FUNCTIONAL REQUIREMENTS DOCUMENT (FRD) FOR THE IMPLEMENTATION, USER TRAINING AND COMMISSIONING AN INTERGRATED MANAGEMENT INFORMATION SYSTEM (PHASE 1)

CONTRACT REFERENCE NO: CUE/059/2018-2019

PRESENTED TO

COMMISION FOR UNIVERSITY EDUCATION
Redhill Rd. Off Limuru Rd. Gigiri
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NAIROBI-KENYA

SUBMITTED BY

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DATE: 14TH November 2018

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SIGN OFF PAGE AND DOCUMENT VERSIONS

The signing of this document is a commitment that all the user requirements by Commission for University Education have been well captured and documented, and will therefore form the basis for the design, configuration, implementation and deployment of the Microsoft Dynamics NAV 2018 Integrated Information Management System.

In witness whereof, the parties hereto or their authorized representatives, accept that this document captures the necessary user requirements for the implementation of Microsoft Dynamics NAV 2018 Integrated Information Management system and that it shall be used to demarcate the scope and functionality of the system implementation.

CLIENT: COMMISSION FOR UNIVERSITY EDUCATION(CUE)	
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ICT MANAGER **NAME: DR. FRANCIS KIBARU** **SIGNATURE……………...** **DATE…………………...**	**ICTA REPRESENTATIVE** **NAME: MARY KEREMA** **SIGNATURE………………….......................................** **DATE…………………...**

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PROJECT MANAGER **NAME: JOSEPH MUTURI** **[PROJECT MANAGER]** **SIGNATURE………………………..................................** **DATE…………………...**	**TECHNICAL CONSULTING LEAD** **NAME: ERICK DAUDI MACHUKI** **[HEAD OF TECHNICAL SERVICES]** **SIGNATURE………………………..................................** **DATE…………………...**

PROJECT DEFINITION

PROJECT NAME:
IMPLEMENTATION, USER TRAINING AND COMMISSIONING OF INTERGRATED INFORMATION MANAGEMENT SYSTEM

PROJECT CATEGORY:

INTERGRATED INFORMATION MANAGEMENT SYSTEM

KEY MODULES:

- Data collection and management
- Accreditation management
- Quality Audit
- Finance management

DELIVERABLE:

Functional Requirement Document

DOCUMENT DATE: 14TH NOVEMBER 2018

CLIENT:

COMMISION FOR UNIVERSITY EDUCATION
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P.O. BOX 54999-00200
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ERP SYSTEMS CONSULTANT:

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CLIENT PROJECT STAKEHOLDERS

EXECUTIVE SPONSOR: COMMISSION FOR UNIVERSITY EDUCATION

1. Prof. Mwenda Ntarangwi-Project Sponsor/Commission Secretary
2. Prof. Walter Oyawa- Client Project Manager
3. Dr. Francis Kibaru-Client ICT Lead
4. Linah Lilan-Lead User (Finance)
5. Prof. Jackson Too-Lead User (University Data Collection)
6. Joseph Musyoki-Lead User (Program Accreditation/Institutional Accreditation)
7. Daniel Ogutu- Lead User (Program Quality Audit/Institutional Quality Audit)
8. Mary Kerema -ICTA Representative
9. Phyllis Karimi -Risk/Audit/Procurement Representative

ERP CONSULTANTS: Dynasoft BUSINESS SOLUTIONS LTD

1. Gilbert Kugun-Contract Lead
2. Ushindi Stephen-Solution Architect
3. Dr. Dan Orwa-Engagement Consultant
4. Joseph Muturi-Project Manager
5. Erick Daudi-Principal Technical Lead
6. Ruth Machira-Lead Implementer
7. Shawn Mbuvi -Portal Developer
8. David Muthoka-Project Accountant
9. Obi Terry-Relationship Manager

SECTION A: EXECUTIVE SUMMARY

1.1. Background Information

Commission for University Education (CUE) formally contracted Dynasoft Business Solutions Ltd (hereinafter referred to as Dynasoft) to provide consultancy services for the supply, installation, implementation, testing, training and commissioning of an Integrated Information Management system, as per the agreed contractual terms and conditions (Contract Ref No: **CUE/059/2018-2019**. The overall scope of the engagement includes user needs review & documentation, design and customization, user training, data migration and provision of Microsoft Dynamics NAV 2018 Integration Management system support services.

The technical consulting team, in liaison with the lead users, conducted requirements analysis and specification with the objective of identifying and documenting the key functional as well as non-functional user requirements that needed to be supported by the Microsoft Dynamics NAV 2018 Information Management system. The exercise involved rigorous consultative meetings between the consulting team and the lead users to identify the user needs as well as determine the best system-based approach for addressing the user requirements.

Nine user requirements elicitation sessions were held from 19th October to 14th November 2018 to facilitate documentation of the existing business processes, proposed processes and key requirements that needed to be addressed by the Microsoft Dynamics NAV 2018 Integrated Information Management System solution. Below is a summary of the requirements elicitation work plan used during the analysis phase:

Session No	Details of the Requirements Review Meetings/Workshops	Areas Covered	CUE Lead Users Involved	Dynasoft Team Involved
1.	Date: 24th October 2018 Time: 2.00 pm-7.10 pm. Venue: Naivasha	1. Data collection module	• Dr. Francis Kibaru • Naftali Okodo • Prof. Jackson Too • Joseph Musyoki • Daniel Ogutu • Clifford Gicheru • Zachary Waweru	• Ushindi Stephen • Eric Daudi • Victor Mwangi • Shawn Mbuvi • Ruth Machira
2.	Date: 25th October 2018 Time: 8.55am-6.40pm Venue: Naivasha	1. Accreditation Module	• Dr. Francis Kibaru • Joseph Musyoki • Michael Tanui • Clifford Gicheru • Zachary Waweru **ICTA** • Mary Kerema	• Ushindi Stephen • Eric Daudi • Victor Mwangi • Shawn Mbuvi • Ruth Machira
3.	Date:26th October 2018 Time: 8.55am-6.55pm Venue: Naivasha	1. Accreditation Module	• Dr. Francis Kibaru • Joseph Musyoki • Michael Tanui • Clifford Gicheru • Zachary Waweru **ICTA** • Mary Kerema	• Ushindi Stephen • Eric Daudi • Victor Mwangi • Shawn Mbuvi • Ruth Machira
4.	Date:27th October 2018 Time: 8.55am-6.55pm Venue: Naivasha	1. Quality Audit Module	• Dr. Francis Kibaru • Joseph Musyoki • Michael Tanui • Clifford Gicheru • Zachary Waweru	• Ushindi Stephen • Eric Daudi • Shawn Mbuvi • Ruth Machira

5.	Date: 13th November 2018 Time:10.00 am-2.00 pm Venue: CUE Boardroom	1. Finance Processes	• Dr Francis Kibaru • Lillian Kiptoo • Ameleah Kola • Carolyne Ndung'u • Barbara C. • Clifford Gicheru • Zachary Waweru • Lillian N.	• Ruth Machira
6.	Date: 13th November 2018 Time: 3.15 pm-5.15 Venue: CUE Boardroom	1. Data Collection	• Dr. Francis Kibaru • Zachary Waweru • Prof. Jackson Too	• Ruth Machira • Shawn Mbuvi • Edwin Kiptoo
7.	Date: 15th November 2018 Time: 11.05 am – 7 pm Venue; CUE Boardroom	1. Review of Current Accreditation processes	• Joseph Musyoki • James (PhD.) • Dr. Francis Kibaru • Marcella Mwaka • Geoffrey Wanjala • Eunice Kera • Georgine Simiyu • Benson Murgor • Leah Kaburu	• Gilbert Kugun • Ushindi Stephen • Joseph Muturi • Ruth Machira • Shawn Mbuvi • Victor Mwangi
8.	Date:19th November 2018 Time:11.05 am- 5.30 pm Venue: CUE Boardroom	1. Institutional Quality Audit process	• Dr. Francis Kibaru • Daniel Ogutu • Georgina Simiyu • Zachary Waweru • Geoffrey Wanjala • Lynette Kisaka	• Ushindi Stephen • Muturi Joseph • Ruth Machira • Edwin Kiptoo

			• Prof. Anne Nangulu	
9.	Date: 23rd November 2018 Time: 10.30 am-1.30pm Venue: CUE Boardroom	1. Program Quality Audit process	• Joseph Musyoki • Prof. Anne Nangulu • Benson Kimani • Lynette Kisaka • Zachary Waweru • Rita Amoit • Michael Tanui'	• Ushindi Stephen • Ruth Machira • Edwin Kiptoo

1.2. Purpose of the FRD

The purpose of this functional requirements document is to define the core business processes and user requirements of CUE as well as other non-functional requirements That the Microsoft Dynamics NAV 2018 Information management System should meet when successfully implemented.

1.3. Scope of the requirements analysis and specification phase

The user requirements analysis and specification were done to cover the following eleven divisions of the Commission for University Education (CUE):

- Data collection and management.
- Accreditation management.
- Finance management.
- Quality Audit.

1.4. Requirements analysis and specification methodology

Requirements elicitation and Fit-gap analysis was achieved, to a very large extent, through consultative meetings between the ERP consulting team, and lead/representative users/HODs. The lead users took the technical team through the daily operations, data recording and reporting requirements for CUE. The requirements analysis and specification process concentrated on business processes spanning data collection and management, student management, staff management, program management, accreditation management, financial management.

1.4.1. Requirements analysis and specification activities

The following activities were performed during the requirements analysis and specification phase:

a) Review of sample data & reports to understand the data submission formats and processing structure.

b) Analysis of all the core business processes and operations of CUE.

c) Analysis of conceptual data flow across the CUE business processes and the role of different entities (internal and external entities) in this flow as either generators or consumers of information.

d) Review of internal controls that can be put in place to ensure the security and integrity of critical information handled by CUE.

e) High-level review/walkthrough of the various systems (Quick books, bio Logistics) in order to gain an understanding of some of the challenges experienced by the users.

1.5. Deliverable

In reference to the Project charter, the deliverable of the requirements analysis and specification phase is this FRD document.

SECTION B: FUNCTIONAL REQUIREMENTS SPECIFICATION

2.1. Introduction

Based on our review of the business processes, documentation& sample data provided to Dynasoft and subsequent discussions with Commission for University Education, Dynasoft understands the requirements at a high level as outlined in the following sections. Any deviation from these requirements should be identified by Commission for University Education's lead users since it could impact Dynasoft' s assumptions around the suitability of Microsoft Dynamics NAV 2018 Information management system as a solution to the user needs. The analysis within this section is at a high level only and shall be validated through a detailed solution design as part of the formal implementation.

In addition to meeting the specific requirements that are stated below, the technical consulting team also believes that the Microsoft Dynamics NAV 2018 Integrated Information Management system solution will remain configurable to Commission for University Education's changing business processes and scalable to the requisite number of end users across the business.

2.2. Business case

During analysis of the existing systems and way of doing things at Commission for University Education, some of the greatest challenges that were easily identified include the following:

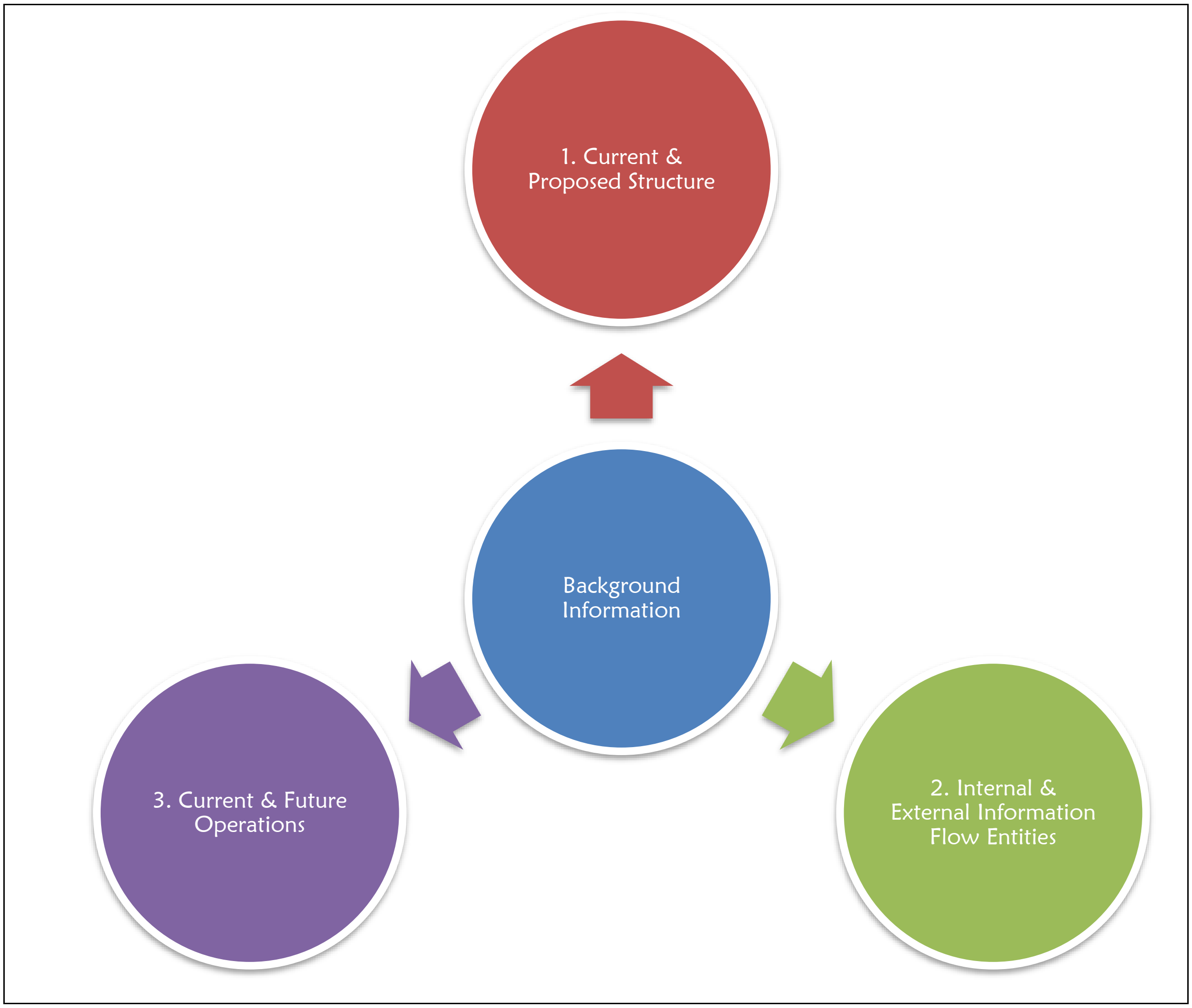
- Lack of an Enterprise resource planning system that can integrate and manage core business processes of CUE in real-time.
- Inadequate system workflow, internal controls and reporting capabilities on the existing legacy solution.
- High-level dependency on ICT for report generation and data analysis.
- Lack of multi-channel access (on premise, web portal, and mobile phone app options) capabilities on the existing platform.
- Difficult in maintaining inventory and stock items due to use of manual system in supply chain division.

- Minimal documentation on the existing system (User manuals and Help capabilities). This required the users to fully rely on the service provider for 1st level support services.

SECTION C: BACKGROUND INFORMATION ON CUE

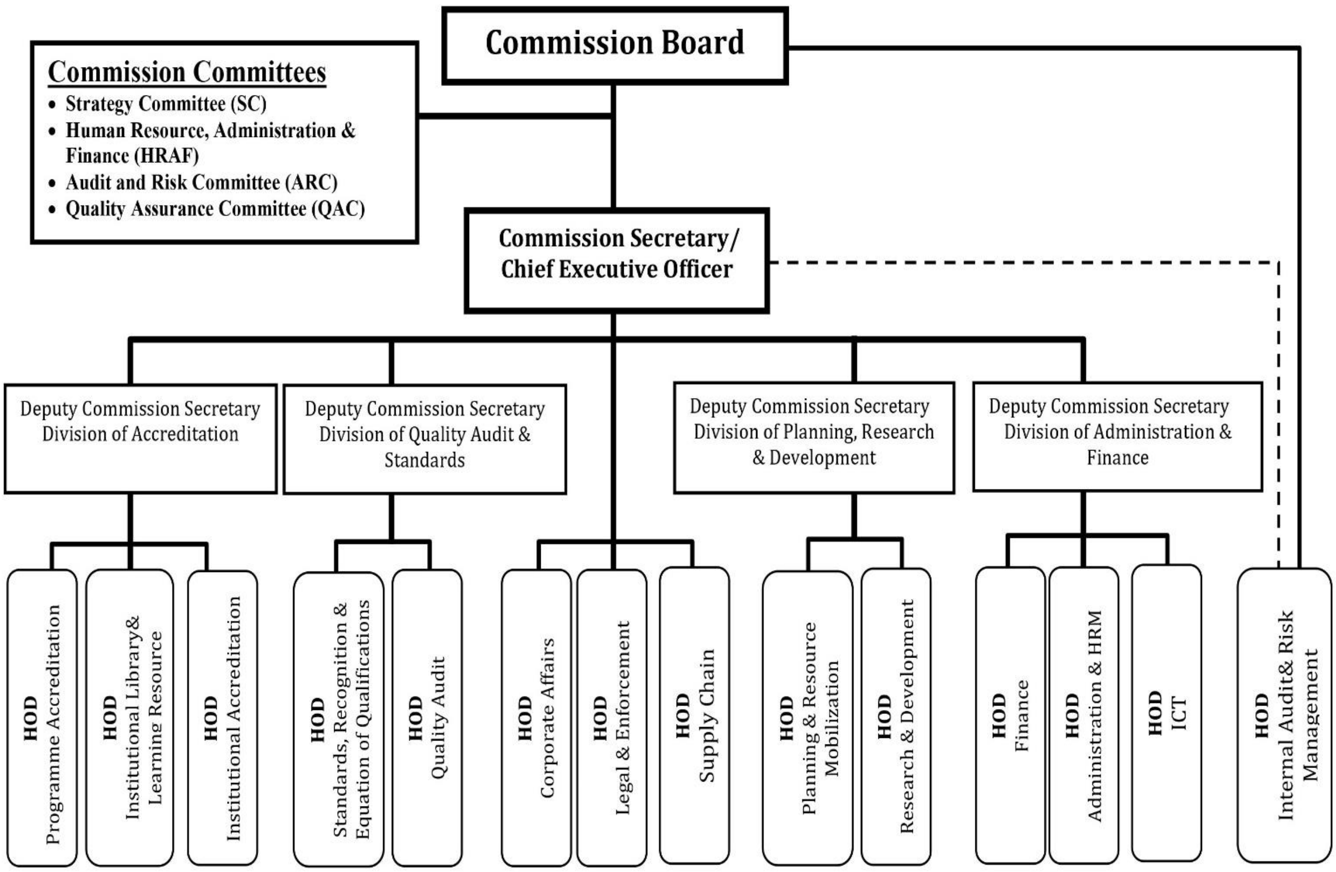
3.0. Overview of the CUE Organization and Services

The lead users highlighted the departmental structure, information flow and operations managed by CUE. The section below summarizes the key areas covered during the requirements elicitation sessions on the background information about CUE:



3.1. ORGANIZATION STRUCTURE FOR CUE

3.1.1. Current Organization Structure CUE



3.2. GENERAL INFORMATION FLOW BETWEEN CUE AND EXTERNAL ENTITIES

3.2.1. Summary of information flow and operations for external entities

The table below summarizes the main information flow and operations between the CUE Departments and the different external entities:

Entities	General Operations and Information Flow
Auditors	1. Financial statement reports
IPPOA	1. Regulatory compliance reports (e.g. Quarterly reports)
KRA	1. I-Tax and financial statements & correspondences
NSSF	1. Compliance reports 2. Tier II audits and portal integration

SECTION D: FUNCTIONAL REQUIREMENTS COLLECTED

4.1. Financial Management requirements

The functional requirements of the finance module have been categorized as follows:

The section below summarizes the key financial management requirements:

Business Area	**Total # individual Requirements**							
Financial Management	*Standard Features*		*Configuration*		*Customization*		*Portal*	
	#	%	#	%	#	%	#	%
Total Requirements:**35**	23	66%	11	31	1	3%	0	0

4.1.1. Chart of Accounts

No	Requirement	Requirement Source	Category	Product & Module
I.	The system should allow all cash transactions to be properly captured by the General Ledger system.	Requirements Session	Configuration	NAV 2018 (Financial Management)
II.	Charts of accounts should support consolidation of data across all revenue and expenditure categories, revenue categories, activities department and projects to facilitate different levels of reporting as well as the overall financial statements.	Requirements Session	Standard	NAV 2018 (Financial Management)
III.	The system should allow ledgers to be maintained in Kshs. Ledgers should keep a record of revenue receipts (sales ledger), debtors (debtor's ledger), creditors (creditors ledger). And allow conversion to other currencies.	Requirements Session	Standard	NAV 2018 (Financial Management)
IV.	System should allow generation of a receipt with information for some specified period of time.	Requirements Session	Configuration	NAV 2018 (Financial Management)
V.	The system should allow generation of routine, monthly, quarterly and year-end financial reports within the stipulated deadlines.	Requirements Session	Standard	NAV 2018 (Financial Management)
VI.	Allow processing of different document types. Among these are Payment voucher, bank	Requirements Session	Configuration	NAV 2018 (Financial Management)

	transfer, cash receipt, petty cash vouchers and journals.			
VII.	The system should provide an opportunity to reverse transaction and or modify as the need be on the current transaction processing period but not the previous closed periods. Deleting is not allowed in the system.	Requirements Session	Standard	NAV 2018 (Financial Management)

4.1.2. Budgeting

I.	Budgeting should support budgeting per each department and broken down after receipt from the government into smaller units down to the line items of the chart of account.	Requirements Session	Standard	NAV 2018 (Financial Management)
II.	Budget planning to produce the monthly, quarterly and annual expenditure limits for each sector, project up to line item.	Requirements Session	Standard	NAV 2018 (Financial Management)
III.	Ability to save historical budget data	Requirements Session	Configuration	NAV 2018 (Financial Management)
IV.	The system should allow for reallocation of budgets (In case of under estimation and over estimation, or unused budgeted funds).	Requirements Session	Standard	NAV 2018 (Financial Management)
V.	The system should support revision of budgets	Requirements Session	Standard	NAV 2018 (Financial Management)
VI.	System should allow a way of warning; in case the budget is exceeded.	Requirements Session	Configuration	NAV 2018 (Financial Management)

4.1.3. **Cash Management** (Bank account, bank reconciliation, receipts, petty cash, imprest, payment vouchers)

I.	The system should allow accountants to prepare and reconcile the balance in bank statement with that in the cash book. Regarding this, generate reconciliation statements and bank statements.	Requirements Session	Standard	NAV 2018 (Financial Management)
II.	Ability to automate bank reconciliation process.	Requirements Session	Standard	NAV 2018 (Financial Management)
III.	Facility to create and close bank accounts and generate periodic reports	Requirements Session	Standard	NAV 2018 (Financial Management)

V.	The system should allow for all payments to be verified and approved before payments are made	Requirements Session	Configuration	NAV 2018 (Financial Management)
V.	The system should be able to generate expenditure reports that shows the expenditure per item	Requirements Session	Configuration	NAV 2018 (Financial Management)
VI.	Reports: 1. Financial report submitted to the auditor general 2. Statement of financial performance – gives surplus or deficit 3. Balance sheet-statement of financial position 4. Statement of changes in net assets- profits/surplus 5. Statement of cash flows-movement of cash 6. Statement of comparison of budgets and actual amounts 7. Asset Movement schedule	Requirements Session	Standard	NAV 2018 (Financial Management)

4.1.4. Fixed Asset Management

I.	Ability to create an asset (Add an asset, Verify, Edit, print addition schedules), capture asset details (descriptive factors including photo) and values of the assets.	Requirements Session	Standard	NAV 2018 (Financial Management)
II.	Ability to capture asset specific numbers such as serial numbers	Requirements Session	Standard	NAV 2018 (Financial Management)
III.	The system should be able to keep a record of assets location	Requirements Session	Standard	NAV 2018 (Financial Management)
V.	The system should be able to print Fixed assets control reports per asset type (e.g. chairs), per location (e.g. per office) etc.	Requirements Session	Standard	NAV 2018 (Financial Management)
V.	The system should be able to provide an asset register for control of assets.	Requirements Session	Standard	NAV 2018 (Financial Management)
VI.	The system should be able to provide an asset register for control of assets. • Fixed asset register cost o Opening Balance o Additions (NEW)	Requirements Session	Standard	NAV 2018 (Financial Management)

	o Disposals/Adjustments (revaluation) o Depreciation for the year o Repairs and maintenance o Closing balance o Accumulated Depreciation			

4.1.5. Payables Management

I.	Need to allow invoice selection in payment voucher processing	Requirements Session	Configuration	NAV 2018 (Financial Management)
II.	Need to set up all the mandatory fields on supplier creation.	Requirements Session	Standard	NAV 2018 (Financial Management)
III.	Need to fully automated Payment voucher processing.	Requirements Session	Configuration	NAV 2018 (Financial Management)
V.	Ability to print checks from the system	Requirements Session	Customization	NAV 2018 (Financial Management)
V.	The system should have the ability to generate the following reports: • Remittance report • Due Invoicing listing	Requirements Session	Configuration	NAV 2018 (Financial Management)

4.1.6. RECEIVABLES MANAGEMENT

I.	Allow receipt processing	Requirements Session	Configuration	NAV 2018 (Financial Management)
II.	Ability to send customer statements	Requirements Session	Standard	NAV 2018 (Financial Management)
III.	Ability to set credit limits	Requirements Session	Standard	NAV 2018 (Financial Management)
V.	Ability to send notifications for pending overdue payment	Requirements Session	Standard	NAV 2018 (Financial Management)
V.	Ability to generate reports/documents: • Customer Aging report • Customer Statement • Customer Invoice	Requirements Session	Standard	NAV 2018 (Financial Management)

SECTION E: INSTITUTION AND PROGRAM ACCREDITATION

Accreditation in Kenya means public acceptance and confirmation evidenced by award of a Charter, which a university meets and continues to meet the standards of academic excellence set by the Commission.

For any institutions to be accredited, the Commission must be satisfied that the institution concerned has adequate physical, human, library and financial resources, viable relevant academic programmes and sound structure of governance.

The following table outlines the process that will be involved during accrediting an institution in the system.

5.1. INSTITUTIONAL ACCREDITATION

Module	Process
Institutional Accreditation	1. The process is initiated by the institutions sponsor. 2. A form is filled which includes the following: a. Institution details, including the type of institution applying: i. Campus ii. ODEL and Online Institutions iii. Public/Private University (Need to track category such as Interim, Chartered etc.) iv. Constituent College v. Specialized Degree-awarding Institutions b. Programs that will be offered by the institution 3. A cove letter is attached. 4. A proposal document is attached-this details the wider narrative of what the institution/program entails. 5. Payment is made about the type of accreditation i.e. a. Public universities- Kshs. **410 ,000.** b. Campus- Kshs. **150,000.** 6. The applicant provides the payment document i.e. bank deposit slip.

	7. The application is forwarded to processing departments (Institution accreditation) for preliminary checks (completeness checks). 8. A panel is selected from a pre-qualified number of experts, resources etc. 9. On panel selection, a peer review is conducted which involves subject experts' evaluation on ground to ensure mentioned standards filled in the institution details match with the ground situation. This is to ensure the minimum requirements are met. 10. On board approval stage, the board members may either approve or reject the application. On approval the institution is awarded the accreditation certificate. The institution has to operate for a period before being awarded the charter. On rejection, the application goes back to peer review/evaluation stage. The possible verdicts are: **i. Redesign** 1. Based on exit report and new checklist (Applicant must re-submit within 90 Days) 2. System creates a Re-design application that references the original proposal form (Possibility of being a free or billable service) 3. Tag deadlines for next inspection after re-design verdict (90 Days after) **ii. Major Revamp** **1.** Based on exit report and new checklist (Applicant must re-submit within 45 Days) **2.** System creates a major revamp application that references the original proposal form (Possibility of being a free or billable service) **3.** Tag deadlines for next inspection after major revamp verdict (45 Days after) **iii. Minor Revamp** **1.** Based on exit report and new checklist (Applicant must re-submit within 21 Days)

	2. System creates a minor revamp application that references the original proposal form (Possibility of being a free or billable service) **3.** Tag deadlines for next inspection after minor revamp verdict (21 Days after) This stage can last if the institution has not complied with the minimum standards. 11. Feedback is sent to the applicant informing them of success or of the improvements required for successful accreditation. **High-level Requirements** i. The system should allow a university to create an account in Portal (Linked to University). ii. The system should allow the university to login to the system to allow institutional accreditation application. iii. The system should have the ability to show minimum requirements for institution accreditation. iv. The system should allow the applicant to provide general details about the institution. v. The system should have the ability to show minimum requirements for institution accreditation application. vi. The system should generate a fee note (based on system fee setups) for the applicant. vii. The system should allow the finance department to view applications pending payments. viii. The system should allow the finance department team to process receipts. (E-Receipt is generated) ix. The system should allow the payment reference to be tagged against each application. x. The system should flag a fully paid-up application as ready for processing by the accreditation team. xi. The system should allow the capture of the defined possible verdicts. xii. The system should restrict the same verdict to be applied to the same accreditation application. xiii. The System should create an application depending on the verdict that references the original proposal form. It should append the re-submission deadlines that are relevant to the verdict given. xiv. The system should have the ability to send the accreditation E-Certificate.

	xv. The system should track the costs used for each accreditation process panel review.
	
	- Reports
	  - o Peer Reviewer List-General details of each peer reviewer. Sample details include No, Name, Discipline (Domain), University of affiliations, CUE Induction Status etc.
	    - o Peer Reviewer Profile-Summary of Peer reviewer's Card details. Include bio-data (photo), Qualifications summary (Academic, Professional and Experience) and Previous Assignments.

The following table outlines the process that will be involved during accrediting an program in the system.

5.2. PROGRAM ACCREDITATION

Stage	Process

	- The process is initiated by the institutions sponsor.
	- The university pays to the commission a charge of Kshs. **320,000.**
	- The university attaches the curriculum document.
	- Preliminary evaluation is done to check for completeness of the document.
	  I. If the document is complete, the process proceeds to selection of peer reviewers.
	  II. If the document is incomplete, the document is sent back to the institution for correction.
	- Depending on the program,3 peer reviewers are selected within the discipline.
	- On selection, two documents are sent to the review team:

Program Accreditation Overview/Theoretical framework	I. Commissioning letter, with the terms and conditions for the contract. II. Curriculum document, which does not reveal the details of the institution. - The three peer reviewers send individual responses and a scoring within a period of two weeks. - A consolidated final review is done from the peer review panel meeting which forms the final verdict. I. **Below 50%:** Re-design the curriculum document ▪ Goes back to step 3(3 peer reviewers) II. **50-69%:** Major Re-vamp-improve on the content ▪ One peer reviewer III. **70-%:** Minor Re-vamp-small mistakes, correct and move on ▪ Looked in by the secretariat. - The curriculum review document verdict is communicated to the institution. - On **Minor Revamp Verdict** of the curriculum: I. Resources evaluation on ground [site inspection] ▪ 3 panellists will go and make a report that determines whether the program can be accredited. II. Board committee's approval is done (program adoption report) III. Full-Board approval is handed over the program to be accredited, on approval: ▪ Communication on approval of the program • An accreditation letter Is given to the institution. - High level requirements I. The system should allow the university to login to the system to allow program accreditation application. II. The program should allow definition of domains e.g. Medicine. III. The system should have the ability to show minimum requirements for program accreditation per domain selected. IV. The system should allow the applicant to provide general details about the program. V. The system should generate a fee note (based on system fee setups) for the program accreditation.

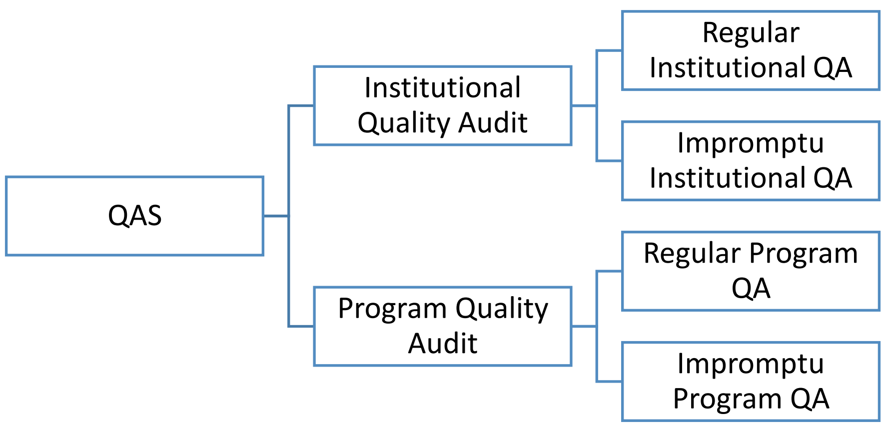
	VI. The system should allow the finance department to view applications pending payments. VII. The system should allow the finance department team to process receipts. (E-Receipt is generated) VIII. The system should allow the payment reference to be tagged against each application. IX. The system should flag a fully paid-up application as ready for the curriculum review. X. The system should allow the institution to view the status of their application. XI. The system should allow the capture of the defined possible verdicts. XII. The system should send the commissioning letter to the selected and confirmed peer reviewers. XIII. The system should flag the applications that are due for verdict processing. XIV. The system should allow a scoring sheet for the verdict processing. XV. The system should automatically assign the verdict based on the percentage of the curriculum document. XVI. The system should flag the applications that are ready for site visit. XVII. The system should allow verdict processing based on site visit. XVIII. The system should capture approval status of both the board committee and full board. XIX. The system should have the ability to send the program accreditation E-Certificate. XX. The system should track the costs used for each program accreditation process.

SECTION F:QUALITY AUDIT DEPARTMENT

The Quality Audit Department is under the Quality Audit and Standards Division of CUE. CUE conducts quality audits for accredited institutions and programs to determine their compliance with the defined standards and guidelines as well as help in the continuous improvement of these institutions and their programs. The main objectives of the Quality Audits conducted by CUE can be summarized as follows:

1. Ensure compliance with CUE's Standards and Guidelines for Institutions and Programs.
2. Ensure that accredited institutions effectively implement and maintain internal QMS.
3. Achieve continuous improved performance of accredited institutions and programs by identifying areas of improvement, defining action plans and recommending any best practices to achieve improvement.

CUE offers Institutional and Program Audit Services, summarized as follows:



6.1. INSTITUTIONAL QUALITY AUDIT

Introduction

The institutional quality audit seeks to determine compliance of an accredited institution to the defined Standards and Guidelines based on the following audit criteria:

1. Performance in relation to the Objectives of the Institution
2. Governance
3. Physical facilities
4. Master plans
5. Research
6. Staff and staff development
7. Financial Resources
8. Student enrolment and Services
9. Assessment of key Departments of the Institution

Overview of the Current (As-Is) Business Processes

The section below summarizes the current (As-is) business processes for the institutional quality audit function:

Step	Key Activities
Planning and Payment processing	• CUE initiates audit process based on due dates (Based on last audit date or charter date). • CUE prepares an audit plan that outlines the audit objectives, audit activities and their timelines, audit scope usually defined using a self-assessment report template (the SAR defines the audit checklist/ areas to be audited such as Institution's objectives, governance, physical facilities, master plans, research, staff and staff development, financial resources, student enrolment and services and assessment of key departments) and the audit resources (e.g. team lead for the assignment). • A notification is sent to the Institution to allow them to prepare for the audit (Done through a letter to the Head of the Institution/VC) • Requesting documents-After notifying the institution of the upcoming audit, CUE requests for the audit preliminary checklist based on the SAR template. • Payment processing-The institution to be audited needs to pay for the quality audit services as per the fee schedule guidelines (Based on quality charge per student)

Self-assessment submission	• The institution submits the manual self-assessment report (SAR) and any supporting documents/evidence for each section as per audit criteria. CUE requires the SAR and supporting evidence to be presented in an orderly manner. The SAR checklist is essential to guide the auditor so that no details to be assessed are overlooked, as well as for recording the findings and observations. • The Institutional Quality Audit team verifies the completeness and correctness of the submitted SAR and related supporting evidence. If approved, a peer review team from pre-qualified members is selected. Else the SAR is sent back to the institution with the recommendations on filling the SAR report.
Peer review selection and commissioning	• If the SAR has been verified by the Institutional Quality Audit team, a peer review panel is nominated. • Availability and conflict of interest checks are done, and appointment letters issued for successful panelists. • The peer reviewers are notified on the scope, duration and fees to be paid for the engagement.
Conducting field work/Site Inspections	• The peer reviewers conduct field work by inspecting the institutions and assessing compliance with CUE standards and guidelines.
Draft report preparation	• The peer reviewers prepare draft reports outlining findings of the audit. • A final consolidated report with findings and recommendations is prepared by CUE quality audit team. The report is shared with the Institution for verification and correction of any factual errors.
Audit closure and follow-up	• The final audit report is shared with the Institution, • The auditor may solicit a response from management that indicates whether it agrees or disagrees with problems in the report, a description of management's action plan to address the problem and a projected completion date. • At the closing meeting, all parties involved discuss the report and management responses. If there are any remaining issues, they're resolved at this point. • A certificate of quality audit is issued once the audit has been completed.
High-level Requirements	▪ The system should notify the institutions of an upcoming audit. ▪ The system should allow the finance department to view pending payments for audit. ▪ The system should allow the finance department team to process receipts. (E-Receipt is generated) ▪ The system should allow the payment reference to be tagged against each audit process.

		▪ The system should allow the capture of the defined possible verdicts. ▪ The system should send the commissioning letter to the selected and confirmed peer reviewers. ▪ The system should allow a scoring sheet for the verdict processing. ▪ The system should automatically assign the verdict based on the percentage of the curriculum document. ▪ The system should flag the applications that are ready for site visit. ▪ The system should allow verdict processing based on site visit. ▪ The system should capture approval status of both the board committee and full board. ▪ The system should have the ability to send the program accreditation E-Certificate. ▪ The system should track the costs used for each audit process.

6.2. PROGRAM QUALITY AUDIT

Introduction

The Program quality audit seeks to determine the extent to which an accredited academic program meets & exceeds the set Standards and Guidelines. The program quality audit is generally based on the following audit criteria:

1. Requirements of stakeholders
2. Expected learning outcomes
3. Program content
4. Program specification or description
5. Program organization
6. Didactic concept/teaching/learning strategy
7. Student assessment
8. Quality of academic staff
9. Quality of the support staff
10. Student profile
11. Student advice/support
12. Facilities & infrastructure
13. Student evaluation
14. Curriculum design & evaluation
15. Staff development activities

16. Benchmarking
17. Achievements /graduates
18. Satisfaction stakeholders

Overview of the Current (As-Is) Business Processes

The section below summarizes the current (As-is) business processes for the Program quality audit function:

Step	Key Activities
Planning and Payment processing	• CUE initiates audit process based on graduation of a cohort (Track accreditation date of the Program). • Planning-CUE prepares an audit plan that outlines the audit Purpose, audit activities and their timelines, audit scope usually defined using a self-assessment report template (the SAR defines the audit checklist/ areas to be audited), auditee (Faculty or Department of an accredited Institution) and the quality audit panel. • Submission of self- assessment report-CUE communicates to the Institution to notify them on the planned program quality audit. The Institution prepares a SAR within stipulated time frame. • Service charge and payment processing-The institution needs to pay for the program quality audit services. o Program audit charge is mandatory paid prior to commencement of the program audit (Proof of payment must accompany the submitted SAR). NB: An Audit job card can only be raised on the system if the quality assurance charge has been paid (Mandatory check).
Self-assessment submission	• The Faculty submits the manual self-assessment report (SAR) and any supporting documents/evidence for each section as per audit criteria. CUE requires the SAR and supporting evidence to be presented in an orderly manner. The SAR checklist is essential to guide the auditor so that no details to be assessed are overlooked, as well as for recording the findings and observations. • The program Quality Audit Panel verifies the completeness and correctness of the submitted SAR and related supporting evidence. If approved, a peer review panel from pre-qualified members (and agreeable with the Faculty) is selected. Else the SAR is sent back to the institution with the recommendations on filling the SAR report.
Peer review selection,	• If the SAR has been verified by the Program Quality Audit team, a peer review panel is selected.

commissioning and Induction (Training)	• Qualifications, availability, citizenship/residency and conflict of interest considerations are made, and appointment letters issued for successful panelists.
	• Panel Composition-The Panel shall be composed as per the legal provisions.
	• The peer reviewers are notified on the terms of engagement (scope, duration and payment for the engagement). An email alert shall be sent to the selected reviewer.
	• A preparatory meeting is held for the Panel (May be used for brief training on quality assessment skills, high-level review of the completed SAR, discussion of the TORs and discussion of the Program prior to the site visit).
	• A notification is sent to the Institution to allow them to prepare for the audit (Done through a letter to the Head of the Institution/VC). This is done on receipt of the SAR and audit fee payment. The notification should include the following:
	  o Audit criteria
	  o Audit Review Panel (Peer reviewers, Resource persons, Experts and Secretariat teams by name)
	  o Attachment of the audit program and schedule
	  o Administrative Resources that may be needed (e.g. Room, Internet etc.)

Conducting Site visit	• The peer reviewers conduct site visit by inspecting the Program and assessing compliance with CUE standards and guidelines.

Report preparation	• The peer reviewers prepare the following reports:
	  o Exit report outlining summary of findings & recommendations of the audit.
	  o Comprehensive report with detailed findings and recommendations is prepared.
	• The reports are shared with the Institution for verification and correction of factual errors.
	• The Institution provides a road map (a description of management's action plan) to address the problem and a projected completion date. The audit team has to monitor the institution based on the management action plan within 1 year.

Board approval, Issuance of Audit certificate and Monitoring	• The final comprehensive audit report is presented to the Board for approval. • Inspection/monitoring is done within 1 year • A certificate of quality audit is issued once the audit report, with its verdict, has been approved by the Board and inspection/monitoring has been completed.

Mandatory requirements	• The system should allow the ability to track different delivery modes e.g. Online, Face to face etc.

SECTION G: PLANNING, RESEARCH AND DEVELOPMENT DEPARTMENT

The department deals with the collection of data from universitites regarding students,staff and resources.This data is critical for reporting and is used by the quality audit department when conducting quality audit in the institutions.

The following table illustates the processes involved in the collection of data and the required fields for the data to be provided by the universities.

Department	**Information Flow**
Institution	
	1. The template (Tool) • Identification-details relating to the university • Programs-categorization of programs in the universities ✓ Name, Level, Domain cluster(21--faculty), program accreditation • Enrolment-number of students enrolled (depending on the program. Spit by gender • Disabilities-disability type (7 levels) • Counties-summary for each student per county and education level: home county • International-Region{country} • Staffing-program domain->full time->category->age category-> program domain • Staffing • Non-academic staff • Graduation • Research • Finance • Confirmation • Validation Key Controls a. Track status of each student from enrolment to graduation 2. Proposals

	• Primary data for students & staff

STUDENT MANAGEMENT

Issue	**Details**
Student	1. Primary Data
Mandatory Details	1. Student attributes a. Gender b. DOB c. ID/passport/Birth certificate No d. Home County e. Date of admission f. Name g. Sponsorship h. Nationality i. PWD (Persons with disabilities) j. Program enrolled k. Program level (bachelors….) l. Ethnic background (Socio-economic background) 2. Use IPRS to track details on the ID card 3. Track student progression 4. Trigger fields to be provided (ID card) at the point of update. 5. Manage error loading of data→on student progression 6. Transition check(condition)

STAFF MANAGEMENT

Issue	**Details**
Staff	1. Primary Data
Mandatory Details	1. Staff attributes a. Category [Academic/non-academic] b. Nationality c. ID/passport [based on nationality] d. Rank [track changes]-academic e. DOB f. Ethnicity g. Home county h. PWD (People with Disability) i. Date of 1st appointment j. Department->academic staff only k. Terms of service academic [full-time, part-time] non-academic [Permanent or temporary] l. Name m. Gender n. Highest academic qualification->Track changes o. University staff no: *compound key 2. Track changes[status] 3. Need to map staff to department for staffing ratios 4. Aggregation for non-academic staff 5. Each program is mapped to a domain 1. Reports a. Non-Academic staff by category [Admin, Technical, Support] b. Academic staff by category, by program—FTSE c. All reports in the RFP d. Graphs and export to various formats

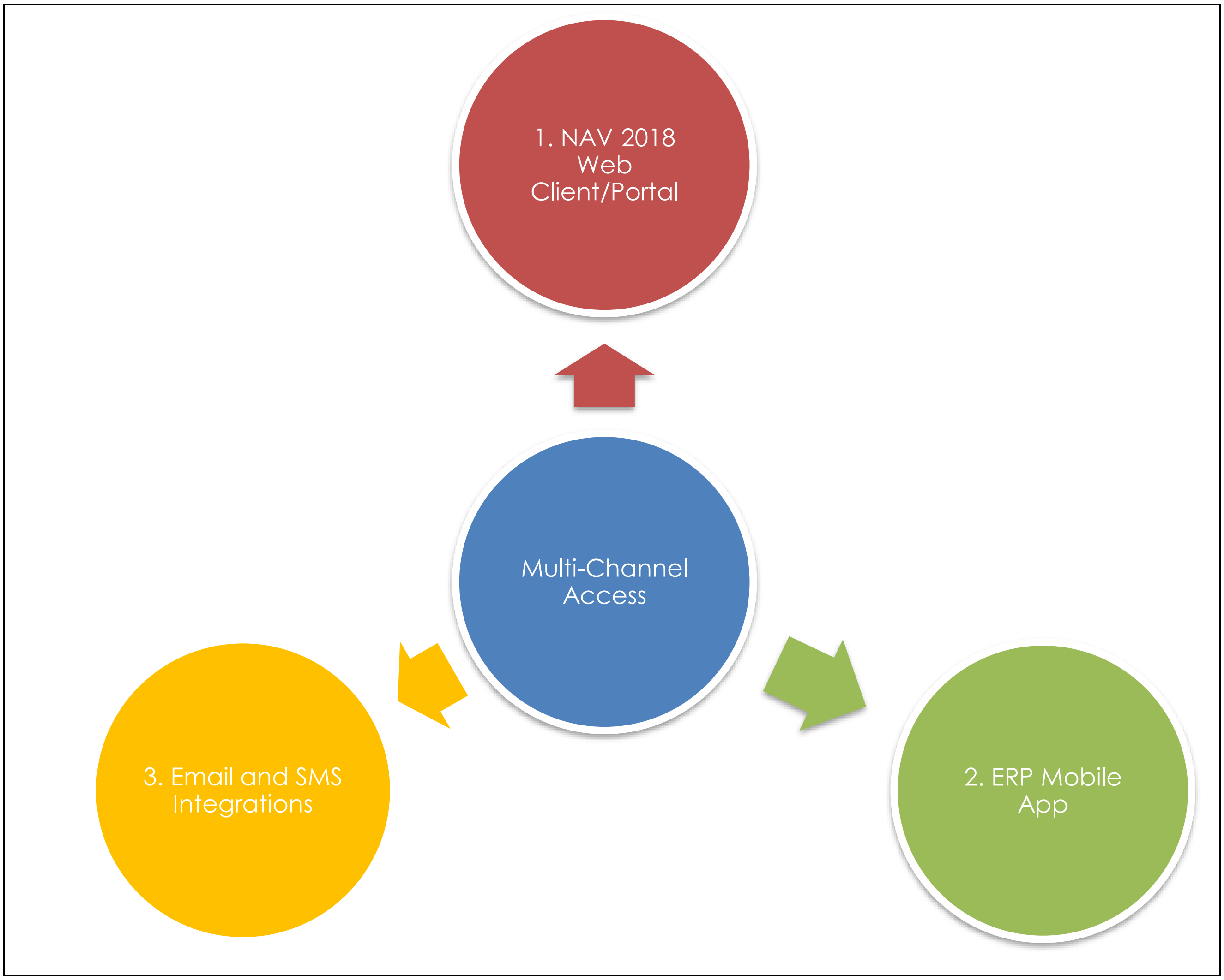
PROGRAM MANAGEMENT

Issue	Details
Program	
Mandatory Details	1. Attributes a. Unique identifier for each program b. Description c. University applying d. department e. Level [masters, BSc., cert, PhD] f. External document no. (course code based on university naming scheme) g. Date of submission h. Date of last review [every cohort 4,6] i. Date of approval j. Duration k. Blocked l. Status of accreditation
Controls	• Set timelines for universities after identifying their annual years • Notification for data upload to the universities. • On expiration of period disable the data upload functionality, enable admin intervention. • Tag a program to a department: Tag an academic staff to a department. • Have a list of clusters(department)? • Allow universities to create departments.

SECTION H: MULTI-CHANNEL ACCESS REQUIREMENTS

5.0. OVERVIEW OF THE MULTI-CHANNEL ACCESS REQUIREMENTS

The functional requirements of the ERP multi-channel access capabilities have been categorized as follows:



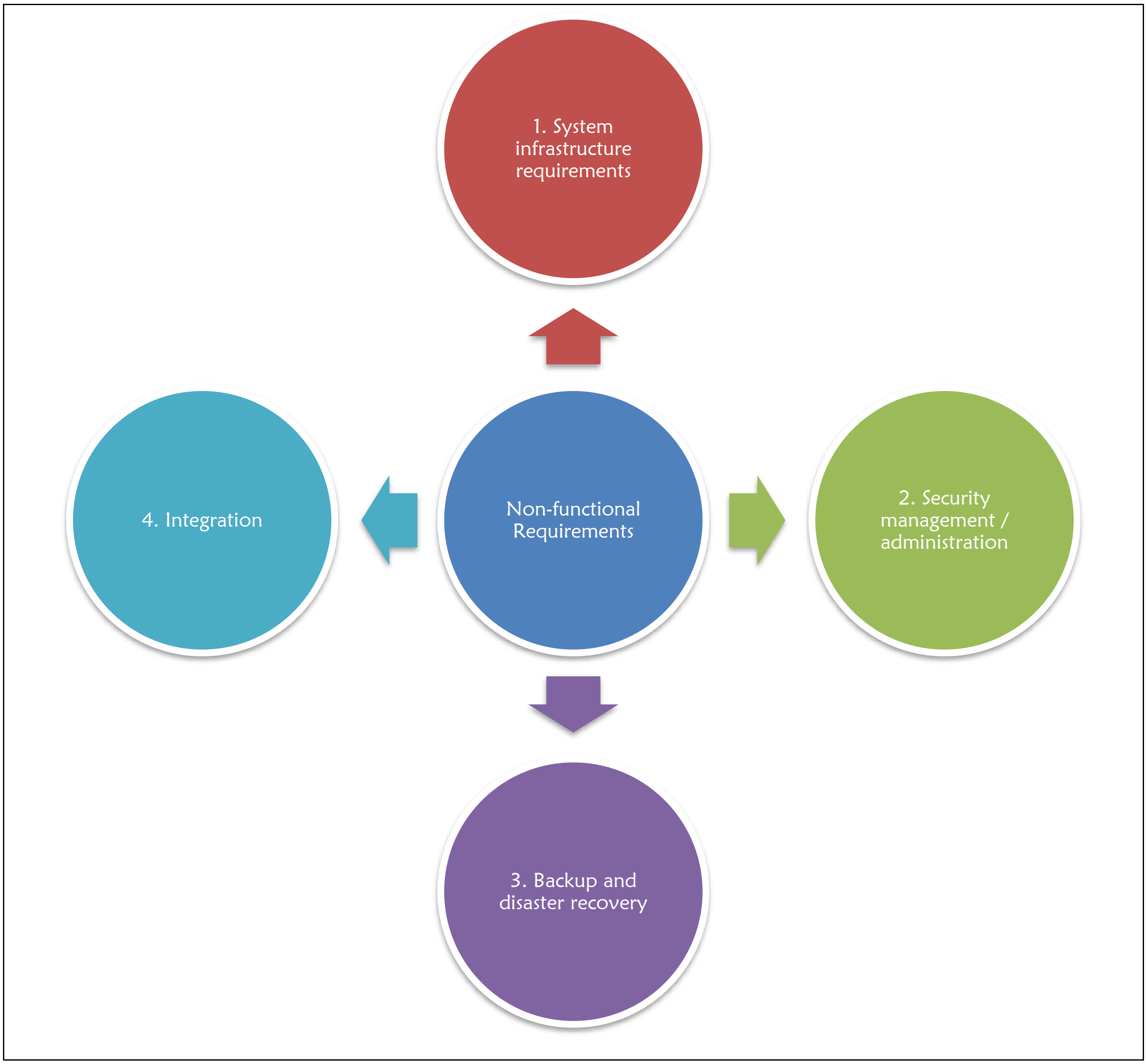
5.1. MULTI-CHANNEL ACCESS REQUIREMENTS

Issue	Requirements Details
NAV 2018 Web Client/Portal	1. Ability for authorized users to access the ERP solution via a web client/portal. 2. Ability to configure the solution to run on a Public IP infrastructure (for authorized out-of-office access) e.g. by managers for approval purposes. 3. Ability to maintain the same NAV on premise presentation and content organization when accessing the system via the web. 4. Ability to allow authorized users to access specific authorized data as shall be advised by CUE.
ERP Mobile App	1. Ability to provide NAV capabilities on the app. 2. Ability to adopt a responsive design for the app solution, which automatically fits into any screen size and resolutions, and renders an immersive experience. 3. Ability to provide real-time synchronization of the app, web and on-premise data.
SMS and Email Integration	1. Ability to setup automatic emails for approval notifications (Alert next approver on a pending approval request). 2. Ability to setup automatic emails for client communications (e.g. send receipts, statements etc.). 3. Ability to extract data that can be used for bulk SMS/broadcast communications to clients.

SECTION I: NON-FUNCTIONAL REQUIREMENTS SPECIFICATION

6.1. OVERVIEW OF THE NON-FUNCTIONAL REQUIREMENTS

The non-functional requirements of the proposed ERP solution have been categorized as follows:



6.2. NON-FUNCTIONAL REQUIREMENTS

Issue	Requirements Details
System infrastructure requirements	1. The system should be able to run on the following Client Operating System: at least Windows 7 SP 1(Professional/Ultimate/Enterprise) and above. 2. The system should be able to run on the following Server Operating System Windows server 2012 and above. 3. The backend of the system should be SQL Server 2012 (At least Standard Edition) and above. 4. The system should have client-server capability to support remote access, data entry and querying. 5. All users must be existing on the CUE active directory.
System security management	1. The system should have an independent security system that complements that of network operating system. 2. Facility to restrict users to certain functions within the system (access roles, role centers and privileges levels). 3. Ability to inherit and enforce AD-level security policies. 4. The system must provide a full audit trail of all transactions made in the system with specific user id showing objects accessed and able to timestamp audit trails.
Automatic backups	1. The system should provide an automatic backup facility to complement any other CUE backup solutions.

SECTION J: APPENDIX OF SAMPLE BUSINESS PROCESS MAPS

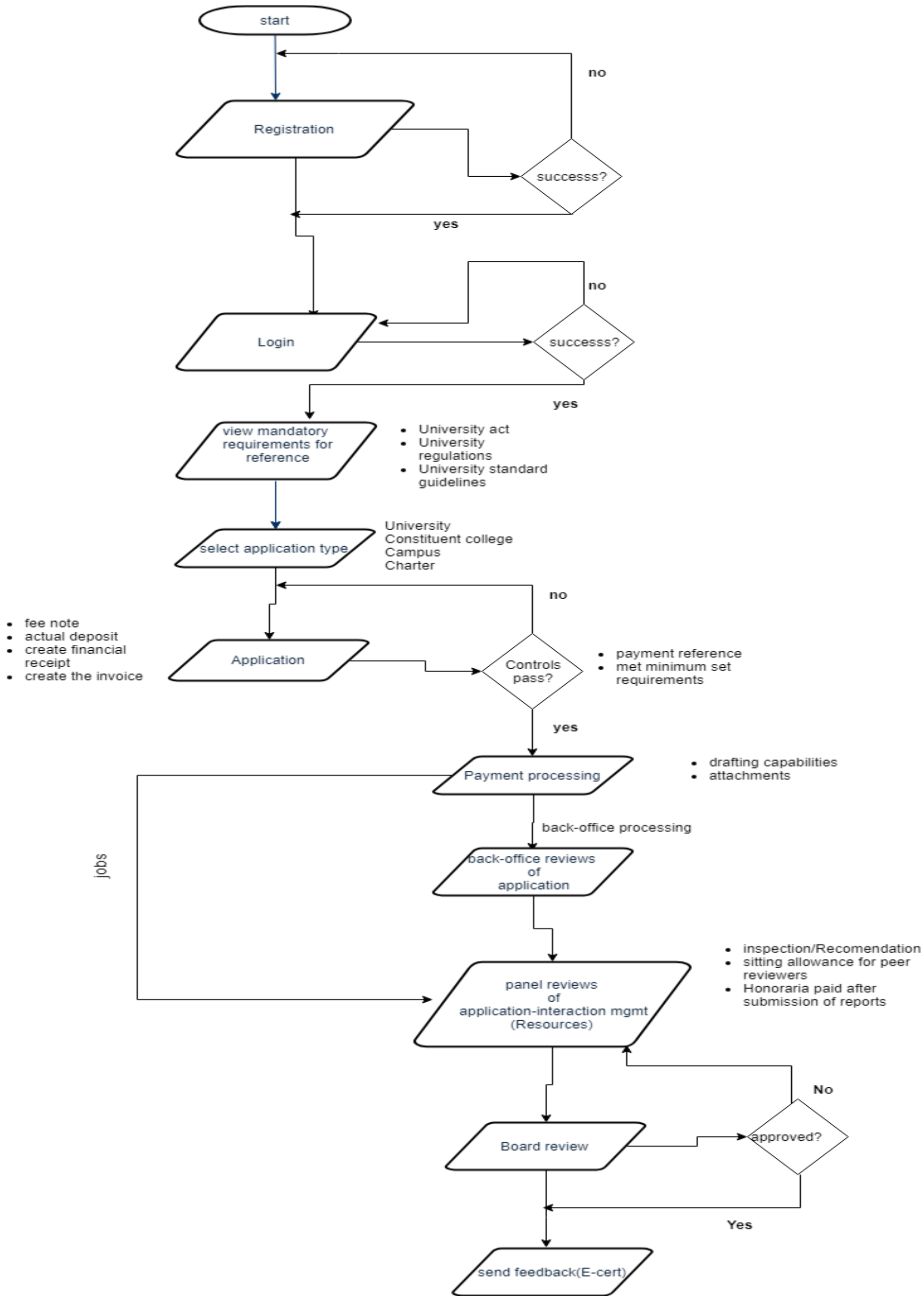


Fig 1.1 Accreditation flow chart

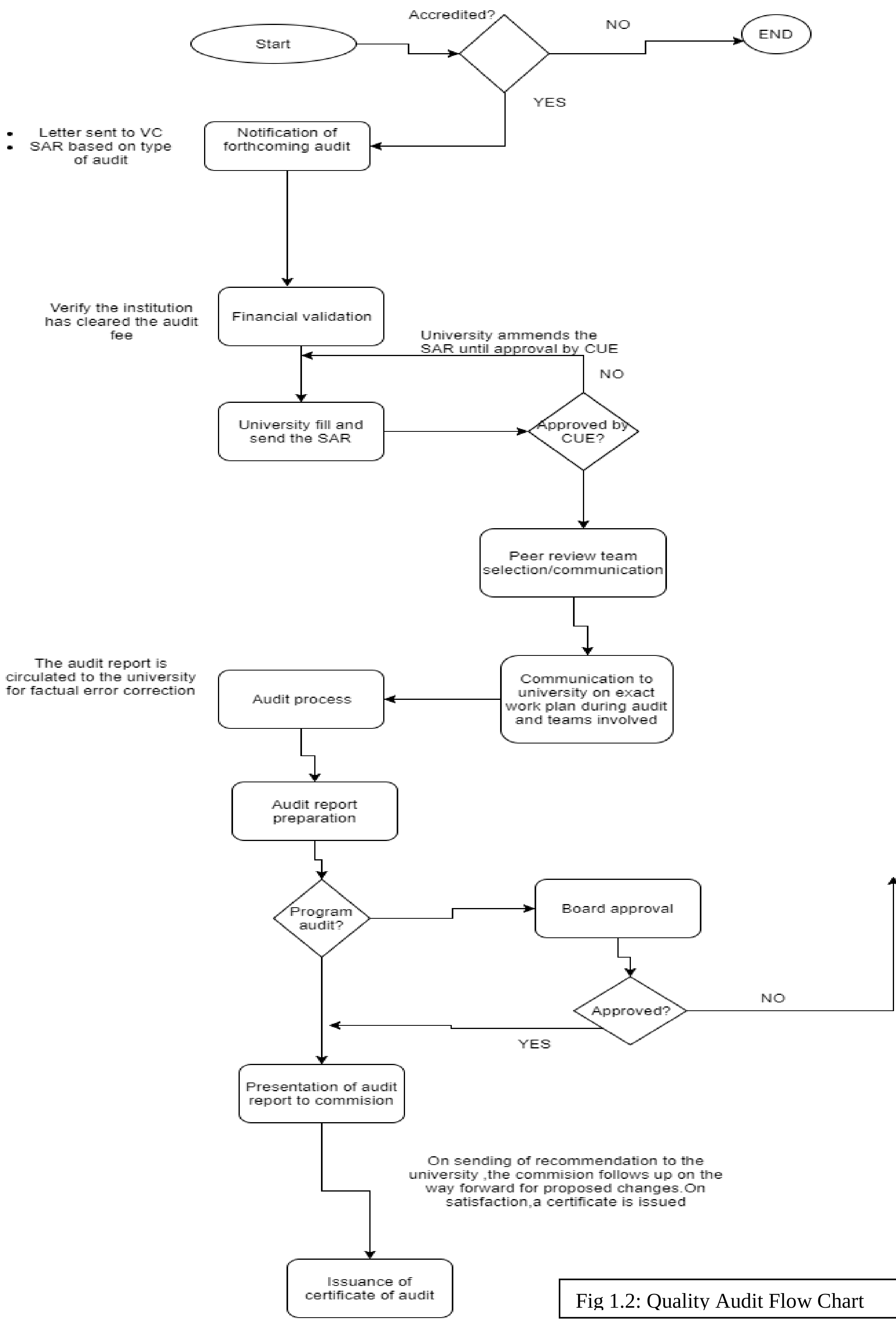


Fig 1.2: Quality Audit Flow Chart

Appendix 1: Checklist on the quality of a program

	1	2	3	4	5	6	7
1. Requirements stakeholders. The faculty/department has a clear idea							
• about the relevant needs and requirements of the government							
• about the relevant needs and requirements of the labour market							
• about the relevant needs and requirements of the students/parents							
• about the relevant needs and requirements of the academic world							
• about the relevant needs and requirements of the society							
Overall opinion							
2. Expected learning outcomes (objectives)							
• The program has clearly formulated learning outcomes							
• The program promotes learning to learn and life-long learning							
• The expected learning outcomes cover generic skills and knowledge as well as specific skills and knowledge							
• The expected learning outcomes clearly reflect the requirements of the stakeholders							
Overall opinion							
3. Program specification							
• The university uses program specifications/program description							
• The program specification shows the expected learning outcomes							
• The program specification is informative for the stakeholders							
Overall opinion							
4. Program content							
• The program content shows a good balance between general and specific skills and knowledge							
• The program reflects the vision and mission of the university							
• The expected learning outcomes have been adequately translated into the program							
• The contribution made by each course to achieving the learning outcomes is clear							
Overall opinion							
5. The organisation of the program							
• The curriculum is coherent and all subjects and courses have been integrated							
• The curriculum shows breadth and depth							
• The curriculum clearly shows the basic courses, intermediate courses, specialist courses and the final project (thesis, etc.) activities							
• The curriculum is up-to-date							
Overall opinion							
6. Didactic concept/teaching/learning strategy							
• The staff have a clear teaching/learning strategy							
• The teaching/learning strategy enables students to acquire and manipulate knowledge academically							
• The teaching/learning strategy is student oriented and stimulates quality learning							
• The curriculum stimulates active learning and facilitates learning to learn							
Overall opinion							
7. Student assessment							
• The assessments reflect the expected learning outcomes and the content of the program							
• Student assessment uses a variety of methods							
• The criteria for assessment are explicit and well-known							
• The standards applied in the assessment are explicit and consistent							
• The assessment schemes, the assessment methods and the assessment itself are always subject to quality assurance and scrutiny							
Overall opinion							
8. Quality of the academic staff							
• The staff is qualified and competent for the task							
• The staff are sufficient to deliver the curriculum adequately							
• Recruitment and promotion are based on academic merits							
• Duties allocated are appropriate to qualifications, experience, and skills							
• Time management and incentive systems are designed to support the quality of teaching and learning							
• Accountability of the staff members is well regulated							
• There are provisions for review, consultation, and redeployment							
• Termination, retirement and social benefits are planned and well implemented.							
• There is an efficient appraisal system							
Overall opinion							

Fig 1.3: Program Audit Checklist

This Document has been prepared by

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