**BIT 2109 Integrative Programming and Technologies (4 CU)**

(a) **Course Description**: The course content is based on open source software such as PHP or closed source software such Active Server Pages (ASP). The software to use will depend on the lecturer giving the course. Active Server Pages (ASP) as a server side scripting architecture for building dynamic web applications, and an ideal environment for building web- based commerce solutions.

(b) **Aims**: The main focus of the CIT program is the understanding of the different types of technologies available in the IT market today, and the innovative and creative integration of these technologies to form customized solutions to empower businesses and organizations. There will be much emphasis on creative problem solving using IT and its skilful implementation. The course looks at systems integration with focus on communication

mechanisms and data standardization.. Students will learn how to represent structure and how to transport data using XML and XML related technologies and protocols. Standardization of XML documents for the purpose of data exchange is stressed.

(c) **Learning Outcomes:** On completion of this course unit, the students will be able to:

• Program in Java, C# and scripting languages such as JavaScript or PHP

• Develop standalone and internet applications using technologies such as xml and in popular frameworks such as ASP.NET

• Create the necessary connections and scripts in order that one or more servers can share data from one or more data sources.

• Integrate databases which are dissimilar in structure, platform and DBMS.

• Use middleware where necessary to integrate data sources.

• Draw and understand architectural models of an enterprise system to the extent that they can communicate this information to and from others.

• Construct and understand an XML document and Parse an XML document.

• Use XML schemas and DTDs to construct data structure, constraints and type enforcement.

• Use XSL for transformations and formatting.

• Exchange data among data sources where data structure and/or model is not the same, using XM, and understand how to use vendor support for XML.

(d) **Teaching and learning pattern**: The teaching and learning approaches will combine classroom lectures, discussions and group activities, quizzes and take home assignments. A group project shall form part of the coursework. The material presented in class will overlap that of the text but will contain additions and variations.

(e) **Indicative content**:

• HTML

• Scripting languages

• Server side scripting architecture and building dynamic web applications

• Web development in any language, including Visual Basic, C++, and J++ programming

• Integrative technologies e.g. XML technologies and protocols

(f) **Assessment method**: The students shall be evaluated through the coursework (40%) consisting of Individual Assignment, Tests, a group project, class quizzes, and a final examination (60%)

(g) **Reference Books:**

1. XML Programming with VB and ASP ISBN:1884777872 Mark Wilson, Tracey Wilson

2. Java Developers Guide to E-Commerce with XML and JSP (ISBN: 0782128270) Bill Brogden et al.