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Introduction to Carnegie Mellon University's Master of Human-Computer Interaction (MHCI) Program

Carnegie Mellon University provides an outstanding Master of Human-Computer Interaction (MHCI) programme, which is recognised as the world's first endeavour to prepare individuals for employment in human-computer interaction, user experience design, and user-centered research.

The methodology of the MHCI programme is unique in that it effortlessly integrates service and design thinking into its rigorous HCI curriculum, generating a generation of graduates capable of shaping the future of human and technology interactions.

Notably, the MHCI programme consists of three semesters that must be completed in a single calendar year from August to August. This professional degree takes an interdisciplinary approach to prepare students for thriving jobs in user experience, human-computer interaction, and beyond. Every year, diverse cohorts are formed, bringing together individuals from various industries such as design, social science, business, and computer science.

Faculty members who are well-known for their contributions to driving and defining the world of HCI lead the MHCI programme. Their knowledge encompasses computer science, cognitive psychology, behavioural science, and design, with numerous faculty members providing unique insights straight from industry experience. The HCII's diverse faculty supports an interdisciplinary atmosphere, improving the learning experience.

The intensive seven-month Capstone project, during which students cooperate in research and design teams to answer real-world challenges provided by external industry clients, is the MHCI program's flagship course.

The MHCI programme has received the STEM certification, recognising its connection with Science, Technology, Engineering, and Mathematics sectors, further reinforcing its relevance in today's ever-changing technological scene.

Overview of Core HCI Courses in Carnegie Mellon University's Master of Human-Computer Interaction (MHCI) Program

05-600: HCI Pro-Seminar: Communications in HCI

This course focuses on strengthening students' communication skills in the context of human-computer interaction (HCI). It includes expert talks from both research and industry, enhancing students' understanding of HCI's real-world applications. The course also emphasizes English writing proficiency and teaches conflict management, teamwork, and active listening skills to foster efficient collaboration in multi-disciplinary teams.

05-610: User-Centered Research and Evaluation (UCRE)

In this course, students gain an overview and introduction to the field of human-computer interaction. They explore tools, techniques, and sources of information related to HCI and learn a systematic

approach to design. Students develop an awareness of effective and poor design through the observation of existing technology. The course covers skills such as task analysis and analytic and empirical evaluation methods. Students will also engage in a laboratory where they practice HCI techniques through a self-defined project.

05-651: Interaction Design Studio 1

This studio course introduces students to design thinking and the fundamental practices of interaction design. It follows a human-centered design process involving research, concept generation, prototyping, and refinement. Students collaborate in both individual and small team settings to design mobile information systems and other interactive experiences. Design methodologies like sketching, storyboarding, wireframing, and prototyping are covered, without requiring coding. Interaction Design Studio 1 serves as a prerequisite for Interaction Design Studio 2 (05-650).

05-650: Interaction Design Studio 2

Building upon Interaction Design Studio 1 (05-651), this course expects students to apply design thinking and methodologies in their assignments. Students work in teams to conduct guerrilla research, synthesize data, and consider the needs of multiple stakeholders in designing mobile services and intelligent systems. The course goes beyond user interfaces, incorporating sensors, controls, and ubiquitous computing. Emphasis is placed on the quality of design concepts and their effective visualization and presentation, equipping students with professional UX design practice skills.

Choice: 05-630 or 05-631

a) 05-630: Programming Usable Interfaces (PUI)

This course combines lectures with an intensive programming lab and design studio. It caters to students who wish to express their interactive ideas through working prototypes. Topics covered include human-computer interaction/interface design, iterative design, input/output techniques, interface design, and research topics influencing future user interfaces.

b) 05-631: Software Structures for User Interfaces (SSUI)

SSUI delves into the fundamental concepts and principles involved in building software to implement user interfaces. It covers factors of input, output, application interface, and related infrastructure, along with typical patterns used for implementation. The course focuses on how these aspects are organized and managed within well-structured object-oriented systems.

05-671: HCI Project I (15-unit spring course) and 7) 05-672: HCI Project II (48-unit summer course)

Experiential learning is a crucial aspect of the MHCI program. Through these two courses, students engage in substantial team projects where they apply classroom knowledge in analysis, evaluation, implementation, and design. They also develop skills in working collaboratively in multidisciplinary teams. The project spans from the spring semester to the final summer semester, offering a hands-on, real-world experience that prepares students for future HCI challenges.