WEB TECHNOLOGY AND DATABASES (KDM_KA_INFORMATIONSARKITEKTUR_AAL)

Hovedsektion

This is the course page of Web Technology and Databases. Welcome! The course is comprised by a set of lectures followed by work of evaluating a number of technologies. The exam wraps up the results of the technologies in individualized exams.

Module description

The module will introduce the students to basic web technology, database construction, data modelling, and modelling of search tools. The module consists of a combination of lectures and hands-on exercises to introduce the students to specific tools and methods for constructing databases and web technologies.

Web technologies and databases, 10 ECTS

Place

7 semester, Information architecture

Module Coordinator:

Pär-Ola Zander

Type and language

Study module, English

Objectives

In the module the students will acquire knowledge of:

- Web technologies and their use in knowledge organization

- Databases and their use in knowledge organization
- Search engines

Subject matter

Web technologies, databeases and searches.

Relationship with other modules

No relationships

Scope and expected work

10 ECTS *27.5 hours = 275 hours

Guiding participant condictions

No specific preconditions

Exam

An internal written individual test in: Web technology and databases. The test takes the form of a set take-home assignment to be handed in after 3 days. In the test, the student completes a designated task within the subjects covered by the course. The assignment paper must demonstrate that the student fulfills the objectives for the module stated above. The assignment paper may not exceed 10 pages.

Accessories and other information regarding the exam

Nothing special

Module activities

See below.

Teachers:

Pär-Ola Zander (module coordinator)

Tanja Svarre Jonassen

	Mandatorypages	extra pages	Dig. upload
Connolly, R., & Hoar, R. (2017)01, s. 192-200	8		
Messier, R. (2014). Collaboration with cloud computing: security, social media, and unified communications. Amsterdam ; Boston: Syngress.		19	

In addition, we expect that you spend up to 150DKK in service fees, since you during the course will experiment with various web services.

Announcements

Technologies to evaluate

Skjult for studerende

L1

Preparation: Watch Web Development Foundations at Lynda.com

Study guide for the file: There is a quiz in the end - take that first if you think it may be too easy for you. Ignore the "dealing with data" and "Using SQL..." - they will be covered next lecture.

Describe main course objectives. Explain the main learning approach. Explain the first-order skills that you will develop as students. Explain the second-order capabilities that you will develop.

Group exercise for understanding the boundaries of web technologies. (we will jointly brainstorm on types of web technologies, organise them and compare them to teachers' conception).

	Mandatory pages	Extra pages	Dig. upload
Connolly & Hoar (2015). Fundamentals of Web Development (global edition). Harlow: Pearson. Examples: HTML, clients,web servers. Internet-based APIs for accessing data. Various classes of high-layer technologies (e.g. CMSs).	N/A		
Johnson, S. B. (2003). Systems integration and the social solution of technical problems in complex systems. The Business of Systems Integration, 35–56.	2		
Lemay, L., Kyrnin, J., & Colburn, R. (2011). Sams Teach Yourself HTML, CSS & JavaScript Web Publishing in One Hour a Day.	N/A		
http://www.w3schools.com/			

L2

Examples: HTML, clients,web servers. Internet-based APIs for accessing data. Various classes of high-layer technologies (e.g. CMSs).

	Mandatory reading	Extra reading	Digital upload
Literature: Connolly & Hoar (2015). Fundamentals of Web Development (global edition). Harlow: Pearson.	Unspecificied		
Johnson, S. B. (2003). Systems integration and the social solution of technical problems in complex systems. The Business of Systems Integration, 35–56.	35-56		
http://www.w3schools.com/			
Lemay, L., Kyrnin, J., & Colburn, R. (2011). Sams Teach Yourself HTML,	Unspecifed		
CSS & JavaScript Web Publishing in One Hour a Day.			
Messier, R. (2014). Collaboration with cloud computing: security, social media, and unified communications. Amsterdam ; Boston: Syngress. (chapter 2)		15-42	

L3

Part 1: Introduction to Databases.

- Introduction to databases
- Introduction to structured data and SQL.

Literature:

	Mandatory reading	Extra reading	Digital upload
Connolly & Hoar, ch 11	66 p.		
	66 p.		

Part 2: Practical examples. Example of editing a script. Example of putting up a file on the web (“low-level”). Example of accessing an API.

Literature:

	Mandatory pages	Extra pages	Dig. upload
Janssens, J. (2014). Data science at the command line. O'Reilly, Sebastopol, CA. (and what technical reference literature you may find)		200	
	18	19	0

Part 3 - search engines

- Introduction to search engines and information retrieval
- Introduction to searching unstructured text

Literature:

	Mandatory reading	Extra reading	Digital upload
Connolly & Hoar, ch 20	33 p.		
Croft, Metzler & Strohman, ch 2, 6, 7.	Ch 2, 18 p.	Ch 6-7, 110 p.	
Total	51 p.	110 p.	

Technology Review process Kick-off

Technology review process kick-off (starting Mon X October, ending 19 November)

Our work process will be described here in detail later in the course. Be prepared that your weeks will be pretty filled up in these periods during daytime, as can be seen in the schedule.

In short, we will try out different web and database technologies in small groups, and report the difficulties to class. Different groups will work with different technologies. You will be supervised in the process - not necessarily shown the correct solution, but how to systematically address the challenge, We assume that some students have very little experience with such technologies, and that others are more experienced. The process will ensure that both categories have a stimulating and challenging learning experiences.

Apart from the general literature in the outset of the course, there is no set curriculum for these activities, although you will have to consult manuals in order to evaluate the technologies.

Exam

The course is graded by a 3-day home exam. The exam will be largely based on what you have done throughout the course.

Emne 6

Emne 7

Emne 8

Emne 9

Emne 10

INFORMATION ARCHITECTURE, RHETORIC, AND PERSUASIVE DESIGN (KDM_KA_INFORMATIONSARKITEKTUR_AAL)

Information architecture, rhetoric and persuasive design (project module)

Lecturers: Sandra Burri Gram-Hansen, Ann Bygholm, Marianne Lykke and Tanja Svarre

Module description:

The module will introduce the students to key elements of Information Architecture, including experiential, rhetorical and persuasive design principles. During the course module, the students will engage in lectures and discussions on information architecture, knowledge organisation, rhetoric, persuasive and experience design.

Link to curriculum

Module title:
Information Architecture, Rhetoric, and Persuasive Design
Informationsarkitektur, retorik og persuasive design
15 ects

Place:
7 semester, Information architecture

Module Coordinator:
Tanja Svarre

Type and language
Project module, English

Objectives:

In the module the students will acquire knowledge of:

- Information Architecture
- Rhetoric
- Persuasive design
- Experience design
- Knowledge organisation
- Knowledge of how information architectures participate in an interplay with usability, experiences and learning.

Skills in:

- observing, analysing and interpreting information architectures irrespective of medial and organisational boundaries,
- evaluating the use of rhetoric in ICT systems
- analysing the conceptual control and consistency in information architectures, their communicative effects and potential for further development

Competences in:

- taking an analytical, reflective and critical approach to the use of information architecture, rhetoric, persuasive and experience design
- engaging in an interdisciplinary collaboration on information architectures, rhetoric, persuasive and

experience design in a specific context
- identifying own learning needs and structuring own learning in relation to the use of information architecture, rhetoric, persuasive and experience design in a specific context.

Subject matter
Key elements of Information Architecture, including experiential, rhetorical and persuasive design principles.

Relation with other modules
No relation

Scope and expected work
15 ECTS *27.5 hours = 412,5 hours

Guiding participant condictions
English, B level

Exam
An internal oral test in: Information Architecture, Rhetoric and Persuasive Design. The test takes its point of departure in a project report that may not exceed 15 pages per student in the group, and may not exceed 20 pages for individual projects. Literature foundation: 1500 standard pages supervisor approved, self-selected literature related to the project.

Accessories and other information regarding the exam
Nothing in particular

Module activities
Appears below

Announcements

Announcements

Semester introduction and first lecture

Lecturer: Tanja

Content: Firstly, the lecture introduces the semester. Next the concept of information architecture will be introduced along with the four components of information architecture. After the lecture we will take a tour around the Create building to locate the most important spots of your student life for the next two years.

Literature:

	Required reading	Supplementary reading	Digital upload
Ding, Lin & Zarro (2017). Information Architecture : The Design and Integration of Information Spaces, Morgan & Claypool Publishers. Ch. 1-2. Available here.	24 p.		
Rosenfeld, L., Morville, P. & Arango, J. (2015). Information Architecture for the Web and Beyond. Sebastopol: O'Reilly. Ch. 5. Available here.	20 p.		
Rosenfeld, L., Morville, P. & Arango, J. (2015). Information Architecture for the Web and Beyond. Sebastopol: O'Reilly. Ch. 1-3. Available here.		50 p.	
Total	44 p.	50 p.	

User practice and interaction

Lecturer: Tanja

Content: Understanding users information practice is a prerequisite for designing good information architecture. The lecture introduces the notion of information seeking to provide a framework for understanding users interaction with information. Core models and theories of seeking practice will be used as the point of departure. Also we will discuss the concept of interaction.

Literature:

	Required reading	Supplementary reading	Digital upload
Dourish, P. (2003). The appropriation of interactive technologies: Some lessons from placeless documents. Computer Supported Cooperative Work, 12(4), 465-490. Available here.	25 p.		
Wilson, T.D. (1999). Models in information behavior research. Journal of documentation, 55(3), 249-270. Available here.	21 p.		
Russel-Rose, T. & Tate, T. (2013). Designing the Search Experience: The Information Architecture of Discovery. Waltham: Morgan Kaufmann. Ch. 1-3. Available here.	70 p.		
Kuhlthau, C. (1991). Inside the search process: Information seeking from the user's perspective. Journal of the American Society for Information Science, 42(5), 361-371. Available here.		11 p.	
Kim, K. (2001). Information-seeking on the web: Effects of user and task variables. Library & Information Science Research, 23(3), 233-255. Available here.		22 p.	
Total	116 p.	33 p.	

Labelling systems

Lecturer: Marianne

Content: The lecture will introduce to the labelling, the choice of vocabulary and terms to represent content and communicate with users. The lecture will focus on the users' language use and the derived "vocabulary problem"in Information Architecture.

	Required reading	Supplementary reading	Digital upload
Rosenfeld, L., Morville, P. & Arango, J. (2015). Information Architecture. For the Web and Beyond. Sebastobol (CA): O'Reilly. 133 - 173 (Chapter 7). Available here.	40 p.		x
Lykke Nielsen, M. (2005). Special libraries and specialized vocabularies in the digital age. In: Drake, M. A. (ed). New York: Marcel Dekker. Encyclopedia in Library and Information Science. 7 p.	7 p.		x
Total	47 p.		

Organization systems

Lecturer: Marianne

Content: The lecture will introduce to the field of knowledge organization (KO) – how to represent, describe and organize knowledge in digital systems. The lecture will focus on the role and principles for knowledge organization and on tools.

	Required reading	Supplementary reading	Digital upload
Rosenfeld, L., Morville, P. & Arango, J. (2015). Information Architecture. For the Web and Beyond. Sebastobol (CA): O'Reilly. 53 - 75, 97 - 131. (Chapter 4 and 6). Available here.	66 p.		x
Jacob, E. (2004). Classification and Categorization: A Difference that Makes a Difference. Library Trends 52(3). 515-540. Available here.	25 p.		x
Hlava, M.M.K. (2015). The Taxobook. Principles and practices of taxonomy construction. Morgan & Claypool Publishers. 1-12; 13-47. Available here.	47 p.		
Total	91 p.		

Navigation systems

Lecturer: Tanja

Content: Navigation systems support users' browsing on websites. The lecture will present the concept of navigation from a user and a design perspective .

Literature:

	Required reading	Supplementary reading	Digital upload
Perez-Montoro & Codina (2017). Navigation design and SEO for content-intensive websites. Amsterdam: Chandos/Elsevier. Ch. 2.	54 p.		
Rosenfeld, L., Morville, P. & Arango, J. (2015). Information Architecture for the Web and Beyond. Sebastopol: O'Reilly. Ch. 8. Available here.	35 p.		
Kalbach, J. (2007). Designing web navigation. Sebastopol: O'Reilly. Available here. Pp. 2-118.		116 p.	
Total	89 p.	116 p.	

Search systems

Lecturer: Tanja

Content: The lecture will present the concept of search from a user and a design perspective. The lecture will introduce and discuss search concepts such as the anatomy of the search system, faceted search and search

interfaces.

	Required reading	Supplementary reading	Digital upload
Tunkelang, D. (2009). Faceted search. San Rafael: Morgan Claypool. (Synthesis Lectures on Information Concepts, Retrieval, and Services, 5). Available here. Pp. 1-26.	26 p.		
Wilson, M.L. (2012).Search User Interface Design. San Rafael: Morgan Claypool. (Synthesis Lectures on Information Concepts, Retrieval, and Services, 20). Available here. Pp. 1-80.		80 p.	
Kruschwitz & Hull (2017). Searching the enterprise. Foundations and trends in information retrieval, 11(1), ch. 2.	39 p.		
Russel-Rose, T. & Tate, T. (2013). Designing the Search Experience. Waltham: Morgan Kaufman. Available here. Ch. 5-7.		121 p.	
Rosenfeld, L., Morville, P. & Arango, J. (2015). Information Architecture for the Web and Beyond. Sebastopol: O'Reilly. Ch. 9. Available here.	57 p.		
Total	122 p.	201 p.	

User experience

Lecturer: Marianne

Content: The lecture will introduce to the notion of user experience as an approach to the design and evaluation of information architecture. The lecture will focus on discussing how we can use principles of user experience to guide the design process.

	Required reading	Supplementary reading	Digital upload
Hassenzahl, M. 2010. Experience design: Technology for all the right reasons. San Rafael, CAL: Morgan&Claypool Publishers.			x
Lykke, M., Løkkegaard, S. and Jantzen, C. (2017). Experience-Oriented Knowledge Organisation for the Transference of Scientific Knowledge from Universities to SMEs. Proceedings of the ISKO UK Fifth Biennial Conference, 11-12 July, 2017, London.	21 p.		x
Total	21 p.		

Mobile and cross-channel IA

Lecturer: Tanja

Content: The lecture concerns the specific characteristics of mobile communication platforms and cross-channel communication. The topic is adressed from a user perspective as regards user practice on mobile platforms, and from a design perspective as regards the specific considerations to make in designing for mobile platforms and cross-channel search experience.

	Required reading	Supplementary reading	Digital upload
Benyon, D. (2012). Presence in blended spaces. Interacting with Computers, 24(4), 219-226. Available here.	8 p.		
Fischer, J., Norris, S. & Buie, E. (2012). Sense-making in cross-channel design. Journal of Information Architecture, 4(1-2). Available here.	24 p.		
Russel-Rose, T. & Tate, T. (2013). Designing the Search Experience: The Information Architecture of Discovery. Waltham: Morgan Kaufmann. Ch. 10. Available here.		15 p.	
Nielsen, J. & Budiu, R. (2013). Mobile Usability. Berkeley: New Riders. Available here. Ch. 2-5		X	
Yu, N. & Kong, J. (2016). User experience with web browsing on small screens: Experimental investigations of mobile-page interface design and homepage design for news websites. Information Sciences, 330, 427-443. Available here.	17 p.		
Total	49 p.	15 p.	

Persuasive design 1

Lecturer: Sandra

Content:

This lecture provides an introduction to persuasive technologies as defined by BJ Fogg. Persuasive systems are generally understood as interactive digital devices that have been designed with the intent to change the user's attitude and/or behaviour. As such, persuasive technologies combines digital design with areas such as social psychology, classical rhetoric and learning.

As well as introducing persuasive technologies, this lecture strives towards positioning the field of persuasive technology in relation to other approaches to behaviour design.

	Required reading	Supplementary reading	Digital upload
Fogg, B. (1998). Persuasive Computers, Perspectives and research directions. CHI, ACM Press.	7 p.		
John, P., et al. (2011). Nudge, Nudge, Think, Think. Huntingdon, GBR, Bloomsbury Academic. Chap. 1	26 p.		
Total	33 p.		

Persuasive design 2

Lecturer: Sandra

Content:

This lecture expands on the subject of persuasive technology, by further elaborating on the notion of persuasive design. Particular attention is directed towards the relation between classical rhetoric and the notion of persuasion as it is discussed and understood within the field of social psychology.

Furthermore, this lecture introduces fundamental elements of digital rhetoric, in order to more distinctly relate classic humanistic traditions to modern day design principles.

Literature:

	Required reading	Supplementary reading	Digital upload
Miller, G. R. (2002). On Being Persuaded, Some Basic Distinctions. The Persuasion Handbook, Developments in Theory and Practice. J. P. Dillard and M. Pfau. London, Saga Publications.	10 p.		X
Hasle, P and Christensen, A. K. (2007). Classical Rhetoric and a Limit to Persuasion. Persuasive Technology, Palo Alto, Springer	4 p.		
Total	14 p.		

Miller - On Being Persuaded

Persuasive design 3

Lecturer: Sandra

Content:

This lecture places a distinct focus on the ethics of persuasion and on the notion of designing with the intent to influence the users attitude and7or behaviour.

This lecture provides a brief intorduction tosome of the key perspectives of applied ethics, such as utilitarianism, deontology and ontology. However, the main focus of the lecture will be placed on the complexity of persuasion as a concept and on ways in which ethics may be taken into consideration during the design process.

	Required reading	Supplementary reading	Digital upload
Albrechtslund, A. (2007). "Ethics and Technology Design." Ethics and Information Technology 9(1): 63-72	9 p.		
Gram-Hansen, S. B. (2009). Towards an Approach to Ethics and HCI Development, based on Løgstrup's Ideas. Interact, Uppsala, Springer.	4 p.		
Spahn, A. (2011). "And Lead us (Not) into persuasion...? Persuasive technology and the Ethics of Communication." Science and Engineering ethics18(4)	18 p.		
Total	31 p.		

Evaluation exercise kick-off

Lecturer: Marianne and Tanja

Content: In the evaluation exercise the students will work with planning, developing and pilot testing a research design for a usability test. The exercise will be introduced by a short introduction to evaluation studies and approaches.

Literature:

	Required reading	Supplementary readings	Digital upload
Rogers, Y., Sharp, H. & Preece, J. (2011). Interaction design, beyond human-computer interaction. Chichester: Wiley. 433-530.	97 p.		
Total	97 p.		

Persuasive design 4

Lecturer: Sandra

Content:

In this lecture, we tie together the different perspectives from social psychology, classical rhetoric and theories on learning and knowledge processing, in order to establish a definition of persuasive design, which is applicable not only in theory but also in practice. As such, this lecture presents a distinction between persuasive technology as it is presented by Fogg, and that of persuasive design.

	Required reading	Supplementary reading	Digital upload
Gram-Hansen, S. B. and T. Ryberg (2013). "Persuasion, Learning and Context Adaptation." Special Issue of the International Journal on Conceptual Structures and Smart Applications.	9 p.		
Atkinson, B. M. C. (2006). Captology: A Critical review. Persuasive Technology 2006, ACM.	12 p.		
Total	21 p.		

Categorization 1

Lecturer: Ann

Content: Basic-level categorizations and prototype theory

Categorization can be seen as one of the most important issues in cognition. In this session we discuss categorization from the point of view of cognitive psychology.

	Required reading	Supplementary reading	Dig. upload

Evaluation exercise presentations and design exercise kick-off

Lecturers: Marianne and Tanja

Content: Today the students will present and discuss their work with the evaluation exercise introduced last week. The findings will be used as the point of departure for the next exercise: developing a redesign on the basis of the evaluation results.

Literature:
Everything relevant from the project module so far

Categorization 2

Lecturer: Ann

Content: Categorization and classification as infrastructures

Categories and classifications play important and invisible roles in shaping the wold and our lives. In this session we discuss the consequences of various categorization system from a social, political and even ethical point of view.

	Required reading	Supplementary reading	Dig. upload
Bowker G.C. & Star S.L. (1999) Sorting Things out – Classifications and its Consequences Introduction and Chapter 1 (can be accessed here)	50		
Star, S.L. & Ruhleder, K.: Steps Toward an Ecology of Infrastructure: Design and Access for Large Information SpacesI: Information Systems Research, årg. 7, hft. 1, 03-1996, s. 111–134	23		
Beyer, H. & Holtzblatt, K. Contextual design, Morgan Kaufmann 1998, chapter 15		29	
Total	73 p.		

slides and material

Group formation

Lecturer: Tanja

Content: Todays meeting is about forming groups for the semester projects

Literature:
No reading required

Design exercise presentations

Lecturers: Marianne and Tanja

Content: Today the students will present and discuss the redesigns carried out in the past week.

Literature: No reading required
