

**PROJECT REPORT SUBMITTED TO THE SCHOOL OF RESEARCH AND  
POSTGRADUATE STUDIES**

**OF**

**UGANDA CHRISTIAN UNIVERSITY, MUKONO**

**PROJECT TITLE:**

**Developing an ICT Inter - University Faculty Reference (IUFR) Tool for  
managing work load and Research Activities in Public and Private  
Universities of Uganda**

**PROJECT TEAM MEMBERS**

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## **ACKNOWLEDGEMENT**

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## PROJECT DESCRIPTION

Like any other sector moonlighting (multiple job holding) is common among academicians in both the public and private universities of Uganda. At University level it is evidenced in part time teaching, research studies; consultancy work, external examination moderation and others operate totally unrelated side businesses to supplement their incomes. Normally these activities may conflict with the institutions', interests, in terms of commitment, the standards of service delivery, encroaching on organizational resources in form of time, some supplies, as well as information in the performance or preparation for outside activity. According to Bunoti (2014) academicians read less and intellectual life at the university has been reduced to bare-bones classroom activities. Toole and Czarnitzki (2010 cited in Francesco Rentocchini, Liney Manjarrés-Henríquez, Pablo D'Este, Rosa Grimaldi (2011), highlights the existence of a significant decrease in the research performance of American academic scientists when they start working on commercialization through the creation of for-profit firms. This may not rule out positive outcomes, such as, role enrichment, employee develop new skills, (Satarupa Banerjee, 2012), among other things. Given the high unemployment rate in Uganda the situation is worse for fulltime part timers, that is lecturer with no full time slot with any university, because in their endeavors to make ends meet, they work with several universities remaining with virtually no time to prepare for their classes, since they are in viscous cycle of either teaching and marking course works, tests, and exams of the many institutions.

Despite policies that regulate lecturer participation in outside activities, there is a limit to which they can be enforced, given the poor pay and labour market demands in some academic disciplines. It's against this background that the team opted to investigate whether developing an (ICT Inter - University Faculty Reference Tool (IUFRT) would enhance policy which regulates academic staff inter-University extra activities. The (IUFRT) can be equated to the Financial Card System (FCS) in the banking sector. This checks and share information on the credit history of borrowers, (Mutebile 2008). In liaison with member universities, the IUFRT will expose faculty member information from various faculties and

universities. The team investigated the challenges hindering the relevant policy enforcement. The study was conducted in two universities including Uganda Christian University and Kyambogo University in Uganda. Data and Artifact Requirement were collected by reviewing relevant literature and policy documents. The Design Science methodology was employed to deal with the system design and development.

## RATIONALE/ EVIDENCE

The Ministry of education and Sports and particularly the NCHC has been grappling with the issue of moonlighting, for example in the Ugandan context a lecturer can work with, more than two universities. While such “external work” is understandable in current circumstances, it leads to misuse and inefficiencies Xiaoyang Liang, (2004). In the recent university ratings, Uganda Christian University was rated poorly in creativities, initiative and project management among other things (The New Vision, 2015). If this Artifact is implemented for use in the varius faculties and Universities, it will help to address the issues noted above. Through analyzing the relevant policies it we were to identify loopholes in these documents and and policies which development of the Artifact that leads to important policy adjustments recommendations. The study was intended to design and develop an ICT tool to enhance policies regulating academic staff Inter-University Extra Activities.

The developed ICT Artifact was diserminated by hosting it online and also making presentations to different stake holders who contributed highly to the Artifact requirements,inputs and to find out how it can be adapted. This helps in its sustainability because the Artifact was appreciated by most stakeholders thus thier willingness to fund its improvement and continually update it as need arises.

# 1.0 INTRODUCTION

Moonlighting is defined as any activity outside the requirement of the official work and receives direct monetary compensation (Satarupa, 2012; Stephen & Betts, 2005). In the context of the University, moonlighting entails any activity conducted by the university staff to which he or she receives payment and is beyond the official job (Adedoyin, Akindele & Wasiu, 2013). It is a vast concept and with potential to accommodate a myriad of activities. Teaching in another institution or within the same institutions outside the official assignments, uptake of research assignments and running a business enterprise all constitute moonlighting under this description (Nambi, 2010; Barifaijo, Nkata & Ssempebwa 2009). The focus of this project is on the phenomenon of moonlighting in the context of holding a teaching position within or outside an institution or faculty and, of which, this is work beyond the official assignment. While no official statistics exist, moonlighting of this particular form appears to be a growing phenomenon in Uganda. And despite its proliferation, the implications of this phenomenon are not well known especially in the context of its effects on university education in the country.

In the context of Uganda, where there is limited competence-base in the higher education sector, moonlighting can especially be a useful conduit for universities to share limited human resource practices. It can also be a means through which best practices can be spread across the universities because of the interactions that are encouraged among staff from across different universities, faculties and practitioner world (Teshome, 2008, Satarupa, 2012, Center for Community College Student Engagement Report 2014). Beyond these benefits, moonlighting can by its nature constrain the individual's capacity to deliver effectively and therefore undermine his or her contribution to the organization's objectives (Liney, Pablo, & Grimaldi 2011, Bunoti 2014). It therefore has a potential to put pressure on ones time, commitment and performance. And while these effects may vary from person to person, an important insight arising from this observation is that while moonlighting has numerous opportunities in the context of Uganda, there is an optimal level beyond which it can contribute negatively to the performance of

individual and the organization. In line with this logic, we develop an artifact that can help in regulation of moonlighting in private and public universities in Uganda among academic staff. We build in our artifact a mechanism for capturing the extent to which this phenomenon can yield a positive outcome at the level of the Lecturer, Faculty or University. In this project, for simplicity, we demonstrate the feasibility of an artifact by testing it at the faculty level and in one institution. The key requirement of the project include the lecturer's teaching load in the different faculties, successful supervision of students' dissertations and staff publications. The artifact is designed to give rights to the administrator who may include the faculty dean, the quality assurance head and Deputy Vice Chancellor's Academic Affairs (DVCAA) office.

## 2.0 METHODOLOGY

In this project, we employ the design science methodology. This is a “research paradigm in which a designer answers questions relevant to human problems via the creation of innovative artifacts” (Hevner and Chatterjee, 2010). Artifacts are constructs, models, methods or instantiations (March & Smith, 1995; Winter, 2008). As constructs, they provide a formal representation of problems and solutions. The artifacts use constructs and abstractions to facilitate the understanding of the problems and solutions. This provides procedures for problem solving and demonstrates the feasibility and effectiveness of solutions through implementations, prototypes and expert evaluations. In this project we focused on designing/building an artifact for addressing the challenge of moonlighting in the context of higher education institutions. Specifically we seek to develop an artifact to enhance moonlighting regulation in public and private universities in Uganda.

In developing this artifact we draw on the three phases suggested in design science for developing such an artifact. These phases include: (1) the Relevance phase which is related with establishing the inputs requirements from the contextual environment and introduces the research artifacts into environmental field testing. In the context of this project the requirements were established from academic staff regulations documents available on the University's intranet, face to face interviews with key stake holders from the University's academics office, Human Resource department and Faculty Administrators to establish the expected standard in the area of the teaching load, research supervision and publication performance. (2) The Rigor phase provides grounding theories and methods along with domain experience and expertise from the knowledge base into the research and adds the new knowledge generated by the research. Consistent with this view, in this project, we seek to draw on the gap in the literature and practice on moonlighting regulation in the higher institutions of learning by offering artifact that demonstrates a possible solution to the problem. (3) The Design phase supports the aspect of research for the construction and evaluation of design artifacts and processes. In this regard, Gonzales and Sol (2012) highlights three

epistemological choices to guide construction and evaluation of design artifacts and related processes. These include: positivism, interpretivism and pragmatism, with corresponding ontological positions. Specific to this project we draw on the epistemological choice of pragmatism because epistemological pragmatism facilitates problem solving (Mingers 2004). Our proposed artifact is intended for guiding practice in regulating moonlighting in higher education institutions.

### 3.0 ARTIFACT DEVELOPMENT

This project was organized along three development stages. The first stage involved collection of requirements and analysis to get desired insights on the appropriate inputs. In the second development stage includes activities related to interface designs. The last stage consisted of modeling the artifact. In the subsections that follow, we offer details on the project Activities made on each of these stages.

#### 3.1 PROJECT ACTIVITY STAGES

In the table below we summarize the project Activity phases of the project and the details of the major activities therein.

*Table 1: Descriptions of Project Activity phases conducted*

<b>Stage</b>	<b>Activities</b>	<b>Status</b>
Collection of requirements	1. Reviewing previous literature in the area of moonlighting to establish concepts, relationships and different factors underlying this phenomenon, synthesizing the information gathered to establish its relevance in the context of the project, gathering insights from available documents in the different offices that oversee lecturing activities including but not limited to Human Resource, academics and faculties. In addition, gathering information from the	Completed

	<p>national regulator of universities. This is information that is publicly available.</p> <p>2. Analysis of all the gathered inputs and analyzing their relevance and application in the development of the artifact.</p>	
Artifact designs	<p>1. Interface designs. In this stage we established the positioning of the tabs, menus on the artifact, colors, users and the different security requirements.</p> <p>2. Planning and review of the logical flow of information in the artifact. This entailed developing the structure of the required Database and the functionalities of the artifact which included but not limited to: User access rights, teaching load, research and publication for staff and student research supervision analysis.</p>	Completed
Artifact Modeling	<p>Developing the actual artifact to meet the required objective which is to develop an ICT Inter - University Faculty Reference (IUFR) Tool to Enhance Moonlighting Regulation in Public and</p>	Completed

	<p>Private Universities of Uganda.</p> <p>This will entail building interfaces, Database and the required links. The tools to be used are</p> <p>(1) Languages: PHP, JavaScript, CSS and SVG.</p> <p>(2) PHP Framework: Code Igniter</p> <p>(3) Libraries: jQuery - JavaScript plug-in support and functions, High Charts - Draws the visualization charts using JavaScript and SVG</p> <p>(4) Text editor: Sublime Text</p> <p>(5) Graphics design software: inkscape</p>	
Stake Consultation, dissemination, review	<p>This will entail meeting with stakeholders who will include School of Research and Postgraduate Studies, faculty administrators, quality assurance and academic department to present the findings and seek their evaluation of the results. This will involves demonstration of the artifact utilizing the different forums at the faculty, departmental and university level</p>	Completed
Reporting	<p>Writing the final report to be submitted to the School of</p>	Completed

	Research and Postgraduate Studies and Dean of Faculty of Business and Administration	
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### ***3.2 ARTIFACT SCREEN SHOTS***

The Artifact is hosted on the world wide web using the Universal Resource Locator [www.moonlightingug.com](http://www.moonlightingug.com). It has several Fuction Interfaces and Tabs that act as the functionalities of the Artifact where each Interface and Tab performs a defferent role:

**3.2.1. Log In,** Image 1 shows the Security Request for access (Image 1), This is the first step to access the Artifact Functionalities, the access levels are three that is the (1)Administrator: Manages, adds, Updates and deletes general Artifact Information. (2) Supervisor: Monitors the System Activities but does not Add, Delete or Update any Information. The Supervisor Uses the Information in The Artifact to Make Strategic Decisions. (3). Normal User: Inputs the Data that the Artifact uses for analysis. We suggest that the Faculty Administrator inputs the data about their Staff, Teaching Load, Publications and Research Supervision.

**Sign In**

Username

Please fill out this field.

Password

**Sign In**

[Forgotten Password?](#)

**Image 1: Security Request for Access**

**3.2.2. Dashboard (Image 2),** All Artifact summarised information and Tabs are found here. A user can choose on a tab to perform an activity such viewing the Teaching Load, Publications in the Artifact, Research Supervision, Programmes Per Faculty and Academic Staff as Shown in Image .

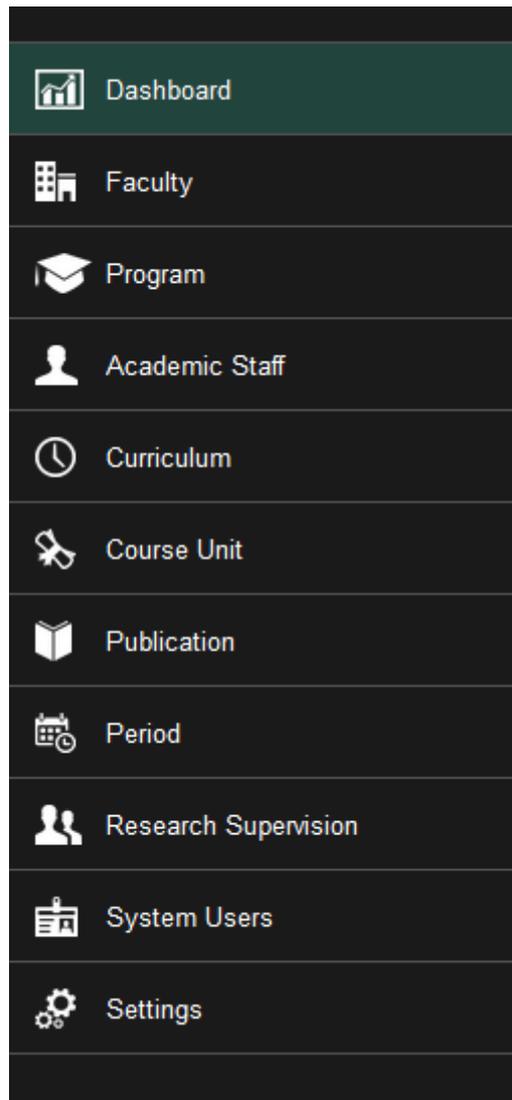
**Dashboard**

Select Report Year **2015**

Teaching Load | Publications | Research Supervision | Programs per Faculty | Academic Staff per Faculty

**Image 2: Dash Board Functionalities**

**3.2.3. Input Tool (Image 3),** To Feed Information to the Dashboard, an Input Tool is used. An Administrator and a Normal User enter information clickin on a specified Tab and perform the required fuction as they wish.



**Image 3: Input Tool**

**3.2.4. Sampled Data Entry Form (Image 4),** Data is entered into the Artifact Starting with the Faculty, Programm, Academic Staff, Curriculum, Course Unit, Publication, Period, System Users, and Settings.

- **Faculty Tab:** Allows entry of Different faculties such as BUSINESS, LAW etc
- **Programe Tab:** All University Programmes are entered from this Tab ie BBA, LLB
- **Accademic Staff Tab:** Input of Staff information such as Name, Faculty of Attachment are entered from this Tab.
- **Curriculum Tab:** Each Staff's Teaching load information is enetered from this tab.

- **Course Unit Tab:** Information about Course unit Names, codes and Faculties where Course Units are taught is input from this Tab .
- **Publication Tab:** All Publication Information is fed into the Artifact using this Tab.
- **Period Tab:** This tab is used to specify the semester and Year of service
- **Research Supervision Tab:** Staff and Student Information will be embedded in this tab and also track allocation and completion of research supervision.
- **System Users Tab:** This tab mainly is used by A Super User in allocating system users rights of access.
- **Settings Tab:** All users have this Tab which enables them to change their preferred settings of access, (Changing password, username and email ).

All the function Tabs allow entry of data to the Artifact and its displayed on the Dash Board Tabs Graphically as shown in **Image 6**.

## Academic Staff

### Add Academic Staff

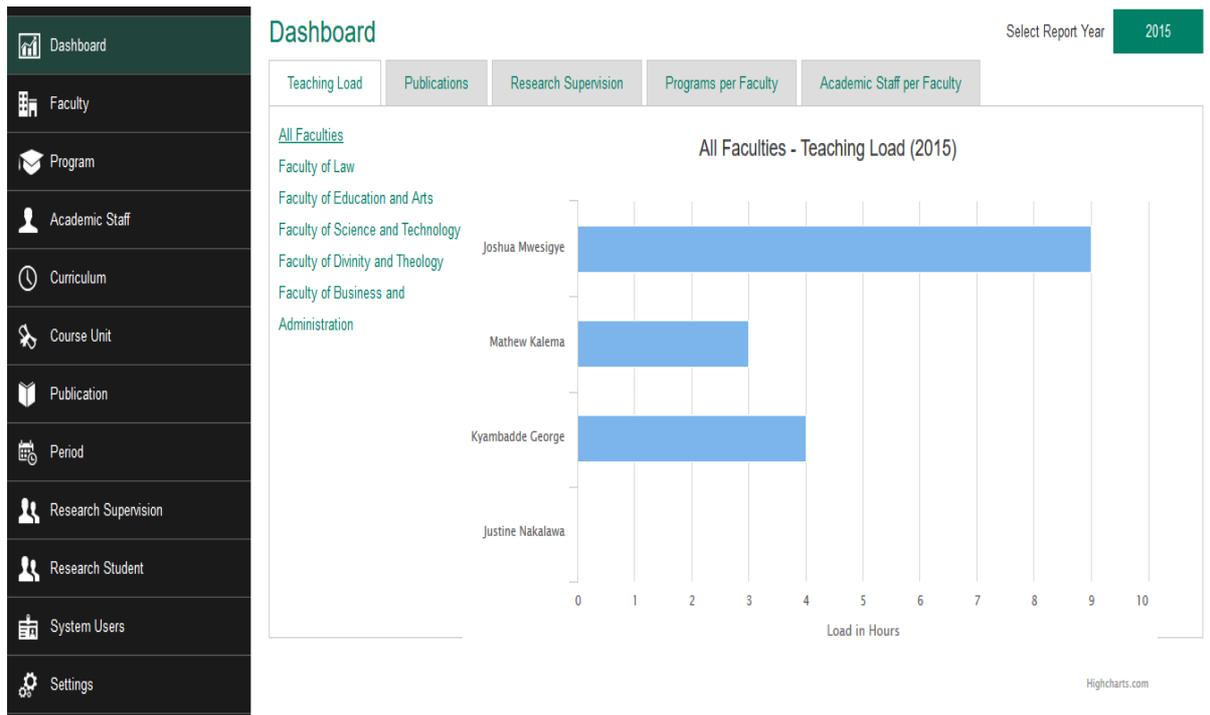
+

First Name *	Last Name *	Add Academic Staff
<input type="text" value="Lecturer's First Name"/>	<input type="text" value="Lecturer's Last Name"/>	
Faculty *	Designation *	
<input type="text" value="-- Select Faculty --"/>	<input type="text" value="-- Select Designation --"/>	
Other Role *	Staff Contract *	
<input type="text" value="-- Select Staff Role --"/>	<input type="text" value="-- Select Staff contract --"/>	
Email *	<input type="button" value="Add Academic Staff"/>	
<input type="text" value="Email of Lecturer"/>		

\* Required Field

Image 5 : Sampled Data Entry Form

**3.2.5. Graphical View of Teaching Load in the Dash Board (Image 6),**  
All entered data in the Artifact is analysed and represented in a chart on the Dashboard. Two types of Charts are used (Bar graph and Pie Chart).



**Image 6: Graphical View of Teaching Load in the Dash Board**

## 4.00OUTCOMES

The Artifact gives graphical and quantitative recommendations that will lead to relevant policy adjustment by using the quantitative data in the Artifact by policy makers .

The developed Artifact helps in the regulation and management of Teach, Research and Publication load that instructors are supposed to cover in the different Faculties or universities thus enhance research, innovations and better service delivery to the students therefore producing better graduates for the community.

## **5.0 RECOMENDATION**

Not much has been done on how ICT can enhance multiple jobs holding policy enforcement. This implies that there is need to adopt the developed Artifact so as to achive the sharing of inter faculty/ Universty staff information to inform policy makers and also manage and regulate moonlighting.

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# APPENDIX

## Appendix A. Budget

Budget Category	Brief Description	Money Requested	Matching Funds◆	Total Budget
Project Manager(s) Name(s):	Methodology & Relevant Policy Analysis	1,000,000		3,000,000
Ayebare Dan (PhD)	Overseeing the system Development	1,000,000		
Mwesigye Joshua	Methodology & Relevant Policy Analysis	1,000,000		
Nakalawa Justine M (Mrs)				
Other Faculty Stipends Name(s):	Policy Interpretation & Reviewing	450,000		450,000
UCU (HR Officer)				
Travel	Travels for presentations			
Assistants Stipends <b>Aleko Godfrey</b>	Kyambogo University Contact person	450,000		450,000
Equipment	Nil			
Materials/Supplies	Stationary , Communication	100,000		100,000
Other	System Development	6,000,000		6,000,000
<b>TOTAL</b>				10,000,000

## PROJECT TEAM COMPLETION ACKNOWLEDGEMENT

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# FUNDING AUTHORITY COMPLETION ACKNOWLEDGEMENT

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