whole. While you are responsible for your work, you should consult with your Supervisor on such issues; they are the ones bearing the final responsibility for the communicated work and have the last word on these.

Any misrepresentation of others' work as if it was the Student's own (i.e.,plagiarism) or instances of data fabrication or manipulation will be referred to the Executive Committee for disciplinary action.

4. Discrimination, sexual harassment and other inappropriate behavior

Discrimination, sexual harassment and other inappropriate behavior, as deemed such by the Doctoral Program Committee, is contrary to the University's ethical regulations and is considered as a violation. Serious violations will be reported to the police. Should you feel you are a victim of any inappropriate behaviour, you can contact the Confidential Counsellor (Consigliera di Fiducia), a lawyer appointed by UniTN to offer counselling to manage issues of discrimination, mobbing or sexual harassment within the work environment. https://www.unitn.it/en/about-us/equity-diversity-inclusion/equal-opportunities-and-identities/harassment-and-bullying

Consigliera di Fiducia
tel. +39 338 4941157
Consiglieradifiducia@unitn.it

5. Respect Others

Every person has a fundamental right to be treated with respect. Every member of the CBS Doctoral Program is expected to treat others in a way that will foster to the well-being of everyone at the CBS Doctoral Program and in the community. Advancing in the PhD program via scientific misconduct (as described in section 3) is ethically wrong and also results in a skewed allocation of resource (extension, prizes etc.) and harms one's peers. For this reason, if you know of any of the school's Student who engages in misconduct you should consider raising this issue with them.

6. Disciplinary Measures

Serious violations will be treated as follows:
The Students and his/her Supervisor will be asked for an explanation of the events by the Executive Committee.
The Executive Committee decides whether or not to admonish the Student or to refer the case to the Doctoral School Committee recommending expulsion.
The Doctoral School Committee reserves the right to expel a Student, even immediately.