A close-up of a logo

AI-generated content may be incorrect.

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)**

**ICT FIRST YEARS AND FOUNDATION UNIT**

**JOINT GROUP ASSIGNMENT (JGA): 2025**

**THEME: COMMUNITY ENGAGEMENT ON FOOD SECURITY THROUGH GARDEN PROJECTS**

**SUSTAINABLE DEVELOPMENT GOALS (SDG):** No Poverty and Zero Hunger

**OBJECTIVE:**  
Students to use the knowledge progressively learned in modules such as Information Literacy, Communication and Computing Fundamentals to gather information about food garden cases from interned videos, websites, articles and books relating to how households, education institutions, community projects and any other subset of the society engages in securing food through creation, maintaining and improving garden that produce fruits and vegetables. Students are later expected to use their programming and computational maths to demonstrate logical thinking and problem solving through the development of a simple website. The content of the websites should include the summaries of information found on internet and make recommendations through their website on how the community at large could engage on garden projects to secure food .

**INSTRUCTIONS:**

1. **Form Groups** – Work in teams of 7to 10 students from the time table main groups. For example, Students in Faculty Timetable Group “A” will subdivide into subgroups of 7 to 10 students to complete the task. Respective lecturer in every group will preside on group allocation.
2. **Internet Search** –Students should make use of the internet to conduct research on food gardens that have been established in the community. This research should include videos, articles, books, websites, and a wide variety of other resources. In addition, anytime students use the material that they have created on their website, they are required to reference the source of the material.
3. **Develop a Website** – Create a simple website to present:
   * The description of your assignment
   * Embed or intergrade the material found on the internet
   * The Summaries (use charts, graphs, and infographics)
   * Recommendations for improving food security in communities
4. **Submit & Present:**
   * In-class presentation will take place once every term and progressively per schedule determined.
   * A complete report and the website will be expected for delivery at the end of the academic year before the predicate date.

**Grading Criteria:**

* Application of Knowledge from the curriculum (50%)
* Website Design & Content (10%)
* Hosted website running online (10%)
* Report Clarity & Organization (15%)
* Presentation & Teamwork (15%)

**Tools Recommended:**

*NB! The underlined concepts are new knowledge not taught in class. Please. Research it and use it.*

* **Search:** Internet, Search Engines,
* **Website:** WordPress, Wix, Google Sites, or basic HTML/CSS
* **Programming language:** Only Java and JavaScript may be used.
* **Documentation:** MS Suit and Latex
* **Cloud platforms:**  AWS, Microsoft Azure and GitHub

**ASSESSMENT PLAN (50%)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Academic term** | **Mathematics outcomes** | **Communication outcomes** | **Programming outcomes** | **Computing outcomes** | **Priorities** |
| **Term 1**  **Due:** second week of 2nd term | * Problem domain * Identify variables and parameters * Variables/parameters influencing food gardening, for example: Number of people in the project; season; space; water; shade/sun; fertilisation; costs; soil type. Pest control (companion planting, natural pest control, no pesticides); available resources; recycling etc. | * Group member’s lists are submitted to the lecturer (including project leader) * Students to plan assignment group communication (emails, virtual/in contact and allocate tasks * Research on challenges/problems related to food gardening * Students to present summary of their first term | * Students to focus on understanding the problem, designing the solution, and documenting their approach before coding begins (pseudo codes and IPO). * Outline the program structure using pseudocode and a flowchart. Ensure clarity in logic and steps. * Define menu options in an IPO (input-processing-output) table and describe how users will interact with the program. * Identify expected inputs, possible invalid entries, and describe how errors should be handled in pseudocode. * List all necessary computations or actions the program should perform in an IPO table. * Document the logic with clear pseudocode/flowchart and explanations of each step. | * Demonstrate proficiency in using internet search through search engines. * Demonstrate proficiency in using Microsoft applications (word, excel & PowerPoint) * Create a cloud-based collaborative space |  |
| **Term 2**  **Due:** 1st week of third term | * Use the identified parameters and variable and then use numbers and algebra basics for calculations. Provide (generic) solutions using equations that can be converted into statements (in programming): for example, find formulae for fertilization/yield/ number of plants per square meter etc. | * Generation of research title * Students to continue internet search on food gardening. * Develop the aim and objective of the report (writing) * Write a progress report detailing what has been found and implemented so far. * Prepare for evaluation by ensuring every group member can explain their contributions. | * Students start implementing their designs in java, focusing on fundamental programming structures. * Write the initial java program using structured code with comments and indentation. * Implement basic mathematical operations and logical conditions in java. * Add comments explaining key parts of the java code. * User-friendly menu: implement the menu system in java using basic if or switch statements. * Creation tool. | * Present internet search findings in a structured and well-organized PowerPoint presentation. * Use Microsoft excel to organize collected material from the internet. * Start to summarize findings in Microsoft word, using proper formatting, tables.. | 1. Basic java 2. Write a problem statement  for a case study |
| **Term 3**  **Due :last week of 3rd term** | * Make use of measurements and conversion to calculate the effect of the identified variables and parameters you chose to investigate for example, calculate the area of the garden and plan how many of each plant can be grown in the space etc. * Apply elementary statistics to summarise the effects of parameters and variables (charts/graph etc), for example, plot yield per square metre etc. | * Demonstrate group dynamics & collaboration * Demonstrate life skill * Internet search material summary and presentation * Start with academic writing * Present Brief introduction of the problem * Indicate the sources used to find information. * Presentation of findings, Conclusions, | * students enhance their programs, include validation, and add more complex logic for a robust final version. * Implement validation (checking if the input is within the expected range), such as loops for re-entry. * Optimize the java code structure, ensuring readability, efficiency, and maintainability. * Implement the menu system using loops to allow users to navigate multiple times without restarting. * Expand the logic to include nested conditions. * Perform basic integration of java, javascript and/or web 2.0 content | * Create charts and graphs in excel to visualize key trends and insights. * Apply web 2.0 content creation tools such as WordPress to build websites * Design a user friendly website | 1. Web 2.0 development tools workshop (ai week) |
| **Term 4**  **Due:** before predicate |  | * Develop recommendations * Development of final report | * Students refine their projects, conduct final testing, and prepare for presentations. * Review the entire java codebase for improvements. Optimize performance, eliminate redundant code, and apply best practices. * Conduct full program testing for edge cases and unexpected inputs. * Ensure all validation mechanisms work correctly. * Integrate other enhancing tools | * Apply fundamental cybersecurity principles on website development. * Use basic cloud infrastructure used to build and deploy the system (e.g., hosting environment, database choices, development tools). | 1. Complete final report based on the structure of an investigative report to be submitted on the date specified in the assignment |

**DETAILED DESCRIPTION**

One of the key focus areas in the Faculty of Information and Communication Technology is alignment on the Sustainable Development Goals. As a registered student in the first-year and foundation unit, you have been assigned a group project, by the Unit Manager based on the theme: *Food Security Through Garden Projects*. This project aims to map existing types of food gardens within the communities in South Africa. To complete this research, you will visit internet and document key aspects of gardening practices. Your findings must be compiled, summarised, and presented in a **formal report,** which will serve as the final submission to your lecturer in **few iterations.**

**Investigation Steps:**

1. Identify food gardens cases on the internet.
2. Choose at least 5 food garden projects to work with as part of your investigation
3. Use photos or videos of the food gardens for your reporting
4. Present your summaries in a required format
5. Suggest ways to improve/integrate more garden products in South Africa
6. Develop a website to present what you did in your assignment.

**ADDITIONAL INSTRUCTIONS**

**The cover page should include:**

• Initials and surnames, student numbers of all five-group members and their signatures

• Subject name and subject code.

• Qualification code and class group.

• Topic of investigation

• Lecturer’s surname

• Date of Submission

**ADDITIONAL DETAILS**

* Your Assignment must be typed in Times New Roman or Arial size 12.
* Make sure the assignment has been edited.
* Correct tense, structure, and language.
* Attach the rubric and cover page provided
* You are required to work in groups of **7-10** members.
* Your assignment must be submitted to your lecturer (emailed assignments will not be accepted)
* Due date is (No late submissions will be accepted).

**Grading Rubric**

Your Assignment will be graded based on the rubric in the table below:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Excellent (6)** | **Above Average (5)** | **Sufficient (4)** | **Developing (3)** | **Needs improvement (2)** | **Poor (1)** |
| Application of **Programming** from the curriculum **(15%)** | 15 | 11 | 8 | 5 | 2 | 0 |
| Application of Math from the curriculum **(15%)** | 15 | 11 | 8 | 5 | 2 | 0 |
| Application of **Computing** from the curriculum **(10%)** | 10 | 8 | 6 | 4 | 2 | 0 |
| Application of **Communication** from the curriculum **(10%)** | 10 | 8 | 6 | 4 | 2 | 0 |
| Website Design & Content **(10%)** | 10 | 8 | 6 | 4 | 2 | 0 |
| Hosted website running online **(10%)** | 10 | 8 | 6 | 4 | 2 | 0 |
| Report Clarity & Organization **(15%)** | 15 | 11 | 8 | 5 | 2 | 0 |
| Presentation & Teamwork **(15%)** | 15 | 11 | 8 | 5 | 2 | 0 |
| **Total** |  |  |  |  |  |  |