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Student Handbook Annex – TRACEE Master ST3

Study Track 3: Energy and Matter

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1 The study track 3: Energy and matter

The study track Energy and matter (ST3) equips students with advanced expertise in sustainable energy storage, conversion, and chemistry applications essential for renewable energy systems.

1.1 The vision of the study track

Students will develop, through modules energy conversion, storage and sustainable chemistry, the technical and theoretical skills needed to innovate within the fields of energy storage, clean energy production, and environmentally focused chemistry.

1.2 Target group of students: Entry requirements

The ST3 aim for student with a Bachelor in Natural Science or Engineering including at least 30 ECTS in Chemistry. A fluent level of Spanish is required (equivalent to Spanish B2) in order to follow the courses in the Autonomous University of Madrid (UAM).

1.3 Intended Learning outcomes of the study track

In addition to the learning outcome for the programme, the student will, at the end of ST3, be able to:

- Demonstrate the technical skills to address energy challenges across various sectors.
- Demonstrate the ability to participate in research and development work to take an innovative role in renewable energy systems.

1.4 Structure overview of the study track 3

The study track is divided in 4 semesters of 30 ECTS each for a total of 120 ECTS.

The study track takes place at Stockholm University (SU), Autonomous University of Madrid (UAM) and, depending of the residence origin of the student during application, eventually at the University of Bucharest (UB).

- The first semester corresponds to the programme common core. It takes place in Stockholm (SU) in autumn and is described in the Student Handbook.
  Autumn semester 2026: 31 August 2026 – 17 January 2027
- The second semester is the first part of the study track specialisation in Energy and matter. It takes place during the spring semester in Madrid (UAM).
  Summer semester 2027: [Start date and end dates to be decided]
- The third semester is the second part of the study track specialisation in Energy and matter. It takes place during the autumn semester of the second year in Stockholm (SU).
  Autumn semester 2027: 30 August 2027 – 16 January 2028
- The fourth and last semester is dedicated to the final degree project, the Master thesis. It takes place during the spring semester 2028 at SU, PLUS or UB.
  SU: 17 January 2028 – 4 June 2028
  UAM: [Start date and end dates to be decided]
  UB: [Start date and end dates to be decided]

Study track	**Semester 1**	**Semester 2**	**Semester 3**	**Semester 4**
ST3: Energy and matter	SU	UAM	SU	SU or UB
	Common Core	**Study Track**		**Master Thesis**
	Transdisciplinary stream			

2 Study track content overview

The study track overview by study progress is presented below:

Partner university	Type	Module Title	Semester				ECTS
			1	2	3	4	
SU	Mandatory	Climate, Energy and Environment – A Transdisciplinary Perspective • Systems Thinking (3 ECTS) • Climate, Environment and Energy – A Natural Science Perspectives (9 ECTS) • Climate, Environment and Energy – A Social Science Perspectives (9 ECTS) • Climate, Environment and Energy – A Humanities Perspective (6 ECTS) • Creating Knowledge Through Transdisciplinary Methods (3 ECTS)	30				30
UAM	Mandatory	Biomass and biodegradable wastes		4			30
	Mandatory	Photovoltaic and photoelectrochemical conversion		5			
	Mandatory	Photovoltaic and thermoelectric systems		4			
	Mandatory	Hydrogen: Production, storage and use		6			
	Mandatory	Energy storage and fuel cells		6			
	Mandatory	Marine and Hydroelectric Energies		4			
	Mandatory	Course from cross-curricular offer		1			
SU	Mandatory	Introduction to Sustainable Chemistry			7.5		30
	Mandatory	Materials Chemistry for Environmental Applications			7.5		
	Mandatory	Chemistry of Renewable Materials			7.5		
	Mandatory	Chemistry of Renewable Energy Generation and Storage			7.5		
SU / UAM / UB	Mandatory	Master Thesis				30	30
			30	**30**	**30**	**30**	**120**

3 Your semester at Autonomous University of Madrid (UAM)

3.1 Arrival and welcome activities

Before the semester starts, students receive **IT credentials** and access to the digital platforms used for teaching (Moodle, Virtual PC). Orientation information is communicated by UAM/Faculty of Science ahead of the spring term.

3.2 Housing

There is **no guaranteed on-campus housing** at UAM. Students arrange accommodation **individually** in Madrid and are advised to start early, especially for the spring semester. Popular areas with good links to the campus include **Plaza Castilla / Chamartín**, **Fuencarral–El Pardo**,

Alcobendas, and **San Sebastián de los Reyes** (direct C4/bus connections). Use reputable platforms and UAM's student information channels; always request a **written contract**, verify the **exact address and transport time**, and avoid **up-front cash payments** before viewing. Flat-shares are the most common option among master's students. If you need short-term accommodation on arrival, consider a **hostel/hotel or temporary room** while you search locally.

UAM's **on-campus option** is the **Residencia Universitaria Erasmo** (Cantoblanco), a purpose-built residence with **~765 places** and full student facilities; places are limited and bookings open well in advance. web For a city-based option well connected to campus, UAM also runs the **Colegio Mayor Universitario Juan Luis Vives** (near **Plaza Castilla**). web Always check the official pages for current availability, application windows and conditions. web

3.3 Living expenses

A typical **student budget in Madrid** is around **€900–1,300/month**, mainly driven by rent and location. As guidance: everyday items cost roughly **€12–15** for a *menú del día*, about **€170/month** for groceries, **€1.50** for a coffee, and **€1.5–2.5** for a soft drink. Public transport offers a monthly pass: **€10** (under 26) or **€32.70–38.20** for adults (zones A–B1). On-campus residence prices (Erasmo) commonly start near **€515–€700/month** depending on room type and contract. Always check current rates and your zone before purchase/booking. Web. A detailed living expenses document in spanish are available at link.

3.4 Transport

The easiest way to reach campus is by Cercanías line C4 to Cantoblanco Universidad, about a 10–12 minute walk from the Faculty of Science. Alternatively, several interurban buses (714, 827, 827A, 828) enter the campus and stop near the main buildings. From the city centre (Sol/Gran Vía), most students take metro or Cercanías to Chamartín or Nuevos Ministerios and transfer to the C4; from the airport, go to Canillejas for buses 827/828, or take Cercanías T4 → Chamartín → C4. For daily commuting, a monthly travel pass is most convenient; single tickets are available at train machines or on board the bus. The campus has free surface parking with signed access from M-607/M-616. Always check official apps for timetables, especially evenings and weekends.

3.5 Navigating campus

Maps & key locations. UAM's main site is **Cantoblanco Campus**. The **Faculty of Science** is split across the *Science Building* (C/ Francisco Tomás y Valiente, 7) and the *Biology Building* (C/ Darwin, 2). Downloadable **campus** and **building** maps are available; the Science Building map includes module layout and concierge contact. Study-room locations (quiet and group) are also mapped. web

Library & extended hours. The **Science Library** sits next to the Faculty complex; opening hours are published online. During exam periods, the adjacent **Sala Búho** opens with extended hours and has a separate ramp entrance when the main library is closed. Check daily schedules before visiting. web

Getting around & to campus. Cantoblanco is connected by **Cercanías C4 (C4a/C4b) – Cantoblanco Universidad** and interurban buses (e.g., 714/827/827A/828). On campus, wayfinding signage links the train stop, **Plaza Mayor**, and the Faculty area. web

Connectivity. Campus Wi-Fi uses **eduroam**. Device-specific setup guides (Windows, macOS, Linux, iOS, Android) are provided by UAM; authenticate with your **ID-UAM** account. web

Accessibility. Campus routes and buildings include ramps and elevators; students with specific needs should coordinate any accommodations with the university's **Diversity & Disability** office. web

3.6 Student health

Health coverage.

EU/EEA students can use the **European Health Insurance Card (EHIC)** or private insurance to access Spain's public healthcare during their stay; **non-EU** students must hold **private medical insurance** valid in Spain for the whole mobility. UAM's International Office provides practical guidance and links. web

Travel/accident insurance.

For mobilities and trips, UAM offers an optional **OnCampus** travel assistance policy; equivalent cover from other providers is also accepted. Separately, Spain's **Seguro Escolar** (for students **under 28** enrolled in official studies) provides statutory coverage for certain contingencies on Spanish territory. web

Mental-health support.

The **Centro de Psicología Aplicada (CPA–UAM)** provides psychological **consultation and counselling** (pre-assessment and referral to appropriate services). Information and contact are published on the CPA site. web

Students should verify their **assigned local health centre** in Madrid according to their residential address and keep insurance documents (EHIC/insurance certificate) accessible at all times. web

3.7 Special needs and disability support

UAM provides centralized support through the **Área de Atención a la Diversidad Funcional** (Office of Social Equity). Students with disabilities or specific learning needs can **register** to request reasonable accommodations (teaching, assessment, campus accessibility), **psychopedagogical tutoring**, and access to **assistive products** (via Fundación ONCE/Universia) and **adapted library services** (extended loans, accessible study desks with assistive tech). Contact **diversidad.funcional@uam.es** to arrange a **prior appointment**. Office: **Plaza Mayor (ground floor), c/ Einstein 7, Cantoblanco; +34 91 497 76 28**. web

3.8 Resting and contemplation rooms

Quiet study areas and **reading rooms** are available throughout the Faculty and the **Science Library**; opening hours extend during exam periods.

3.9 Student organisations

UAM has a vibrant student-led community with **inter-faculty associations** (sports, culture, debate, volunteering, international) and **Faculty of Science associations** (science outreach, ecology, hiking/diving, role-playing, biology-focused groups, etc.). Students are welcome to join or create associations via UAM Estudiantes.

General (inter-faculty) examples: Erasmus Student Network (ESN UAM), UAM Rugby, Society of Debates, Amnesty International UAM, Club de Robótica y Mecatrónica (CRM), Lumen Cine Club, SAS-UAM (diving), UAM Entiende (LGBTQ+), FFIPP, EUC (Encuentros, Universidad y Cultura). web

Faculty of Science associations (selection)_ Antares, AHE-BOSCAI, Club Alpino, Club de Rol "El Concilio", Eh! Coli, Manuela Malasaña, Mala Yerba, NAO, QED, SEO Montícola, Vivero y Huerto. Location maps and one-page briefs for each group are available on the Faculty site. web

Full and up-to-date lists, contact emails, and how to join are published on the UAM associations hub and the Faculty of Science page. web

3.10 Language courses

Teaching at UAM in Semester 2 is **in Spanish** (B2 recommended). Digital teaching support is provided via **Moodle** (UAM's standard platform), with training and media services supported by the **Unidad de Apoyo a la Docencia** (Polimedia, videoconference room, mediatheque).

UAM offers **Spanish for international students** through several options:

- **Servicio de Idiomas (UAM Idiomas):** semester-long Spanish courses, plus **intensive** formats and short workshops (in-person and some remote). web
- **Spanish Language & Culture (Study Abroad): 4 ECTS** intensive course (≈4 weeks) combining grammar, colloquial Spanish and cultural activities in Madrid. web
- **Puente a la UAM: year-long intensive** Spanish programme aimed at achieving **B2** proficiency; also available as modular micro-credentials. web

Students should choose the option that best matches their entry level and timing.

4 Your semester at Stockholm University (SU)

The services provided at Stockholm University for the semester within the Study Track Energy and Matter are the same than the ones provided during the first semester (Common core) listed in the student handbook.

5 The Master Thesis

You have the possibility to register your Master thesis as a course either at SU, UAM or UB for the final semester of the programme that take place during the spring semester 2028.

Students in ST3 residing in Sweden or Spain at the time of the application must be admitted to the University of Bucharest (UB) in the semester 4

The procedure of registration, assessment method and examination follow the local regulations of the university responsible.

5.1 The master thesis at Stockholm University

Students at Stockholm University would register to the course: "Transdisciplinary Studies of Climate, Environment and Energy, Independent Project".

The independent project is 30 ECTS and aims to provide experience and advanced knowledge in scientific and transdisciplinary work within the fields of climate, environment, and/or energy. Key elements include planning, execution, and reporting. Additionally, students will practice literature review, writing a scientific report, and presenting research results orally in seminars.

The course is divided into two parts:

- Part 1: Planning (5 ECTS). Assessment is based on a written report
- Part 2: Implementation (25 ECTS). Assessment is based on an oral and written presentation of the independent project

More information is available in the syllabus of the course.

5.2 The master thesis at Madrid

Information coming soon.

5.3 The master thesis at the University of Bucharest

At the University of Bucharest, students are required to enroll in the course "Independent Project in Transdisciplinary Studies of Climate, Environment, and Energy – Research Activities, Master's Thesis Preparation."

This independent project, worth 30 ECTS, is designed to provide students with hands-on experience and advanced knowledge in scientific and transdisciplinary research within the fields of climate, environment, and energy. Key components of the course include planning, execution, and reporting, along with opportunities to develop essential research skills such as:

- Conducting a literature review
- Writing a scientific report
- Presenting research findings in seminars

For additional details, students are encouraged to refer to the course syllabus.

Throughout the semester, under the guidance of their coordinators, students will focus on collecting, analyzing and interpreting data, conducting in-depth analyses of academic literature related to their thesis topic, writing reports, presenting intermediary research results, and understanding the ethics of transdisciplinary research. This process is designed to ensure a transdisciplinary approach to their final thesis.

Additionally, students will receive support in engaging with relevant external stakeholders, including representatives from NGOs, public institutions, legal organizations, research institutes, environmental advocacy groups, policy-making bodies, etc.

Contact us

Do you have any questions?
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