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UPC Virtual Postgraduate Fair

From 3 to 7 March



UPC Virtual Postgraduate Fair

Master's degree in THERMAL ENERGY ENGINEERING



The UPC







The UPC







* Campus for initial vocational and continuing education in automotive engineering, sustainable mobility and advanced industry.



Much more than studying



Students
associationsCooperation
pojectsAwards and
competitionsSports











ETSEIB: Escola Tècnica Superior d'Enginyeria Industrial de Barcelona

Over 170 years of educating professionals with a very strong scientific and technical foundation

https://etseib.upc.edu/



First semester Lectures in the afternoons

Second semester Master Thesis

Barcelona School of Industrial Engineering (ETSEIB)

100% 60 English ECTS

Compulsory credits Optional credits Credits - Master's tesis w/o internship	20 10 30
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- Solar and Renewable Energy
- Heating Ventilation Air Conditioning & Refrigeration
- Computational Fluid Dynamics & Heat Transfer
- High Performance Computing
- Numerical and Experimental methods in Thermal Engineering
- Recent advances in Heat and Mass Transfer

The aim is to produce scientific and technical experts with the knowledge and skills needed to analyse any engineering problem in the fields of thermal energy and fluid dynamics







Mandatory courses

- Thermal Systems and Equipment. Heating and Cooling.
- Computational Methods in Thermal Engineering
- Energy Resources
- Intensification on Heat and Mass Transfer

Elective courses

- Turbulence
- Heat Exchangers
- Experimental Measurement Techniques
- Heat Engines







• Generation, transport, storage and use of energy.











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Thermal Equipments for Heat and Cold Generation

Digital Twins LICE SLUI Predictive control

Thermal Power Plants

HEAT PUMPS

EVAPORATIVE COOLING Indoor Air Quality

HEAT

EXCHANGERS

 ICE SLURRIES
 B
 ABSORPTION MACHINES

 ICE SLURRIES
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 ICE SLURRIES
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Register in season







Thermal Equipments for Heat and Cold Generation





Thermal management of an aircraft





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Computational Fluid Dynamics and Heat Transfer

Fluid Particle

agrang Euler

Two Phase Flow Solid Fluid Interaction char Natural Convection **a** Eul TURBULENCE Conjugate Heat Navier Stokes Equations COMPRESSORS RANS modelling Magneto Hydrodynamics Large Eddy Simulation







Master's degree in Thermal Energy Engineering Computational Fluid Dynamics and Heat Transfer

Perfection Register Bestients Bestie

Direct Numerical Simulation DNS of Differential Heated Cavity





Computational Fluid Dynamics and Heat Transfer







Now, UPC Register Information session: Development of the masters degrees!

Thermal and Fluid Dynamic Simulation on Energy generation





Computational Fluid Dynamics and Heat Transfer







Jets

Air Conditioning

Inhale medicins







• Experimental Measurement Techniques



Heat Pumps Heat Exchangers Solar Collectors Storage Tanks

Laboratory Facilities







- Ten Actual Research Projecte Topics
- 1. Thermal management optimization axial motors for electrical vehicles
- 2. New concepts of Hydrogen storage tanks for zero emission aircrafts
- 3. Pollutant and Green house emissions monitoring
- 4. Design and Development of publci charge electrical batteries
- 5. Thermocline concepts for thermal energy storage in Concentrated Solar Power
- 6. Ejectors design modelisation
- 7. Numerical modelling and experimental validation of H2 fuel implementation in sanitary kilns
- 8. Development of highway transport refrigerated units with low GWP refrigerants
- 9. Development of Digital Twins for ECS architectures
- 10. Advance numerical algorithms for 3D heat exchangers design







How to apply

www.etseib.upc.edu/en → Academic Programmes → How to apply to ETSEIB'S academic programmes

Application:

Round 1 (February 24th to March 23th) Round 2 (April 21th to May 18th)

- * Recommentation to apply on the first round. In case we don't open second round.
- Provisional list of accepted people:

Round 1: End of April 2025 Round 2: End of June 2025

- People seat acceptance: Up to 7 days from the pubication list
- Definitive list of accepted people: Mid July 2025
- Enrollment: September 2025



How to apply

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Applications Round 1 February 24th to March 23th of 2025



Applications Round 2 April 21th to May 18th of 2025

https://www.upc.edu/en/masters/access-admission-enrolment/pre-enrolment

General Information, Admission and access requirements and syllabus @

Required documentation for the application @

https://etseib.upc.edu/en/Academic%20programmes/academic-procedures/acces/documentation



UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH

How to apply

Contact information

admissions.etseib@upc.edu

https://demana.upc.edu/etseib/