**HONG KONG BAPTIST UNIVERSITY**

**COURSE SYLLABUS**

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| **1.** | **COURSE TITLE** |
|  | Language Skills for human-AI partnership: Customizing Chatbots to Empower Communities |
| **2.** | **COURSE CODE** |
|  | LANG 2xxx |
| **3.** | **NO. OF UNITS** |
|  | 3 Units |
| **4.** | **OFFERING DEPARTMENT** |
|  | Language Centre |
| **5.** | **PREREQUISITES** |
|  | None |
| **6.** | **MEDIUM OF INSTRUCTION** |
|  | English |
| **7.** | **AIMS & OBJECTIVES** |
|  | * Develop students’ language skills in the context of human-AI interactions, with a focus on effective communication and collaboration in community settings. * Investigate the potential of AI-powered chatbots to address specific linguistic and communicative challenges within communities, and design chatbot solutions that meet community needs. * Examine the dynamic interaction between human language and AI, and explore the implications for effective human-AI partnerships in educational and community settings. * Apply linguistic skills and AI applications to develop innovative solutions that address community needs, and reflect on the role of language in human-AI interactions. * Cultivate students’ critical thinking and problem-solving abilities to evaluate the effectiveness of AI-driven solutions in community settings and identify areas for improvement. |
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| **8.** | **COURSE CONTENT**  Part 1: Foundations of Generative AI and Language    Introduction to Generative AI and Large Language Models: Overview of current technologies, focusing on their linguistic capabilities and applications.  Language and AI: Exploring the intersection of language, culture, and technology, and how AI systems reflect and shape language use.  Critical Thinking and AI: Developing critical thinking skills to evaluate AI-generated responses, identify biases, and recognize the limitations of AI systems.  Part 2: Community Engagement and Solution Design    Community Needs Assessment: Utilizing design thinking to explore and understand the specific linguistic and educational needs of partner communities, and identifying opportunities for chatbot solutions to address these needs.  Language and Communication Strategies: Developing effective language and communication strategies to design and deploy chatbot solutions that meet community needs, including:   * Clear and concise writing for chatbot dialogues: Focusing on the creation of straightforward and understandable chatbot communications. * Effective questioning and feedback techniques for chatbot interactions: Developing chatbot capabilities to ask relevant and thought-provoking questions that engage users and evoke meaningful responses * Active listening and empathy in chatbot design: Enhancing chatbots to accurately interpret user emotions and context, enabling responses that reflect understanding and sensitivity to user needs.   Critical Thinking and Problem-Solving: Applying critical thinking and problem-solving skills to evaluate the effectiveness of chatbot solutions and identify areas for improvement.  **Introducing Case Studies to Guide Solution Design:**  To support students in designing and deploying chatbot solutions, we introduce real-world case studies as learning tools. These case studies illustrate how customized chatbots can address specific community challenges, providing inspiration and practical insights for students’ own projects. The case studies will be introduced after the *Community Needs Assessment* stage, serving as examples of how needs-based design can be translated into effective chatbot solutions.  Empowering Communities through Customized Chatbots: Case Studies    Case Study 1: Developing a customized chatbot to design course materials for a rural primary school where teachers are not well-trained on STEM subjects. The chatbot can generate materials that adapt to the local context but also take into account the latest high-quality STEM teaching materials from abroad. This chatbot can help bridge the educational gap and provide students with access to high-quality learning materials.  Case Study 2: Building a customized chatbot to support a mobile family community in Shenzhen, where parents struggle to understand the school admission policies of the municipal government. Under the supervision of experienced social workers and trained volunteers, the chatbot can provide accurate and timely information, answering questions and addressing concerns about school admission policies. This chatbot can empower parents and help them navigate the complex education system, ultimately benefiting their children’s education and future opportunities.  Part 3: Implementation and Evaluation    Chatbot Deployment: Guidance on the finalization and launch of customized chatbot prototypes within community settings, driven by prompt engineering and other human-AI communication strategies, including:   * Crafting effective prompts to elicit desired responses from AI systems * Designing conversational flows that facilitate effective human-AI interaction * Utilizing feedback mechanisms to refine chatbot performance and adapt to chatbot users’ needs including student developers and end users * Impact Assessment: Methods for gathering and analyzing feedback on the chatbot’s effectiveness in achieving learning outcomes, including the enhancement of linguistic and communicative skills for students and the communities they serve.   Dissemination and Celebration: Techniques for sharing success stories and the impact of chatbot solutions through compelling storytelling, highlighting the role of language and communication in effective human-AI interactions. |
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| **9.** | **COURSE INTENDED LEARNING OUTCOMES (CILOS)** |
|  | |  |  | | --- | --- | | ***PILO*** |  | | PILO 1 | To develop advanced proficiency, literacy, and literary skills across multiple languages; | | PILO 2 | To demonstrate interpersonal competency and cultural sensitivity that meet the needs of modern workplace; | | PILO 3 | To employ a variety of strategies for effective communication in academic and professional settings; | | PILO 4 | To exhibit critical, reflective and adaptive skills essential for self-regulated language learning; | | PILO 5 | To enhance communication strategies through technologies for effective human-human and human-Al interaction across varied academic and professional settings. | | ***CILO*** | ***By the end of the course, students should be able to:*** | | CILO 1 | Develop advanced linguistic skills to effectively communicate with humans and AI systems, analyzing linguistic structures and adapting language use for diverse contexts and audiences. (PILO 1, 5) | | CILO 2 | Employ critical thinking and reflective skills to evaluate the effectiveness of human-AI interactions, identifying biases and limitations of AI systems and developing strategies for improvement. (PILO 3, 4) | | CILO 3 | Demonstrate interpersonal competency and cultural sensitivity in human-AI collaboration, designing and deploying language-based solutions that meet community needs and promote social impact. (PILO 2, 5) | | CILO 4 | Enhance communication strategies through the effective use of technologies, including chatbots, to facilitate human-human and human-AI interaction, and to promote literacy, literary skills, and community empowerment. (PILO 3, 5) | |

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| **10.** | **TEACHING & LEARNING ACTIVITIES (TLAS)**    *Brief descriptions of TLAs and the alignment**with the CILOs in the following format:*     |  |  | | --- | --- | | ***CILO alignment*** | ***Type of TLA*** | | CILO 1, 2, 3, 4 | **Service-Learning Projects**    Students will participate in service-learning projects with community partners, where they will design, develop, and deploy customized chatbots to address real-world communication challenges.  Through these projects, students will apply linguistic insights to shape chatbot learning goals suited to community needs, and develop critical thinking abilities to evaluate the effectiveness of their chatbot solutions.  Students will also engage in reflective practices to identify areas for linguistic and technical improvement, and discuss ways to better meet community communication requirements.  The service-learning projects will be assessed through the Group Project (35%) and Multimodal Presentation (30%) components, where students will demonstrate their ability to design, develop, and deploy effective chatbot solutions that meet community needs.  Students will also reflect on their learning and project development process through the Reflective Learning Journals (15%), where they will document their progress, challenges, and insights gained throughout the project. | | CILO 1,2,3,4 | **Chatbot Development Workshops**    Students will participate in hands-on chatbot development workshops, where they will learn to create chatbot prototypes using generative AI platforms.  These sessions will focus on skills such as dialogue design and response customization, and provide students with the technical skills needed to develop effective chatbot solutions.  The chatbot development workshops will prepare students for the Technical Report (20%) component, where they will demonstrate their technical skills and knowledge in chatbot development.  Students will also reflect on their learning and technical skills development through the Reflective Learning Journals (15%), where they will document their progress, challenges, and insights gained throughout the workshops. | | CILO 2, 3, 4 | **Community Engagement Activities**    Students will participate in community engagement activities, such as site visits, stakeholder interviews, and shadowing, to gain a deep understanding of community needs and challenges.  These interactions will provide critical insights into community challenges, and enhance students' language skills and critical thinking abilities.  The community engagement activities will inform the development of the service-learning projects and the Multimodal Presentation (30%) component, where students will demonstrate their ability to understand and address community needs.  Students will also reflect on their learning and community engagement experiences through the Reflective Learning Journals (15%), where they will document their progress, challenges, and insights gained throughout the activities. | | CILO 4 | **Reflective Presentations**    Students will deliver reflective presentations on their service-learning projects, where they will discuss the development process and effectiveness of their chatbot solutions in addressing community needs.  These presentations will focus on the linguistic skills utilized to communicate effectively with Generative AI, and provide students with the opportunity to reflect on their learning and identify areas for improvement.  The reflective presentations will be assessed through the Multimodal Presentation (30%) component, where students will demonstrate their ability to reflect on their learning and communicate effectively with stakeholders.  The Reflective Learning Journals (15%) will also provide students with an opportunity to reflect on their learning and project development process, and will be used to assess their ability to think critically and reflectively about their learning. | |

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| **11.** | **ASSESSMENT METHODS (AMS)** |
|  | *AMs should be aligned with the appropriate CILOs to ensure that there is sufficient evidence to show that students have achieved the CILOs at the end of the course. (This alignment with the CILOs is crucial as documented evidence where the required competency of all the CILOs is assessed.)* |
|  | Students taking this course will receive a Satisfactory (S), for performance at or above 65%, or Non-satisfactory (N/S) grade, if the student’s overall performance is below 65%.     |  |  |  |  | | --- | --- | --- | --- | | **Type of Assessment Methods** | **Weighting** | **CILOs to be addressed** | **Description of Assessment Tasks** | | Group Project | 35% | 1, 2, 3 | Teams will design, develop, and deploy a customized chatbot solution to address a real problem facing a partnering organization or social enterprise. The project will focus on developing human-AI collaborative solutions that integrate linguistic capabilities to meet community needs. The deliverables will include:     * A functional chatbot prototype * A project report that outlines the problem-solving approach, community needs assessment, and the impact of the chatbot solution on the community   The project report will be assessed on the team's ability to:     * Identify and address a real community problem * Develop a human-AI collaborative solution that integrates linguistic capabilities * Evaluate the impact of the chatbot solution on the community | | Reflective Learning Journals | 15% | 1, 2, 4 | Students will engage weekly with their chatbots, reflect critically on the linguistic interactions, document the developmental process, and ideate linguistic improvements in their communication and project work. The reflective learning journals will be assessed based on the depth and quality of the reflection, as well as the demonstration of linguistic skills and knowledge. | | Technical Reports | 20% | 1, 3 | Individual students will submit a technical report that reflects on the skills and knowledge they developed during the chatbot development process. The report will focus on the technical aspects of human-AI collaboration and the integration of language skills in designing dialogues. The report should include:     * A discussion of the technical challenges and solutions implemented during the chatbot development process * An analysis of the linguistic skills and knowledge applied in designing effective dialogues * Recommendations for future developers of chatbot solutions   The technical report will be assessed on the clarity and coherence of writing, as well as the demonstration of linguistic skills and knowledge. | | Multimodal Presentation | 30 % | 2, 3, 4 | Teams will create a multimodal presentation (e.g. video story, infographic, or interactive website) that showcases their chatbot solution and its impact on the community. The presentation should be designed for a general audience and should:     * Clearly communicate the needs assessment findings and the linguistic strategies employed in the chatbot solution * Effectively demonstrate the use of linguistic skills and AI interaction to address community needs and enhance communication * Showcase the team's creativity and innovation in presenting their solution   Options for the multimodal presentation format include video story,  infographic, interactive website or web page, Podcast or audio presentation. | |
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**12.** **TEXTBOOKS / RECOMMENDED READINGS**

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|  | Bowen, J. A., & Watson, C. E. (2024). *Teaching with AI: A practical guide to a new era of human learning*. Johns Hopkins University Press. |
|  | Chan, C. K. Y. (2024). *Generative AI in higher education: The ChatGPT effect*. Routledge. |
|  | Chiu, T. K. F., Xia, Q., Zhou, X., Chai, C. S., & Cheng, M. (2023). Systematic literature review on opportunities, challenges, and future research recommendations of artificial intelligence in education. *Computers and Education: Artificial Intelligence, 4*, 100118. <https://doi.org/10.1016/j.caeai.2022.100118> |
|  | Cremer, D. D., & Kasparov, G. (2021, March 18). *AI should augment human intelligence, not replace it*. Harvard Business Review. <https://hbr.org/2021/03/ai-should-augment-human-intelligence-not-replace-it> |
|  | Etori, N. A., & Gini, M. (2024). WisCompanion: Integrating the socratic method with ChatGPT-based AI for enhanced explainability in emotional support for older adults. In H. Degen & S. Ntoa (Eds.), *Artificial Intelligence in HCI* (pp. 179–198). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-60606-9\_11 |
|  | Mizumoto, A., & Eguchi, M. (2023). Exploring the potential of using an AI language model for automated essay scoring. *Research Methods in Applied Linguistics, 2*(2), 100050. <https://doi.org/10.1016/j.rmal.2023.100050> |
|  | Mollick, E. (2024). *Co-intelligence: Living and working with AI*. Portfolio. |
|  | Nguyen, A., Hong, Y., Dang, B., & Huang, X. (2024). Human-AI collaboration patterns in AI-assisted academic writing. Studies in *Higher Education, 49*(5), 847–864. <https://doi.org/10.1080/03075079.2024.2323593> |
|  | Pigg, S. (2024). Research writing with ChatGPT: A descriptive embodied practice framework. *Computers and Composition, 71*, 102830. <https://doi.org/10.1016/j.compcom.2024.102830> |
|  | Urmeneta, A., & Romero, M. (Eds.). (2024). *Creative applications of artificial intelligence in education. Springer Nature Switzerland*. <https://doi.org/10.1007/978-3-031-55272-4> |
|  | Zero, P., & Children, R. (2001). *Making learning visible: Children as individual and group learners.* Reggio Children Pubns. |

Prepared by: Dr Simon Wang

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