**GRADUATE CERTIFICATE: Intelligent Reasoning Systems (IRS)**

**PRACTICE MODULE: Project Proposal**

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| **Date of proposal:**  18 September 2018 |
| **Project Title:**  ISS Project – Intelligent Eco-System Platform, for intelligent course scheduling system use case |
| **Sponsor/Client:** *(Name, Address, Telephone No. and Contact Name)*  Institute of Systems Science (ISS) at 25 Heng Mui Keng Terrace, Singapore  NATIONAL UNIVERSITY OF SINGAPORE (NUS)  Contact: Mr. GU ZHAN / Lecturer & Consultant  Telephone No.: 65-6516 8021  Email: [zhan.gu@nus.edu.sg](mailto:zhan.gu@nus.edu.sg) |
| **Background/Aims/Objectives:**  The proposed intelligent eco-system will make use of various advanced machine reasoning techniques and components to foster generic intelligent system adoption and agile implementation for business. |
| **Requirements Overview:**   * Research ability * Programming ability * System integration ability |
| **Resource Requirements (please list Hardware, Software and any other resources)**  Hardware proposed for consideration:   * GPU, RaspberryPi, AlphaBot, NVidia Jetson Box, etc.   Software proposed for consideration:   * Reasoning systems, e.g. KIE jBPM, Drools, AppFormer, OptaPlanner, Fuzzy logic, Optimization, etc * Pertained machine learning models, e.g. Vision, Speech, NLP * Machine learning use cases, e.g. Orange3, R * Deep learning tools, e.g. Neural Network Console Sony, Python Keras * Chat-bots, e.g. ChatterBot, DBpedia Chat-bot * Cognitive systems, e.g. MyCroft * Robotic Process Automation, .e.g TagUI * Cloud computing/server, e.g. Amazon, Google, IBM, Azure, etc. * Application container, e.g. Docker |
| **Number of Learner Interns required: (Please specify their tasks if possible)**  a team of four to six project members (or individual work upon lecturer approval) |
| **Methods and Standards:**   |  |  |  | | --- | --- | --- | | **Procedures** | **Objective** | **Key Activities** | | | **Requirement Gathering and Analysis** | The team should meet with ISS to scope the details of project and ensure the achievement of business objectives. | 1.        Gather & Analyze Requirements | | 2.        Define internal and External Design | | 3.        Prioritize & Consolidate Requirements | | 4.        Establish Functional Baseline | | **Technical Construction** | ·         To develop the source code in accordance to the design. | 1.        Setup Development Environment | | ·         To perform unit testing to ensure the quality before the components are integrated as a whole project | 2.        Understand the System Context, Design | | 3.        Perform Coding | | 4.        Conduct Unit Testing | | **Integration Testing and acceptance testing** | To ensure interface compatibility and confirm that the integrated system hardware and system software meets requirements and is ready for acceptance testing. | 1.        Prepare System Test Specifications | | 2.        Prepare for Test Execution | | 3.        Conduct System Integration Testing | | 4.        Evaluate Testing | | 5.        Establish Product Baseline | |  | | **Acceptance Testing** | To obtain ISS user acceptance that the system meets the requirements. | 1.        Plan for Acceptance Testing | | 2.        Conduct Training for Acceptance Testing | | 3.        Prepare for Acceptance Test Execution | | 4.        ISS Evaluate Testing | | 5.        Obtain Customer Acceptance Sign-off | |  | | **Delivery** | To deploy the system into production (ISS standalone server) environment. | 1.        Software must be packed by following ISS’s standard | | 2.        Deployment guideline must be provided in ISS production (ISS standalone server) format | | 3.        Production (ISS standalone server) support and troubleshooting process must be defined. | |  | |

**Team Formation & Registration**

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| Team Name: |
| Project Title (repeated): |
| System Name (if decided): |
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| Team Member 1 Name: |
| Team Member 1 Matriculation Number: |
| Team Member 1 Contact (Mobile/Email): |
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| Team Member 2 Name: |
| Team Member 2 Matriculation Number: |
| Team Member 2 Contact (Mobile/Email): |
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| Team Member 3 Name: |
| Team Member 3 Matriculation Number: |
| Team Member 3 Contact (Mobile/Email): |
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| Team Member 4 Name: |
| Team Member 4 Matriculation Number: |
| Team Member 4 Contact (Mobile/Email): |
|  |
| Team Member 5 Name: |
| Team Member 5 Matriculation Number: |
| Team Member 5 Contact (Mobile/Email): |
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| Team Member 6 Name: |
| Team Member 6 Matriculation Number: |
| Team Member 6 Contact (Mobile/Email): |
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| **For ISS Use Only** | | |
| **Programme Name:** | **Project No:** | **Learner Batch:** |
| **Accepted/Rejected/KIV:** | | |
| **Learners Assigned:** | | |
| **Advisor Assigned:**  Contact: Mr. GU ZHAN / Lecturer & Consultant  Telephone No.: 65-6516 8021  Email: [zhan.gu@nus.edu.sg](mailto:zhan.gu@nus.edu.sg) | | |