Study Plan

School: Institute for Research and Advanced Training
Degree: Doctorate
Course: Health, Technologies and Well-being Sciences (cód. 705)

Specialization Health Sciences and Wellbeing

1st Year - 1st Semester
Specialization Health Sciences and Wellbeing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
ENF13706D	Epistemology of Health and Wellbeing Sciences	Health Sciences	9	Semester	234
ENF13725D	Bioethics	Philosophy	6	Semester	156
CMS13707D	Advanced Research Methodologies I	Health Sciences	9	Semester	234

Options

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13715D	Content Analysis in Health Sciences	Health Sciences	6	Semester	156
ENF13716D	Big Data in Health Sciences and Technologies	Informatics	6	Semester	156
CMS13717D	Risk Management and Patient Safety	Health Sciences	6	Semester	156
GES12560D	Entrepreneurship and Innovation	Management	6	Semester	156
SOC13719D	Vulnerable Populations	Sociology	6	Semester	156
ENF13720D	Active and Healthy Aging	Nursing	6	Semester	156
ENF13721D	Health Contracting and Financing Models	Management	6	Semester	156
CMS13722D	Oral and Written Communication in Science	Health Sciences	6	Semester	156
CMS13723D	Digital Health	Health Sciences	6	Semester	156
CMS13724D	Health Technology and Assessment	Health Sciences	6	Semester	156

1st Year - 2nd Semester
Specialization Health Sciences and Wellbeing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13735D	Advanced Studies Seminar in Health and Wellness Sciences	Health Sciences	9	Semester	234
CMS13708D	Advanced Qualitative Research Methodologies	Health Sciences	6	Semester	156
CMS13786D	Thesis Project on Health and Welbeing Sciences	Health Sciences	9	Semester	234

1st Year - 2nd Semester
Specialization Health Sciences and Wellbeing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours

Options

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13715D	Content Analysis in Health Sciences	Health Sciences	6	Semester	156
ENF13716D	Big Data in Health Sciences and Technologies	Informatics	6	Semester	156
CMS13717D	Risk Management and Patient Safety	Health Sciences	6	Semester	156
GES12560D	Entrepreneurship and Innovation	Management	6	Semester	156
SOC13719D	Vulnerable Populations	Sociology	6	Semester	156
ENF13720D	Active and Healthy Aging	Nursing	6	Semester	156
ENF13721D	Health Contracting and Financing Models	Management	6	Semester	156
CMS13722D	Oral and Written Communication in Science	Health Sciences	6	Semester	156
CMS13723D	Digital Health	Health Sciences	6	Semester	156
CMS13724D	Health Technology and Assessment	Health Sciences	6	Semester	156

2nd Year - 3rd Semester
Specialization Health Sciences and Wellbeing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13787D	Seminar on the development of thesis I in Health Sciences and Welbeing	Health Sciences	6	Semester	156
Thesis					

2nd Year - 4th Semester
Specialization Health Sciences and Wellbeing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

3rd Year - 5th Semester
Specialization Health Sciences and Wellbeing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13788D	Thesis II Development Seminar in Health and Welbeing Sciences	Health Sciences	6	Semester	156
Thesis					

3rd Year - 6th Semester
Specialization Health Sciences and Wellbeing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

Specialization Nursing

1st Year - 1st Semester
Specialization Nursing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
ENF13706D	Epistemology of Health and Wellbeing Sciences	Health Sciences	9	Semester	234
ENF13725D	Bioethics	Philosophy	6	Semester	156
CMS13707D	Advanced Research Methodologies I	Health Sciences	9	Semester	234

Options

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13715D	Content Analysis in Health Sciences	Health Sciences	6	Semester	156
ENF13716D	Big Data in Health Sciences and Technologies	Informatics	6	Semester	156
CMS13717D	Risk Management and Patient Safety	Health Sciences	6	Semester	156
GES12560D	Entrepreneurship and Innovation	Management	6	Semester	156
SOC13719D	Vulnerable Populations	Sociology	6	Semester	156
ENF13720D	Active and Healthy Aging	Nursing	6	Semester	156
ENF13721D	Health Contracting and Financing Models	Management	6	Semester	156
CMS13722D	Oral and Written Communication in Science	Health Sciences	6	Semester	156
CMS13723D	Digital Health	Health Sciences	6	Semester	156
CMS13724D	Health Technology and Assessment	Health Sciences	6	Semester	156

1st Year - 2nd Semester
Specialization Nursing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
ENF13709D	Advanced Nursing Studies Seminar	Nursing	9	Semester	234
CMS13708D	Advanced Qualitative Research Methodologies	Health Sciences	6	Semester	156
ENF13789D	Nursing Thesis Project	Nursing	9	Semester	234

1st Year - 2nd Semester
Specialization Nursing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Options					

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13715D	Content Analysis in Health Sciences	Health Sciences	6	Semester	156
ENF13716D	Big Data in Health Sciences and Technologies	Informatics	6	Semester	156
CMS13717D	Risk Management and Patient Safety	Health Sciences	6	Semester	156
GES12560D	Entrepreneurship and Innovation	Management	6	Semester	156
SOC13719D	Vulnerable Populations	Sociology	6	Semester	156
ENF13720D	Active and Healthy Aging	Nursing	6	Semester	156
ENF13721D	Health Contracting and Financing Models	Management	6	Semester	156
CMS13722D	Oral and Written Communication in Science	Health Sciences	6	Semester	156
CMS13723D	Digital Health	Health Sciences	6	Semester	156
CMS13724D	Health Technology and Assessment	Health Sciences	6	Semester	156

2nd Year - 3rd Semester
Specialization Nursing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
ENF13713D	Seminar on the Development of Thesis I in Nursing	Nursing	6	Semester	156
Thesis					

2nd Year - 4th Semester
Specialization Nursing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

3rd Year - 5th Semester
Specialization Nursing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
ENF13714D	Nursing Thesis II Development Seminar	Nursing	6	Semester	156
Thesis					

3rd Year - 6th Semester
Specialization Nursing

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

Specialization Health and Technology

1st Year - 1st Semester
Specialization Health and Technology

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
ENF13706D	Epistemology of Health and Wellbeing Sciences	Health Sciences	9	Semester	234
ENF13725D	Bioethics	Philosophy	6	Semester	156
CMS13707D	Advanced Research Methodologies I	Health Sciences	9	Semester	234

Options

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13715D	Content Analysis in Health Sciences	Health Sciences	6	Semester	156
ENF13716D	Big Data in Health Sciences and Technologies	Informatics	6	Semester	156
CMS13717D	Risk Management and Patient Safety	Health Sciences	6	Semester	156
GES12560D	Entrepreneurship and Innovation	Management	6	Semester	156
SOC13719D	Vulnerable Populations	Sociology	6	Semester	156
ENF13720D	Active and Healthy Aging	Nursing	6	Semester	156
ENF13721D	Health Contracting and Financing Models	Management	6	Semester	156
CMS13722D	Oral and Written Communication in Science	Health Sciences	6	Semester	156
CMS13723D	Digital Health	Health Sciences	6	Semester	156
CMS13724D	Health Technology and Assessment	Health Sciences	6	Semester	156

1st Year - 2nd Semester
Specialization Health and Technology

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13727D	Seminar on advanced studies in Health and Technologies	Health Sciences	9	Semester	234
CMS13800D	Advanced Quantitative Research Methodologies	Health Sciences	6	Semester	156
CMS13790D	Health and Technologies Thesis Project	Health Sciences	9	Semester	234

1st Year - 2nd Semester
Specialization Health and Technology

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Options					

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13715D	Content Analysis in Health Sciences	Health Sciences	6	Semester	156
ENF13716D	Big Data in Health Sciences and Technologies	Informatics	6	Semester	156
CMS13717D	Risk Management and Patient Safety	Health Sciences	6	Semester	156
GES12560D	Entrepreneurship and Innovation	Management	6	Semester	156
SOC13719D	Vulnerable Populations	Sociology	6	Semester	156
ENF13720D	Active and Healthy Aging	Nursing	6	Semester	156
ENF13721D	Health Contracting and Financing Models	Management	6	Semester	156
CMS13722D	Oral and Written Communication in Science	Health Sciences	6	Semester	156
CMS13723D	Digital Health	Health Sciences	6	Semester	156
CMS13724D	Health Technology and Assessment	Health Sciences	6	Semester	156

2nd Year - 3rd Semester
Specialization Health and Technology

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13791D	Seminar on the Development of Thesis I in Health and Technologies	Health Sciences	6	Semester	156
Thesis					

2nd Year - 4th Semester
Specialization Health and Technology

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

3rd Year - 5th Semester
Specialization Health and Technology

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
CMS13792D	Seminar on the Development of Thesis II in Health and Technologies	Health Sciences	6	Semester	156
Thesis					

3rd Year - 6th Semester
Specialization Health and Technology

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

Conditions for obtaining the Degree:

*** TRANSLATE ME: Para conclusão do curso (componente curricular) é necessário a aprovação (através de avaliação ou creditação) das seguintes unidades curriculares:

1.º Ano

1º semestre

3 UC obrigatória num total de 24 ECTS

1 UC optativas do grupo de optativas num total de 6 ECTS

2º semestre

3 UC obrigatória num total de 24 ECTS

1 UC optativas do grupo de optativas num total de 6 ECTS

2.º Ano

1 UC obrigatória num total de 6 ECTS

3.º Ano

1 UC obrigatória num total de 6 ECTS

Para obtenção do grau, é necessário também a aprovação na Tese com um total de 108 ECTS decorrente no 2.º e 3.º Ano ***

Program Contents

Back

Epistemology of Health and Wellbeing Sciences (ENF13706D)

1. Characterization of Health and Wellbeing Sciences – Historical and social evolution
a. From the mythical-ecological perspective to positivist hegemony
b. From simple causality to causal complexity
2. Characterization of Health and Wellbeing Sciences as an area of knowledge - Epistemological perspective
a. Criteria for knowledge development: revolution, evolution, integration
b. Criteria for perceiving reality
c. Truth criteria
3. Complexity as a source of thought and agenda setting in Health and Wellbeing Sciences
4. Transdisciplinarity as a determinant in research protocols in Health and Wellbeing Sciences
5. Mapping the boundaries of values, scientificity and objectivity:
a. Epistemology of nursing sciences
b. Scientificity and epistemology in health technologies and wellness
c. Public health ontology and the transdisciplinary field of scientific knowledge.

Back

Bioethics (ENF13725D)

I - Introduction to Bioethics, Deontology and Law: Fundamental Principles of Bioethics; Overview of the Code of Ethics of the several Health Professional Association; Health Professional Liability (Civil, Criminal and Disciplinary).
II – Lectures and case studies with dilemmatic situations on major ethical and legal issues of contemporary practice of health professions, including: the duties of health professionals, informed consent, professional secrecy (confidentiality), the expert in health, errors in health care and patient safety, emergency, the revelation of truth, the patient in jail, gene therapy, embryo's rights, abortion, euthanasia, dysthanasia, medically assisted reproduction, sterilization, transplantation, the advance directives and clinical research (using the TRREE e-learning platform).

Back

Advanced Research Methodologies I (CMS13707D)

- Epidemiological research; study design and causality
- Effect and association measures in epidemiology: relative risk, odds ratio, relative benefit, number needed to treat, number needed to harm, incidence rate ratio
- Clinical trial phases I, II, III, IV
- Superiority versus non-inferiority clinical trials
- Diagnostic tests: sensitivity, specificity, predictive values and ROC curves
- Stratified analyses and logistic regression; confounding and effect modification
- Kaplan-Meier survival analysis and Cox regression
- Determination of the sample size and power in a clinical study.
- Case studies of clinical epidemiology

Back

Content Analysis in Health Sciences (CMS13715D)

I. Theoretical-epistemological assumptions of content analysis in health sciences: outline, potentialities and challenges.
II. Methodological approaches: contexts, languages and techniques of content analysis.
III. Sampling, corpus, manual and computer-assisted analytical strategies.
IV. Categorization and inference: reliability and validity in the analysis of small and big data.
V. Visualization techniques, scientific writing and findings' dissemination.

Back

Big Data in Health Sciences and Technologies (ENF13716D)

- "Big Data": fundamentals and basic concepts;
- "Big data" in the health area: heterogeneous and semi-structured data (medical records, exams, IoT); ethical and legal issues;
- Main processes in "big data analysis": collection, cleaning, transformation, analysis, visualization, interpretation;
- Automatic learning approaches for classification, grouping / clustering and identification of correlations in the data.
- Construction of explanatory and predictive models.
- Solutions in the "cloud"and frameworks for "big data analysis"
- Case studies: analysis and implementation of solutions.

Back

Risk Management and Patient Safety (CMS13717D)

- Quality in Health and Patient Safety: Dimensions of quality in health
- Fundamentals of Risk Management and Patient Safety
- Patient Safety in different countries
- Epidemiological studies on AE's and prevention strategies
- Human Factors and patient safety
- Work analysis and ergonomic intervention; Ergonomics and patient safety
- International Patient Safety Goals
- Healthcare acquired infections
- Leadership and Safety culture
- Research on patient safety

Back

Entrepreneurship and Innovation (GES12560D)

Part I
1.1 Entrepreneurship Characterization
1.2 Comparison and Analysis (Macro) of Entrepreneurship
1.3 The entrepreneurial process
1.4 Intra-entrepreneurship or corporate entrepreneurship
1.5 Understanding innovation and connection with entrepreneurship
Part II
2.1 Dynamics of Innovation: Technology as innovation agent
2.2 Dynamics of Innovation: The innovator´s dilemma
2.3 Dynamics of innovation: Dominant design
2.4 Dynamics of innovation: An integrated model
2.5 Diffusion of Innovation

Back

Vulnerable Populations (SOC13719D)

- Health vulnerability: conceptual issues
- Vulnerability and social determinants of health
- The health of vulnerable populations: equity and accessibility
- Literacy and health inequalities in situations of vulnerability
- health Literacy action plan for vulnerable groups/ populations

Back

Active and Healthy Aging (ENF13720D)

1- Context of population aging
2- Aging and life Course
3- Model of active aging (WHO, 2002); Model of heathy aging (WHO, 2015)
4- Aging and functionality
5- Health, Wellbeing and Aging
6- Active aging promotion programs
7- Place of Health Education in the promotion of AA

Back

Health Contracting and Financing Models (ENF13721D)

1. Financing and Contracting in Health: strategic thinking, historical and conceptual framing.
2. Principles, elements and facilitators of health contracting.
3. Contracting in the perspective of integration of care.
4. Contracting and Health Value.
5. The modeling effect of funding models in organizations.
6. Hospital internal contracting: facilitators and barriers.
7. The construction of a plan of action: indicators, objectives and goals.
8. Negotiation techniques for the viability of trading processes in the field.

Back

Oral and Written Communication in Science (CMS13722D)

Organization and planning of presentation at an international scientific conference.
Adequacy and submission of papers at international conferences.
Advanced theoretical orientations on discursive practices in science.
Understanding of the writing process and submission of a scientific article in a journal with an impact factor.
Criteria for evaluating quality and evaluating journals.
Writing of the scientific component of a research project: problematization, state of the art, methodological component, scientific referencing.
Development of self-criticism components in relation to the knowledge produced.

Back

Digital Health (CMS13723D)

1) Digital Health - Concept, Evolution and Perspectives
2) Big data, Large databases, Information Systems and Information Management
3) Telemedicine and telehealth
4) Monitoring and Tele-monitoring systems (sensors, nanotechnology)
5) Artificial Intelligence, Machine Learning and Internet of Things
6) Robotics
7) Anatomical Models and Simulators
8) Medical Devices - Design and implementation
9) Medical Devices - Integration in information networks and clinical perspectives
10) Tissue Engineering, Biocompatibility and Biofabrication of Tissues and Organs
11) Cybersecurity, ethical aspects, confidentiality
12) Patient-Centered Innovation, Entrepreneurship and Transfer to the Market

Back

Health Technology and Assessment (CMS13724D)

Module 1.- Concept of Health Technologies.
1.1. Preliminary Considerations about Technology(s) and Health.
1.2. Health Technologies: genesis and recent guidelines.
1.3. Health and Wellness Technologies Agenda.
Module 2.- Technologies, Health, Well-Being and Society.
2.1. Technological development standards in the field of Health and Wellness.
2.2. Public policies and Health Technologies.
2.3. Health Technology Assessment.
Module 3.- Technologies, Knowledge and Health Care Delivery.
3.1. Health Technologies and Professions.
3.2. Technological discourses in Health and Well-being: rhetoric and realities.
3.3. Health Technologies to meet people.

Back

Advanced Studies Seminar in Health and Wellness Sciences (CMS13735D)

The promotion of health in the individual and family life cycle, discussion of the concept and state of the art.
Critical and sensitive periods in the life cycle - opportunities for disease prevention and health promotion.
Birth and healthy growth: current status and strategies for achieving gains in maternal and child health.
The mother-child interaction and early childhood intervention.
The health of young Portuguese. Favorable factors for a healthy adolescence. Learning self-management of health and the prevention of risk behaviors.
Active and healthy adult life. The prevention and control of chronic diseases and health problems most prevalent in Portugal and in Europe.
Well-being, physical activity and healthy nutrition throughout the life cycle.
The national priority health programs.
The promotion of a healthy and active aging.

Back

Advanced Qualitative Research Methodologies (CMS13708D)

Qualitative methods: definition, basic conceptual principles and application contexts
Distinction between quantitative and qualitative methods in health: advantages and disadvantages of choosing / applying different approaches;
Complementarity between qualitative and quantitative approach in epidemiological studies
Theoretical orientations in qualitative research: different types of studies
Ethics and qualitative research
Application of qualitative methods in health research
Drawing a qualitative study: phases of a research protocol
Different techniques of data collection: semi-structured interviews, observation, focus groups, document analysis, case study
Data analysis
Presentation and discussion of results
Writing a qualitative research
Criteria for evaluating the quality of qualitative research
Possibilities and limits of qualitative methodologies
Practical examples

Back

Thesis Project on Health and Welbeing Sciences (CMS13786D)

The syllabus of this course aimed to scientifically frame the problem to investigate, to trace the state of the art of the selected theme, to announce clearly the objectives of the study and to identify possibilities of work and the expected results. The syllabus includes: literature review, definition of objectives, proposal of the experimental design, expected results, thesis schedule and public presentation, discussion and defence of the thesis project.

Back

Seminar on the development of thesis I in Health Sciences and Welbeing (CMS13787D)

1. Cycle of seminars or lectures on current research in Health Sciences and Welbeing:
a. Guest speaker sessions
b. Sessions co-organized by doctoral students
2. Winter School I:
a. Presentation, reflection and debate about the state of the art of doctoral research subjects;
b. Discussion of doctoral research progress reports.

Back

Thesis II Development Seminar in Health and Welbeing Sciences (CMS13788D)

1. Cycle of seminars or lectures on current research in health and welbeing sciences:
a. Guest speaker sessions
b. Sessions co-organized by doctoral students
a. Winter School II:
a. Presentation, reflection and debate about the state of the art of doctoral research subjects;
b. Discussion of doctoral research progress reports.

Back

Advanced Nursing Studies Seminar (ENF13709D)

1. Nursing as a knowledge discipline
a. The material domain or object of study;
b. The possible set of observable phenomena;
c. The level of theoretical integration;
d. The methods;
e. Analysis tools;
f. Practical applications;
g. Historical contingencies
2. Nursing as a profession
a. Characteristics of a profession
b. Building professionalism
3. The dialogue between the discipline and the profession through research

Back

Nursing Thesis Project (ENF13789D)

The syllabus of this course aimed to scientifically frame the problem to investigate, to trace the state of the art of the selected theme, to announce clearly the objectives of the study and to identify possibilities of work and the expected results. The syllabus includes: literature review, definition of objectives, proposal of the experimental design, expected results, thesis schedule and public presentation, discussion and defence of the thesis project.

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Seminar on the Development of Thesis I in Nursing (ENF13713D)

1. Cycle of seminars or lectures on current research in Nursing:
a. Guest speaker sessions
b. Sessions co-organized by doctoral students
2. Winter School I:
a. Presentation, reflection and debate about the state of the art of doctoral research subjects;
b. Discussion of doctoral research progress reports.

Back

Nursing Thesis II Development Seminar (ENF13714D)

1. Cycle of seminars or lectures on current research in Nursing:
a. Guest speaker sessions
b. Sessions co-organized by doctoral students
2. Winter School II:
a. Presentation, reflection and debate about the state of the art of doctoral research subjects;
b. Discussion of doctoral research progress reports.

Back

Seminar on advanced studies in Health and Technologies (CMS13727D)

Thematic semminars will be framed within the following subjects:
Management of patient safety in healthcare.
Healthcare quality and innovation.
Biomechanics in Health.
Neurocognitive systems and health technologies.
Health diagnostic technologies.
Cell and gene therapy technology.
Health information technology.
Health technology services and devices.

Back

Advanced Quantitative Research Methodologies (CMS13800D)

- Definition, history and development of epidemiology, public health and populations health.
- Research questions.
- Design, indications, advantages and disadvantages of different types studies.
- Observational, population and experimental studies. Phases of clinical trials.
- Calculation, analysis and interpretation of epidemiological measures of frequency, association and impact.
- Measures of epidemiological risk. Measurement of exposures and outcomes: types of errors in epidemiology.
- Causal Inference.
- Application criteria and measures of validity of screening and diagnosis tests.
- Evaluation of determinants of chronic noncommunicable diseases.
- Critical and systematic appraisal of reports on epidemiological research and scientific articles.
- Evaluation of papers using STROBE and CONSORT criteria.
- Design of a research study protocol.
- Impact assessment, cost/benefit and cost/effectiveness.
- Translating clinical and population research into health policies

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Health and Technologies Thesis Project (CMS13790D)

The syllabus of this course aimed to scientifically frame the problem to investigate, to trace the state of the art of the selected theme, to announce clearly the objectives of the study and to identify possibilities of work and the expected results. The syllabus includes: literature review, definition of objectives, proposal of the experimental design, expected results, thesis schedule and public presentation, discussion and defence of the thesis project.

Back

Seminar on the Development of Thesis I in Health and Technologies (CMS13791D)

1. Cycle of seminars or lectures on current research in health and technologies:
a. Guest speaker sessions
b. Sessions co-organized by doctoral students
2. Winter School I:
a. Presentation, reflection and debate about the state of the art of doctoral research subjects;
b. Discussion of doctoral research progress reports.

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Seminar on the Development of Thesis II in Health and Technologies (CMS13792D)

1. Cycle of seminars or lectures on current research in health and technologies:
a. Guest speaker sessions
b. Sessions co-organized by doctoral students
2. Winter School II:
a. Presentation, reflection and debate about the state of the art of doctoral research subjects;
b. Discussion of doctoral research progress reports.