

Curriculum Traffic & Transport information design

Modul / Lecture, tutorial, seminar, class, workshop	ECTS	Description "Know" *	Can do *
Information Design Basics			
1. Semester			
Quality of information, information design context	3,5	Information defined with the purpose of (a) user(s) in mind, modelling personas, the role of the information provider, historical roots of information design; properties of high-quality information, requirements and principles of transformation of data into high-quality information, knowing the options for visualization depending on the subject matter that needs to be made understood and acted upon, concepts of services vs. needs of users, terminology, multi-language information, cross-cultural information; the purpose behind information design commissions and the interests of commissioners, partners, users, competitors; problem description/analysis, case studies, user task analysis, environmental concerns, strategy development, design methods, participatory processes involving commissioners/clients, specialist advisors, anticipated users / user representatives to project development; the challenge of effective coordination; the role of media and politics in decision making and promotional activities	
Perception and Cognition	0,5	Subjective and objective perception and cognition, learning, understanding and experiencing information, basics of decision making processes	
Key information elements and conventions	0,5	Conventions and standards of SI units, signals, graphical symbols and signs; communication conventions: phone, email, snail mail; spelling words, indicating time, abbreviating languages, countries, currencies and amounts	
Vizualization	4	Visualizing information (facts, relationships, concepts and activities/processes): tables, charts and diagrams, network planning, co-ordinate indexing, didactic drawings, comics, ISOTYPE, technical drawings, axonometry, geographical and themed maps	Transforming data / facts, relationships, concepts and activities/processes into conventional visual representations, static and/or dynamic

		2D and 3D	
Animated information	2	Principles of animation, cognitive limitations, available software	Animating information to alert attention and enhance comprehension
Writing for understanding	3	Readability criteria for writing in one's mother tongue and in English, reading grade levels, etiquette, considering requirements underlying the automatic translation of information for text and voice output	Professional writing according to criteria of reading grade levels with regard to defined audiences in own language and English, considering requirements of automatic translation; editorial consistency in the use of typographic coding
Typography	2	Principles of typography; structuring information; information mapping; content of typographic toolbox and applications; legibility, colour, contrast	Determining appropriate type (face, weight, size, colour) and structuring text information for optimal comprehension; editorial consistency in the use of typographic coding
Sound, haptic and olfactoric information	1		Applying sound, haptic and olfactoric elements to enhance the effectiveness of information
Inclusive/universal design requirements	1,5	Knowing the documented requirements of people with special needs, above all people with visual, cognitive and/or hearing impairments	Designing information that meets the requirements of people with special needs with regards to defined tasks, goals and situations of use
Interface and interaction design	2,5	Traditional and electronic interfaces, screen/display interaction, interaction with suppliers/help desks, user profile-based information retrieval, multi-language information presentation	Designing interactive purpose oriented interfaces, traditional and electronic
Evaluation methods including feedback generating techniques	3	Methods of opinion research; evaluation methods indicating information elements which result in good and/or poor or wrong understanding and/or applicability; application of benchmarking methods, interpretation of results, methods of triggering instant feedback, documenting, analysing, evaluating feedback and reacting to it, enhancing customer loyalty; task-based performance evaluation methods	Specifying evaluation procedures and taking pre-cautions for continuous user feedback, drafting of benchmarking specifications for testing the quality of information with regard to given performance criteria and needed indications for improving the information, drafting of procedures for handling and acting upon feedback of users and partners involved in the use process
Case study	3	Investigation into information from public sources	
Module colloquium	0,5		

Multimodal Information

27

Designing multimodal information for various purposes with simultaneous consideration of the highest possible safety standards, ease of production, maintenance and updating

2. Semester

Readily available and made-to-measure information carriers	4	Properties of solid, flexible and translucent information carriers for standard use and environmental applications; processing, laminating, joining and bonding techniques; translucent, retroreflective, luminescent materials, wood, metal, plastics and composite materials; special requirements for outdoor use (temperature, rain, snow, sun, wind) and recycling; floating information carriers / electric and electronic information carriers / indoor + outdoor; light boxes, spotlighting, floodlighting, static and dynamic LCD + (O)LED based indicators and displays, video walls, e-ink, "neon" displays, solar panels, solar light guiding and signalling elements, requirements concerning outdoor use and recycling	Determining and specifying conventional and electric and electronic information displays/carriers including power and data feed requirements
Information application and surface protection	2,5	Applying information on boards, vehicles, architecture, scaffolding, hoardings, gantries (e.g. on motorways) by printing, plotting and laser cutting, stencilling, embossing; print varnishing, laminating, heat sealing, anti-graffiti coating; environmental criteria; daylight beaming/projecting for multiple viewers and/or people with visual impairments	Specifying information application and surface protection measures
Self-production and exchangeability of signs	2	Utilization of office machinery and processes; add-on equipment and supporting software	Specifying of required production facilities including relevant software, providing training for office staff
Sound generating devices	0,5	Standardized and multi-purpose sound generators	Specifying sound generators for specific purposes
Touch sensitive displays	0,5	Touch screen technology applications	Employing touch screen technologies to enhance interactive communication with information displayed on displays of self-service facilities
Mobile devices, mobile services	1	Compass and maps, portable GPS navigation systems (including smart phones) and exemplary applications	Employing mobile devices for navigation and real-time information
Introduction into exhibition and environmental design	1	Basics of exhibition and environmental design	

Information storage, translation, transmission and output	3	Data base and data management systems, gateways, information terminals/kiosks, NFC, bar and QR codes, automated translation, information output	
Cross media design tools	2	Software for cross media productions, integrating and overcoming limits of proprietary software	Utilizing appropriate software for design and update measures
Contract management of multimodal information products	1,5	Principles of specifying design, components, materials and processes, estimating labor and other costs, tendering, execution control, final acceptance	Preparing tendering documents, supervising production, assisting clients with final acceptance
Investigations into realized multimodal information	3,5	Original specification, function, reliability, maintenance, running costs, usability, visual appearance, sustainability, feed, foundation/fixation	Applying insights from projects studied
Project work and seminar	5	Design of information for multimodal use, employing cross-media software	Designing information to meet both user and technical requirements of multimodal information systems
Module colloquium	0,5		
Traffic Information	27		Designing traffic information systems for various purposes with simultaneous consideration of the highest possible safety standards, ease of production, maintenance and update
3. Semester			
Wayfinding and wayshowing	0,5	Principles of wayfinding and wayshowing, (architectural) landmarks, information contained in maps and how it relates to the environment, light and colour, distance and travel time, infoconnectivity enhancing interconnected intermodal transport systems, pre-trip information requirements	
Public information	2,5	Expressing meanings through signals, pictograms and graphical symbols (as for timetables) and type; internationally understood key words, colours; comprehension criteria depending on cognition, presented amount of information, viewing time, quality of the display medium, contrast/luminance, information structure, visual acuity of the viewer, environmental conditions; applications on roads, pedestrian precincts, in stations, vehicles and via PCs and mobile devices to communicate transport information, house rules, available services/facilities and their operation, traffic information, guidelines on how to behave in emergencies	

(Proprietary) environmental sign systems outdoor/indoor	1,5	(Proprietary) environmental sign systems outdoor/indoor: range of available products and applicability; requirement of stock-keeping and supply guarantee of spare parts	Comparing advantages and disadvantages of proprietary environmental sign systems, specifying proprietary sign systems, taking precautions to safeguard replenishments
Mounting, fixing and founding	1	Fixing of stable and flexible information carriers on vehicles, walls, scaffolding, hoardings, gantries (e.g. on motorways) and (suspended) ceilings; considering requirements on surfaces and materials (coated and uncoated metal, glass, bricks, concrete, wood), supports and foundations	Specifying mounting, fixing and founding requirements
Global navigation satellite systems, in-car navigation systems and output devices	1	NAVSTAR GPS, Galileo, GLONASS, MTSAT, Compass; PDAs, smart phones, proprietary navigation systems	Employing global navigation satellite systems to enhance mobility
Access enabling devices as part of traffic systems	1	Access enabling devices for restricted access areas (parking spaces, delivery zones, etc.), with and without integrated user profile; card and transponder access systems, key fobs, keywatch, proximity readers, biometric readers, wireless transmitters	Employing identification and access systems and designing their interfaces to speed up the collecting and understanding of information and the use of related facilities
Signage and information systems			Designing traffic and transport information systems for various purposes with simultaneous consideration of highest possible safety standards, ease of production, maintenance and update
Outdoor signage and information systems	3	Signage and information systems for roads, cyclists, pedestrians, stadiums, open-air trade fairs, festivals, urban districts / shopping areas, theme-walks, zoos, botanical gardens, nature reserves and parks, hiking & jogging routes, fitness parcours, skiing slopes, cross-country ski runs, parking lots	
Real-time traffic information	1,5	Dynamic real-time information for drivers in cities and on motorways via VMS (Variable Message Signs) via mobile phones and in-car navigation systems	
Signage for waterways and aviation	0,5	Signage and information systems for waterways and aviation	
Signage and information systems for indoor orientation	2,5	Signage and information systems for indoor orientation: administrative buildings, libraries, museums, hospitals, shopping centers, trade fairs, railway stations, air terminals, parking garages	

Danger warning, rescue and escape information	0,5	General danger warning signs and signals, marking of escape routes, fire fighting installations, rescue facilities and equipment, in buildings and outdoor	
Inclusive/universal design: traffic information requirements	1	Knowing the requirements of people with special needs in public spaces, shopping malls and the intersections to public transport systems	
Laws, regulations and standards	1	Vienna Convention, national road signage and marking regulations; regulations governing the operation of parking lots and garages, technical and medical facilities; standards for public information symbols, safety signs, safety colours, guiding systems in general and for specific purposes; requirements of disability discrimination acts; EEC Directive 91/439 of 29 July 1991 on driving licences; law enforcement regulations, information policies and practice	Safeguarding conformity of designed traffic and transport information with applicable laws, regulations and standards safeguarding conformity of designed traffic and transport information with applicable laws, regulations and standards
Contract management of traffic information products	1,5	Principles of specifying design, components, materials and processes, estimating labor and other costs, tendering, execution control, final acceptance	Preparing tendering documents, supervising production and mounting/fixing, assisting clients with final acceptance
Investigations into realized traffic information systems	2,5	Original specification, function, reliability, maintenance, running costs, usability, size(s), visual appearance, environmental compatibility, feed, foundation/fixation	Applying insights from projects studied
Project work and seminar	5		Singling out a traffic information (re-)design challenge, investigating system function, status of use and level of user satisfaction with regard to defined user groups, tasks and set goals; doing interviews, working in a team
Module colloquium	0,5		

Public Transport Information		27	Designing transport information systems for various purposes with simultaneous consideration of highest possible safety standards, ease of production, maintenance and updating
4. Semester			
The psychology of travel, scheduled and on-demand transport services	2	Historical development of transport services, legal framework and current organizational practice; types of travel for various purposes of various people at different seasons and day/night times; certainty & uncertainty as deciding factor for the choice of transport modes; the role of the ecological footprint and cost implications; pre-trip information requirements; information needs to facilitate the combination of individual transport (on foot, by bike, by car), public and on-demand transport; information requirements in transitional zones	
Public transport information systems 1: Content	2,5	Public transport systems related information, pre-trip and on the move: print and screen timetables, network and route diagrams, indicating fare systems and fare stages, validation procedures, travel duration and area of validity of tickets, conditions for changing modes of transport; providing personalized information	Designing content of public transport systems related information
Public transport information systems 2: Media	1,5	Information access via mobile phone cameras (QR / Quick Response codes, NFC / Near Field Communication tags), info screens, on-board information systems; journey planners	Determining the appropriate media for specific public transport systems related information
Real-time information for public transport users	1,5	Real-time information in multimodal transport systems provided on variable and dynamic public displays, PCs and mobile devices; requirements of dynamic schedule synchronization	Integrating real-time information into public transport information systems
Danger warning, rescue and escape information in public transport systems	0,5	Danger warning signs and signals, marking of escape routes, fire fighting installations, rescue facilities and equipment, in transitional zones, stations and vehicles (trains, buses, ships, aircraft)	Integrating safety information into public transport information systems
Inclusive/universal design: transport information requirements	1,5	Information for people with special needs at home - for preparing for journeys - and on the move, in station precincts, in stations, at stops, in vehicles; PRM TSI / Technical Specification for Interoperability for Persons with Reduced Mobility	Considering the special needs of handicapped people when designing public transport information

Information in case of irregularities	1	Information in case of irregular service due to technical problems or incidents	Taking precautions for information needed in case of irregularities by designing public transport information
Access enabling devices and self-service facilities in public transport systems	1,5	Access enabling devices with and without integrated user profile; card and transponder access systems, key fobs, keywatch, camera equipped mobile phones, proximity readers, biometric readers, wireless transmitters; application areas: public transport systems, recreation and sports facilities, ski lifts, etc.; requirements on interfaces of self-service facilities (information kiosks, ticket machines, self-check-in)	Considering the usefulness and the requirements of access enabling devices and self-service facilities when designing public transport information
Sound signals and acoustic announcements	1	Standard sound signals and their meanings, standard announcements, multi-language announcements, synthetic voice generation	Considering the requirements on sound signals and acoustic announcements when designing public transport information systems
Evaluation methods & quality control of information in public transport systems	2,5	Evaluation of public transport information: availability, appropriateness, effectiveness. Application of benchmarking methods, interpretation of results, methods of triggering instant feedback of travellers on malfunctioning facilities and shortfall of services, documenting, analysing, evaluating feedback and reacting to it, enhancing customer loyalty	Specifying evaluation procedures and taking precautions for continuous user feedback, drafting of benchmarking specifications for testing the quality of information with regard to given performance criteria and needed indications for improving the information, drafting of procedures for handling and acting upon feedback of users and partners involved in the use process
Laws, regulations and standards	1	UIC standards and EC regulations; TSI PRM Rail Vehicle Accessibility (Interoperable Rail System) Regulations; ATOC Vehicles Standard; HSE railway safety principles and guidance; ISO standards for public information symbols, safety signs, safety colours, guiding systems in general and for specific purposes; Requirements of disability discrimination acts	Safeguarding conformity of designed traffic and transport information with applicable laws, regulations and standards
Contract management of (scheduled and on-demand) public transport information products	1,5	Principles of specifying design, components, materials and processes, estimating labor and other costs, tendering, execution control, final acceptance	Preparing tendering documents, supervising production and mounting/fixing, assisting clients with final acceptance
Investigations into realized transport information systems	3	Original specification, function, appropriateness, effectiveness, reliability, maintenance, initial and running costs, usability, visual appearance, environmental compatibility	Applying insights from projects studied when designing public transport information

Project work and seminar	5		Singling out a transport information (re-)design challenge, investigating system function, status of use and level of user satisfaction with regard to defined user groups, tasks and set goals; doing interviews, working in a team
Module colloquium + report	1		
Master thesis and seminar	12		(Re-)Designing a concrete and concise traffic and/or transport information system meeting both documented use requirements and user needs
5. Semester			

ECTS = European Credit Transfer System points, indicating the implied work load of a subject imposed on the student; one point = approx. 25 to 30 hours work.

Teaching Method

Part-time

4 semesters of distance teaching with blocked subjects (1 week/semester) on the spot at the FH St. Pölten

+ 1 semester Master thesis and seminar

* "Know" and "Can do" refers to the Diploma Supplement as requested by the Bologna Process to indicate what students know and what they are able to do after graduation"