**School of Computing, Electronics and Mathematics Coventry University**

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## NWC604COM – Ubiquitous Computing

**Assignment 1 – Design and plan a ubiquitous system to be used in a real life situation (50%)**

**Hand In date – 25th March 2019**

**Location – South Leicestershire College**

**Learning Outcomes to be assessed in this assignment:**

* Generate ideas, concepts, proposals, or solutions independently regarding the application of ubiquitous and mobile computing in real world situations.

 **To Hand in:-**

* Hard copy of the written assignment in a folder
* Digital Copy available through cloud storage

**The structure of the assignment must be the following:**

* Title page
* Abstract(or summary)
* Introduction
* Task 1 - Understanding Ubiquitous Computing
* Task 2 - Ideas generation
* Task 3 - Your Proposal
* Conclusions
* References
* Appendix

**Recommended Reading**

Arshdeep Bahga, 2014. Internet of Things: A Hands-On Approach, VPT Publishing, 1 edition

John Kruman, 2009. Ubiquitous Computing Fundamentals, Chapman and Hall/CRC; 1 edition

Hansman U, (2003), Pervasive Computing: The Mobile World, Springer Professional Computing Series from relevant conferences and journals

 **Task 1 – Understanding Ubiquitous Computing (25%)**

Show your understanding of Ubiquitous Computing in a 2000 word report. Your report must discuss the following:

#### What is Ubiquitous computing?

#### Wearable, handheld and product embedded systems.

#### Characteristics of interaction and display hardware.

#### Memory and processing constraints.

#### Mobile computing applications.

#### Mobility and persistence.

#### Overview of ad-hoc wireless networking.

#### Locationing, routing and network organisation.

#### Current and future applications for interactive pervasive devices and systems and some case studies.

#### Software environments for mobile and ubiquitous systems development.

# Task 2 – Ideas generation (25%)

#### Using your knowledge of ubiquitous computing you must generate ideas and concepts for 3 devices which propose brand new systems or provide solutions to an existing problem in a real world situation. You must discuss your solution for each idea within 500 words. You must consider the Interfaces of your device including User Intent, Smart Spaces, Adaption Strategy, Context Awareness, Privacy and Trust, Balancing Proactivity and Transparency. Create art work for each idea which shows off the physical look of the device and any GUI’s.

# Task 3 – Your Proposal (50%)

## You will settle on a final idea and create a fully planned 1000 word proposal discussing what you are planning to do and how it fits within the Ubiquitous Computing theme. You must utilise a plan-driven or agile method. Discussing the Environment Layer, Physical Layer, Resource Layer, Abstract Layer and Intention Layer considering Visibility, Feedback, Affordance, Mapping, Constraint and Consistency. Produce a strengths & weaknesses analysis and justify your choice of proposal and how it tackles a real world situation.

**NWC604COM Assignment 1 Marks Breakdown**

Student Name............................................ Student ID..............................................

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|   | Understanding Ubiquitous Computing (25%) | **Ideas generation (25%)** | **Your Proposal (50%)**  |
| 1st 70-100%  | The report is set out In a clear, logical and highly structured way, with clearly thought out examples and in methodical and detailed approach. Use many elucidated illustrative examples to discuss all the Ubiquitous Computing concepts. Discuss the history and development of all these Ubiquitous Computing concepts. | Ideas are complete and of a very high professional quality. Very well thought through original ideas for all three concepts. Uses lots of additional sources beyond the course material. | Your proposal is complete to a professional standard, has a very high quality strengths & weaknesses analysis, along with a very well thought through plan for the assignment. Uses lots of additional sources beyond the course material.  |
| 2.1 60-70%  | In a clear, structured way using illustrative examples discuss in detail all the Ubiquitous Computing concepts. Discuss the history and development of Ubiquitous Computing concepts. | Ideas are complete and of a high quality. Well thought through original ideas for all three concepts. Uses some additional sources beyond the course material. | Your proposal is complete, has a high quality strengths & weaknesses analysis, along with a well thought through plan for the assignment. Uses some additional sources beyond the course material. |
| 2.2 50-60%  | Using illustrative examples Discuss all the Ubiquitous Computing concepts. Discuss the history and development of all Ubiquitous Computing concepts. | Ideas are mostly complete and of a good quality. Thought through original ideas for all three concepts. Uses some additional sources beyond the course material. | Your proposal is mostly complete, has a good quality strengths & weaknesses analysis, a thought through plan for the assignment. Uses some additional sources beyond the course material. |
| 3rd 40-50%  | Discusses Ubiquitous Computing concepts. They have been developed but in a basic way. | Ideas are of lower quality (Showing little understanding), originality or not fully complete.  | Proposal is of lower quality (Showing little understanding), originality or not fully complete |
| Fail 0-40%  | Do not reach objective.   | Do not reach objective.   | Do not reach objective.   |
| **Grade Given:** |  |  |  |

**Feedback**

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**Feed forward**

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