



UNIVERSITÀ
DEGLI STUDI DI TRIESTE

FACULTY OF ENGINEERING
MASTER UNIVERSITARIO DI 1° LIVELLO
1ST LEVEL MASTER

ASSISTIVE TECHNOLOGY

ASSISTANCES FOR WIDE USERS



Education in Assistive Technology: the Master Degree of the University of Trieste

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Accessibility, Assistive Technology, Ambient Assisted Living and Design for all



ACCESSIBILITY: - the "ability to access" a specific functionality

- crucial for people with disabilities
- not to be confused with usability
- strongly related to "design for all"

ASSISTIVE TECHNOLOGY: - the ways to access specific functionalities

- includes assistive, adaptive, rehabilitative devices and the process of selecting, locating and using them

AMBIENT ASSISTED LIVING: - methods, systems, and services based on the daily life situation of the assisted person

DESIGN FOR ALL: - design philosophy targeting at the use of products and services by as many people as possible without the need for adaptation

What is Design for All?



Have we designed for all these people?

Design for all is not just for the disabled and the elderly



Barriers are not only architectural, for example electronic ones!



The main reasons for the Master in Assistive Technology at the University of Trieste



Shortage (in Italy) of higher education about assistive technologies independent from AT sellers

Necessity of increasing of the high competitiveness and the awareness of AT market

Lack of education conceived by the engineering point of view (it is the unique Master of this kind in a Faculty of Engineering in Italy)

Lack of assistive technology education subjected to social psychological, pedagogical medical approach

Will to accomplish a "designed for all" Master both in the contents (because design for all is one of its topic) and in the approach (because its structure allows a wide participation)

Contribution to a common basis for a community of AT experts

The target of the Master



Prerequisites:

- at least three years University degree (also with a non technical background)
- basic knowledge of English

Architects

Social workers

Professional trainers

Physiotherapists

Computer
scientists

Physicians

Engineers and designers

Teachers

Ergonomists

Occupational
therapists

Persons in charge of staff

Economists

Any graduated
interested in AT

Psychologists

At the end of the Master the participant will be able to



Manage complex and interdisciplinary assessments

Handle complex problems with end users, AT producers and institutions

Develop project management skills in AT (**disability manager**)

Take responsibility for the choice and purchase of technologies and aids

Collaborate with professionals of various cultural backgrounds

Participate in technological research projects of the European Union

Deal with an international AT market and consumer

The Master is in **blended learning** and corresponds to 1500 hours per student

Lectures and e-learning	43 ECTS
Seminar activities	7 ECTS
Dissertation thesis	10 ECTS

2) ECONOMY AND MARKETS OF ASSISTANCE

Fundamentals

- ? Consumer with specific needs
- ? Quality trademarks for assistances
- ? Quality trademarks for houses
- ? The market of AT products
- ? Shop of aids: meeting point between consumers and producers
- ? Disability Manager: competences, roles, constraints and professional opportunities

Legislation

- ? Comparison of different Assistive Technology legislations in Europe
- ? Accessibility of legislation by users

1) FUNDAMENTALS OF AT How to comply with the blended learning Master

- ? The potentialities of e-learning, DOCEBO and how benefiting from the Master

Basics of Assistive Technology

- ? Hints and exercise about ICF
- ? Professionals of different disciplines working in group
- ? Integrations among competences, groups, network and community – first and second part

- ? Knowledge Management in AT

Design for all Principles

- ? Human needs and habitats
- ? Methodologies for analysing user needs
- ? Applications of design methodologies about user requirements
- ? Design for All and AT
- ? Upgrading design for users with specific needs

3) DESIGN AND TECHNIQUES FOR INDUSTRIAL PRODUCTION

Design and production

- ? Design for All and European regulations
- ? Design for All: examples of technologies and products
- ? Aesthetics in designing aids, environments and services for extended users: between usability and new human factors
- ? Industrialization and project methodologies for production in series
- ? Industrialization and project methodologies for niche production
- ? Mechanical production in rehabilitation
- ? Characteristics of industrial materials
- ? Design methodologies in Assistive Technologies: theories and applications
- ? Visit to the robot laboratories of the SSSA
- ? Visit to the domotic house
- ? Robotics supporting daily activities
- ? Aids design and distribution

Evaluation

- ? Evaluation methodologies in Assistive Technologies
- ? Evaluating Assistive Technology design: the social perspective
- ? Knowledge Support Systems in designing assistive technologies
- ? Evaluation and upgrading of an existing built environment

4) ASSISTANCES AND TECHNOLOGIES FOR WELFARE

Elderly people and technologies

- ? Frail elderly people
- ? Internet and elderly people
- ? Frailty and domestic accidents
- ? Innovative aids for frail elderly persons with disorientation problems
- ? Elderly people and services in Europe
- ? New rights for old problems

Mobility

- ? Tools for personal mobility
- ? Technological solutions for pedestrian paths: urban and natural environment
- ? Visit to the FIAT Mobility Centre
- ? Norms and adaptations of cars for guide and transport
- ? Mobility Manager: role, experience and planning of mobility in town paths for people with specific needs
- ? Signs for visually impaired people
- ? Alzheimer garden

Safety

- ? Safety in local transports for users with specific needs
- ? Risks evaluation in architectural design
- ? Emergency situations and persons with specific needs
- ? Safety and architectural barriers norms

Domotics and comfort

- ? Fundamentals of domotics
- ? New technologies in outdoor environment
- ? Housing and socio-assistive structures for users with specific needs
- ? Distributed intelligence in domotics housing
- ? Adaptation of spaces in existing buildings and in open spaces

Telemedicine and e-Health

- ? Health and teleassistance: applications in Europe
- ? Hand computers for home assistance
- ? Integrated systems for telemedicine
- ? Innovation in socio-assistive environments



Physical accessibility

- ? Laboratory on hardware and software interfaces for visual impairments
- ? Computer aids in motor and cognitive disabilities. Tools and methods
- ? Acoustic prosthesis for augmentative and alternative communication. Aids and methods
- ? Use of environments with reduced ability
- ? Hardware for interacting by computer
- ? Informatics for hearing impairments. ? Sign language on hand computers
- ? Technologies of natural language and accessibility

Virtual accessibility

- ? Multimedia information (Internet, CD rom, ...) and visual, hearing and cognitive impairments
- ? W3C Guidelines for designing accessible websites – first and second part
- ? Accessibility of search engines and forums
- ? Accessibility and usability of websites
- ? Software systems for communication and mobility

Study and work

- ? Ergonomy of workplaces for people with specific needs
- ? Vocational training and work of impaired person in Europe
- ? Didactic software for cognitive disabilities – Theory and Exercises
- ? State of the art, case-histories, experiences and prospects of work for disabled people

Personal Care

- ? Orthosis, prosthesis and materials for external prostheses
- ? Aids for incontinence
- ? Aids for preventing decubitus
- ? Robots for rehabilitation
- ? Instrumental evaluation for prescription of aids – Theory and Practice

Tourism, sport and free time

- ? Sport aids and possibilities of practising them
- ? How Europe is facing tourism for all: projects and initiatives
- ? Paralympics



5) EUROPEAN RESEARCH AND FUNDING Research

- ? European Social Fund. Opportunities and perspectives
- ? Consortium of European Building Control access for all: the survey
- ? European Research: AT results and funding
Regional, National and European funds for Assistive Technology
- ? Ambient Assisted Living: a new Program devoted to frail people

Beyond lectures and e-learning lessons, didactics is supported by e-forum with an online tutor and a tutor in presence, laboratories and visits to research centres. Front activities are obligatory only for 5 days at choice.

Seminar activities and/or internships (7 ECTS)

Internships (about themes agreed with some Master's teacher) are alternative to seminar activities and are held at public or private bodies

Examples of seminar activities are: papers about AT to be published on technical magazines or publications, reviews about AT communication on websites



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Thank you very much for paying attention
Fiorenza