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| **Industry Partner Project Proposal** |  |

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**Welcome!** We are delighted that you are considering partnering with the University of South Australia and our students to undertake an industry based project. In order to facilitate this process, we ask that you complete the questions below where possible to help us gather important information about your organisation and the project opportunity for a student/s.

Once this information is obtained we will assess the proposed project ensuring it meets the academic requirements of the program and if so progress to match suitable student/s to achieve the project outcome. In the event that we feel the project does not meet the university’s academic requirements or we do not believe we have the suitable students to achieve your project goals, we will come back to you to discuss the requirements further.

Once completed, please email to [douglas.kelly@unisa.edu.au](mailto:douglas.kelly@unisa.edu.au)

*Projects scheduled to start in March need to be returned by Sunday, second week of February. Projects starting in late July need to be returned by Sunday the second week of June.*

Organisation/Contact Details

**Your Organisation** Peats Soil and Garden Supplies

**Key Contact Name**  Peter Wadewitz, Managing Director

**Key Contact Title** Mr.

**Address**  22 Flour Mill Rd, Whites Valley SA 5172

**Business Phone** 8556 5295

**Mobile**  04 18791921

**Fax** *(if appropriate)*  …………………….……….………………………………………

**Email** peterw@peatssoil.com.au

**Organisation Website** www.peatssoil.com.au

**Division Website** *(if appropriate)*  ……………………….…….……………….………………………

**Location of actual Work Placement** ……………………………….……….…….………………………

*(if different from above)* ………………………………….……….….………………………

**Preferred Study Discipline/s** …….……….……………………………….………………………

**Project Name**

*Please use a name that is a good descriptor of the project*

Develop a C library for a GSM device for Arduino platform

**Broad Project Scope**

*Please define the broad scope of the project. Be as comprehensive as possible so we can determine the relevant study disciplines of prospective students*

Waste is quickly emerging as a significant global issue, and its smart management will be the most desirable solution. Internet-of-things (IoT) is a promising smart platform to monitor (collect), process/store, & analyse sensor data, and control actuators/processes with/out human intervention in most industrial settings, thereby enhancing efficiency of operational management of a business. Efficient and intelligent analysis will enable more effective control and optimisation of the waste management processes. This project will seek to develop a software library for a suitable GSM hardware module for the Arduino platform. This library will be used to code Arduino program (sketch) to send/receive data from Arduino based controller to a Cloud based data management tool [Note: in progress at ICT with Gianni]. The Arduino controller will collect one data set sensed by one/ more type/s of sensors from a waste management system. Example of sensors are temperature, oxygen, waste level and geographical coordinate. Adequate experience with internet/network programming using C language is required.

*Collaboration*

This is a collaborative project. A research student (Hons) from ICT has been developing the Cloud based software. He will collaborate with the new ICT research student who will develop the library. A research student (Hons) from ENE has been developing the Arduino controller that has the GSM module included. The ENE student will collaborate with the ICT student and do the followings:

* provide communication requirement
* test the library
* give feedback on performance of the library as required

**Project Outcomes**

*Please provide the key outcomes for the project. What is it that you would like to see achieved or produced? Please be as comprehensive as possible so we can determine the relevant study disciplines and size of the project team.*

Development of a software library for platform for Arduino IDE platform for a GSM hardware module for the Arduino controllers that can send/receive data to/from a Cloud server or system.

**Estimated Project Effort**

*Please indicated based on your best estimate the amount of effort required to complete the project. The number of students required (eg 1-4), the expected commitment by each student is a minimum of 20 hours per week.*

…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

|  |  |
| --- | --- |
| Students required: | 1 |
| Project Duration (4 or 9 months/Hons): | 4 months |
| Example: Project Requirements Document | 40 hours |
| Example: Project Management Plan | 20 hours |
| Identify required hardware and software for development |  |
| System analysis and design the required library |  |
| Develop the library |  |
| Develop an Android-based mobile app |  |

**Pre-Placement Requirements**

*E.g. Hons Student, Police check, Australian Citizen or Permanent Resident, manual handling awareness training, vaccinations, etc.*

*Hons and undergraduate student*

**Placement Requirements**

*Is the student required to work on-site or another agreed location (other than university grounds) to complete the project (yes/no):*

No

**Methods Applied**

*Please tick the types of methods that you believe may need to be applied to successfully execute the project.*

|  |  |  |  |
| --- | --- | --- | --- |
| ⃝ Observation | ⃝  Interviews | ⃝  Surveys | ✓  Design |
| ✓  Development | ⃝  Testing | ⃝  Installation | ⃝  Research |
| ⃝  Project Mgmt. | ✓  Presentations | ✓  Process Analysis | ✓  Data Analysis |
| ⃝  Management Report | ✓  Provide  Recommendations | ⃝  Business Case  Development | ⃝  Feasibility Analysis |
| ⃝  Other  *Please detail* |  |  |  |
|  |  |  |  |

**Project Supervisor**

*It is important that each industry partner assign a project supervisor who will assume management responsibility and oversee the project. The industry project supervisor will be key liaisons with the students and university academic supervisor. Please provide the name and contact details of the project supervisor.*

**Project Supervisor** Naser Khan

**Title**  Dr.

**Email** naser.khan@unisa.edu.au

**Business Phone/Mobile** 04 4842 7379

Government Legislation

**The University of South Australia facilitates student placements on the basis that host employers adhere to the following legislation:**

* ***South Australian Work Health and Safety Act 2012***
* ***Fair Work Act 2009*** *–* <https://www.fairwork.gov.au/pay/unpaid-work>
* **Equal opportunity laws relevant to South Australia** - <http://www.eoc.sa.gov.au/eo-you/discrimination-laws/south-australian-laws>
* ***Privacy Act 1998***

□ Yes, I agree to host the student, in line with the above legislation and guidelines.