



Xi'an Jiaotong-Liverpool University

西交利物浦大學

Department of Computing

MODULE HANDBOOK

<p>CPT208</p> <p>Human-Centric Computing</p>
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Dr. Lingyun Yu

Semester 2

2020-2021

SECTION A: Basic Information

□ Brief Introduction to the Module

Human-Centric Computing (HCC) is a level one module that provides students with the up-to-date guidelines, concepts and models for designing and evaluating interactive systems. The module also provides an introduction to designing and implementing graphical user interfaces, using Java Swing.

□ Key Module Information

Module name: Human-Centric Computing

Module code: CPT208

Credit value: 5

Semester in which the module is taught: Semester 2

Pre-requisites needed for the module:

Programmes on which the module is shared: ICS, IMS, DMT

□ Delivery Schedule

Lecture room: *Week1 Online Week2-6,8-14: SC176*

Lecture time: *11:00 – 13:00 Thursdays (4/3/21 - 8/4/21, 22/4/21 - 3/6/21)*

Seminar times: *11:00 – 13:00 Fridays (4/3/21 - 8/4/21, 22/4/21 - 3/6/21)*

□ Module Leader and Contact Details

Name: Lingyun Yu

Brief Biography: Dr. Lingyun Yu is a Lecturer in the Department of Computing at the Xi'an Jiaotong-Liverpool University (XJTLU). Her research focuses on interactive scientific visualization, human-computer interaction and visual storytelling methods, in particular, interacting with scientific visualizations using 3D interaction techniques, touch-based displays, VR and AR devices.

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Office telephone number: +86-512-88161508

Room number and office hours: SD463 Friday 14:00-16:00

Preferred means of contact: E-mail

□ **Additional Teaching Staff and Contact Details**

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SECTION B: What you can expect from the module

□ **Educational Aims of the Module**

To enable students to take a systematic approach to the specification, implementation, and evaluation of user interfaces in contemporary computing systems.

□ **Learning Outcomes**

At the end of the class, students will be familiar with user-centered system design and the interface design life cycle, methods for prototyping visual applications, methods for evaluating user interfaces, and interface design challenges for novel interfaces.

[A] Have an appreciation of the issues involved in designing computer systems for people.

[B] Have an understanding of the basic formal methods and techniques for interaction design.

[C] Be familiar with JAVA tools that support GUI realizations.

[D] Acquire a critiquing ability for the evaluation of interactive systems.

❑ **Assessment Details**

The assessment of the module consists of four components:

- Coursework 1 - Interactive interface (Design) (10%) **Group project**
- Coursework 2 - Evaluation (15%) **Group project**
- Coursework 3 - Design and implement A GUI interface with Java Swing (15%)
Individual project
- Final exam (60%)

The re-sitting is available at the end of the semester and will contribute 100% to the final mark.

Coursework 1 - Interactive interface (Design) (10%)

Tasks: The group project is given in **week 1**. It covers the learning outcomes [A] and [B].

Each group will have **5** students working on one novel interaction project. Each group will give five short presentations during the semester. Each presentation will be given by one person of the team, alternating among all group members. Please note that, it is a group project, so all the students in the same group will get the same mark.

Each regular presentation will be up to **10 minutes** long and there will be time for about **5 minutes** of questions/remarks/discussion. The presentations will be in English. The mark of the group project is based on the quality/innovation of project design, presentations as well as the discussions.

In the end, each TA will select a best project. The selected groups will give a final presentation at the week 13.

How: the TAs will make the arrangements.

Coursework 2 - Evaluation (15%)

Tasks: The group project is given in **week 4**. It covers the learning outcome [D].

The same group will work on an evaluation task. As a group, you need to evaluate the interface/game/interaction techniques and hand in an academical report.

When: The report must be submitted no later than: **14:00 Friday April 16 (week 7).**

What: *An academical report.*

How: on-line, drop box (SD463).

Your project will be evaluated according to:

- Choice/appropriateness of evaluation method and plan
- Data collecting and analysis
- Quality of the report

Coursework 3 - A GUI interface with Java Swing (15%)

Tasks: The group project is given in **week 9**. It covers the learning outcome [A], [B] and [C].

You need to design and implement a GUI interface with Java Swing. The mark is based on the quality/innovation of project results and report.

When: The individual project must be submitted no later than: **14:00 Friday May 21 (week 12)**.

What: *A 5-minute demo, the final application and source code*, as well as *a report*.

How: on-line, drop box (SD463).

Your project will be evaluated according to:

- **Originality**
- Quality of the report
- Quality of the project

❑ Methods of Learning and Teaching

Students will be expected to attend two hours of online lecture or watch the teaching materials in a typical week. Students will be supposed to attend the seminars, which are organized online (or onsite, depends on the topics and situation) when they give presentations of their projects.

Lectures will introduce students to the academic content and practical skills which are the subject of the module, while computer practice will allow students to practice those skills.

In addition, students will be expected to devote six hours of unsupervised time to solving continuous assessment tasks and private study. Private study will provide time for reflection and consideration of lecture material and background reading.

Continuous assessment will be used to test to what extent practical skills have been learnt.

❑ Syllabus & Teaching Plan

Week Number and/or Date	Lecture/Seminar/ Field Trip/Other	Topic/Theme/Title	Pre-reading
Week 1	Lecture	Introduction, Motivation, Design life cycle	Ch 2 of Reference textbook [1]
	Seminar	Discussion	
Week 2	Lecture	Task-centered design and Goal-centered design	Ch 11
	Seminar	Presentation 1: Motivation and related work	
Week 3	Lecture	User-centered design, Participatory design and Prototyping	Ch 12
	Seminar	Discussion	
Week 4	Lecture	Design principles & Heuristics for interaction	P115-163 of RB [4]
	Seminar	Presentation 2: Prototyping	
Week 5	Lecture	Visualization, Representations	
	Seminar	Discussion	
Week 6	Lecture	Visualization, Representations	
	Seminar	Presentation 3: Design principles	
Week 7 No teaching			
Week 8	Lecture	Interaction in Visualization	
	Seminar	Discussion	
Week 9	Lecture	Java Swing	
	Seminar	Presentation 4: Interaction and Interface Design	
Week 10	Lecture	Java Swing	
	Seminar	Discussion	
Week 11	Lecture	Heuristic evaluation, Usability evaluation, Qualitative methods	Ch 14, Ch 15
	Seminar	Discussion	
Week 12	Lecture	Quantitative methods	Ch 14, Ch 15
	Seminar	Presentation 5: Evaluation plan	
Week 13	Lecture	Tableau	
	Seminar	Final presentation	

Week 14	Lecture	Review	
	Seminar	Discussion	

□ Tutorial Schedule

Student Group	Time	Day	Venue	Lecturer/Instructor
Group 1-8	11:00-13:00	Fridays	Online	Lechen Wu
Group 9-16	11:00-13:00	Fridays	Online	Mengqi Jiang
Group 17-24	11:00-13:00	Fridays	Online	Zhichao Zhang
Group 25-32	11:00-13:00	Fridays	Online	Chaoyi Liu
Group 33-40	11:00-13:00	Fridays	Online	Ningning Xu
Group 41-48	11:00-13:00	Fridays	Online	Yu Liu
Group 49-56	11:00-13:00	Fridays	Online	Junlin Qu
Group 57-66	11:00-13:00	Fridays	Online	Tingjie Wan

□ Reading Materials

Recommended readings:

- “Designing Interactions” by Bill Moggridge
- “Interaction Design: Beyond Human-Computer Interaction” by Helen Sharp, Yvonne Rogers, and Jenny Preece
- “Human Computer Interaction” by A. Dix, J. E. Finlay, G. D. Abowd and R. Beale
- “The Definite Guide to JAVA Swing” by J. Zukowski
- “The Design of everyday things (revised and expanded edition)” by Donald Norman

SECTION C: Additional Information

□ Attendance

Students who are able to be on campus are reminded of the Academic Policy requiring no less than 80% attendance at classes. Failure to observe this

requirement may lead to failure or exclusion from resit examinations or retake examinations in the following year.

❑ **Student Feedback**

The University is keen to elicit student feedback to make improvements for each module in every session. It is the University policy that the preferred way of achieving this is by means of an Online Module Evaluation Questionnaire Survey. Students will be invited to complete the questionnaire survey for this module at the end of the semester.

You are strongly advised to read the policies mentioned below very carefully, which will help you better perform in your academic studies. All the policies and regulations related to your academic study can be found in 'Student Academic Services' section under the heading "Policies and Regulations" on [E-bridge](#).

❑ **Plagiarism, Cheating, and Fabrication of Data.**

Offences of this type can result in attendance at a University-level committee and penalties being imposed. You need to be familiar with the rules. Please see the "Academic Integrity Policy" available on e-Bridge in the 'Student Academic Services' section under the heading 'Policies and Regulations'.

❑ **Rules of submission for assessed coursework**

The University has detailed rules and procedures governing the submission of assessed coursework. You need to be familiar with them. Details can be found in the "Code of Practice for Assessment" available on e-Bridge in the 'Student Academic Services' section under the heading 'Policies and Regulations'.

❑ **Late Submission of Assessed Coursework**

The University attaches penalties to the late submission of assessed coursework. You need to be familiar with the University's rules. Details can be found in the "Code of Practice for Assessment" available on e-Bridge in the 'Student Academic Services' section under the heading 'Policies and Regulations'.

❑ **Mitigating Circumstances**

The University is able to take into account mitigating circumstances, such as illness or personal circumstances which may have adversely affected student performance on a module. It is the student's responsibility to keep their Academic Advisor, Programme Director, or Head of Department informed of illness and other factors affecting their progress during the year and especially during the examination period. Students who believe that their performance on an examination or assessed coursework may have been impaired by illness, or other

exceptional circumstances should follow the procedures set out in the “Mitigating Circumstances Policy”, which can be found on e-Bridge in the ‘Student Academic Services’ section under the heading ‘Policies and Regulations’.

❑ **Learning Mall**

Copies of lecture notes and other materials are available electronically through Learning Mall, the University’s virtual learning environment.