



KITALE NATIONAL POLYTECHNIC



QUALITY MANAGEMENT SYSTEM BASED ON ISO 9001:2015 STANDARD

RESEARCH AND DEVELOPMENT PROCEDURE MANUAL

KNP/PM/R & D/ 02

VERSION: C

REVISION: 1

Authorized by: _____ Principal	Sign: 	Date: <u>25/10/2021</u>
Issued by: _____ Management Representative	Sign: 	Date: <u>25/10/2021</u>


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		Dept	Research & Development
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RECORD OF CHANGE

NO	DETAILS OF CHANGE	DATE
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PROCEDURE NUMBER 1: INNOVATIONS

1.0 GENERAL

1.1 PURPOSE

The purpose of this procedure is to ensure that innovations are carried out efficiently and effectively within and outside KNP.

1.2 SCOPE


This procedure applies to all innovations in KNP

1.3 REFERENCES

- a) STI act 28 2013
- b) IP Act 2001
- c) Copy right ACT CAP 130
- d) S&T ACT CAP 250 1979

1.4 TERMS DEFINITION

- a) HOD - Head of Department
- b) STI – Science Technology and Innovation
- c) IP – Intellectual Property
- d) S&T – Science and Technology
- e) R&DD – Research And Development Department
- f) DRCM – Departmental Research Committee members
- g) FO - Finance Officer
- h) PO – Procurement officer
- i) DRC – departmental Research committee
- j) RCC – research Conference committee
- k) NACOSTI – National Commission of Science, Technology and Innovation
- l) KIPI – Kenya Intellectual Property Institute
- m) KIRDI – Kenya Industrial Research Development Institute
- n) KICOBO – Kenya Copyright Board

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1.5 PRINCIPAL RESPONSIBILITY

The HOD RDD shall ensure that this procedure is followed and maintained.

1.6 INTERFACES/INTERACTIONS

- a) The principal for advice and approvals
- b) Procurement department for provision of materials
- c) Finance officer for budgetary allocation
- d) Academic HODs to provide coordination of proposals, supervision and vetting of innovations
- e) Innovators for development and improvement of projects

1.7 PERFORMANCE TARGETS

PERFORMANCE TARGET	MONITORING & MEASUREMENTS
Each department to develop at least one innovation annually.	Reviewing no. of successful projects
100% patent/copyright of the developed and verified innovations	Review no. of innovations patented/copyrighted


1.8 RESOURCES

The resources to be used in this process areas listed below;

- a) Workshops/physical facilities
- b) Computers/Lap-tops/Printers
- c) Personnel
- d) Stationery


1.9 INPUTS AND OUTPUTS

INPUTS	OUTPUTS
Innovative ideas	Innovation proposals
Appropriate materials	Complete and functional projects
Innovation proposals	Innovation patent/copyright numbers
Patent/copyright application forms	Innovation write-up/report

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2.0 METHOD


- 2.1 This procedure shall start with the HOD RDD forwarding the innovation needs and schedule through the deputy principal academics to the Principal for approval.
- 2.2 Upon approval and as per the schedule, the HOD RDD shall sensitize all students, technicians and lecturers across the academic departments on opportunities for creative and innovative ideas within the Polytechnic and subsequently invite them to submit proposals through their DRCM
- 2.3 The DRCM shall in consultation with the respective HoDs vet the proposed creative and innovative ideas.
- 2.4 In vetting proposals, the DRCM shall consider the following:-
 - a) Originality of the ideas,
 - b) Functionality of the proposed innovations,
 - c) Cost of developing the innovations, and
 - d) Time frame for developing the projects.
- 2.5 After the vetting exercise, DRCM shall communicate the results of the vetting including any recommendations from the panel to the owners of the proposals.
- 2.6 The DRCM shall forward the proposals recommended for funding to the HOD RDD who shall submit the budgets for the proposals through the deputy principal academics to the Principal for approval.
- 2.7 In approving the budgets, the Principal shall consider the following:-
 - a) Budgetary allocation, and
 - b) Relevance of the proposed innovations to the Polytechnic.
- 2.8 In the event of disapproval, the Principal shall give comments and revert the budgets to the HOD RDD for amendment and re-submission.
- 2.9 Upon approval, the HOD RDD shall liaise with the FO for disbursement of approved funds or PO for procurement of required goods and services for the proposals and initiation of the design and development of the innovations.
- 2.10 The DRCM from respective department shall monitor the design and development process of all innovations in their department.

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- 2.11 The DRCM shall have all the finished innovations vetted for functionality. In selecting the projects to be patented/copyrighted, the following shall be considered:-
- a) Originality of the projects,
 - b) Functionality of the projects, and
 - c) Qualitative features of the projects.
- 2.12 After the selection of the vetted innovations, the HOD RDD shall coordinate application of patenting/copyrighting of the innovations and set dates for open viewing within the polytechnic.
- 2.13 The procedure shall be deemed complete upon successful patent/copyright application and open viewing within the polytechnic

3.0 LIST OF APPLICABLE RECORDS/REPORTS

- a) Planning meetings filled attendance
- b) Planning meetings minutes
- c) Approved Budget
- d) Filled exhibition attendance list
- e) Innovation reports
- f) Exhibition reports

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PROCEDURE NUMBER 2: PARTICIPATION IN TVET FAIRS /SHOWS/ EXHIBITIONS

1.0 GENERAL

1.1 PURPOSE

The purpose of this procedure is to ensure consistency and effectiveness in participation in TVET fairs and exhibitions.

1.2 SCOPE


The procedure applies to the participation of all TVET fairs and exhibitions by the Polytechnic.

1.3 REFERENCES

- a) Current Parent Ministry TVET Fairs guidelines.
- b) STI act 28 2013
- c) IP Act 2001
- d) Copy right ACT CAP 130
- e) S&T ACT CAP 250 1979

1.4 TERMS AND DEFINITIONS

- a) TVET – Technical, Vocational, Education and Training.
- b) HOD – Head of Department
- c) STI – Science Technology and Innovation
- d) IP – Intellectual Property
- e) S&T – Science and Technology
- f) RDD – Research & Development Department
- g) TFC – TVET Fairs Committee.
- h) FO – Finance Officer.
- i) DRC – departmental Research committee
- j) RCC – research Conference committee
- k) NACOSTI – National Commission of Science, Technology and Innovation
- l) KIPI – Kenya Intellectual Property Institute
- m) KIRDI – Kenya Industrial Research Development Institute
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1.5 PRINCIPAL RESPONSIBILITY

The HOD RDD shall be responsible for the implementation of this procedure.

1.6 INTERFACES

- a) **The Principal** – For leadership in decision making and funding of approved proposals.
- b) **Heads of departments** – For coordination of sourcing and development of innovations
- c) **Staff** – The lecturer and technicians who forms the critical link between the innovators (students) and the TFC hence their supervision report is critical.
- d) **Students** – Who form the major source of creative and innovative ideas to TVET Fairs agenda for its success.

1.7 PERFORMANCE TARGET


The performance shall be measured through the overall performance of the Department basing on

PERFORMANCE TARGET	MONITORING AND MEASUREMENT
<ul style="list-style-type: none"> • Present at least 5 innovations at regional TVET fairs and exhibition annually 	<ul style="list-style-type: none"> • Review the list of proposals presented • Review the approved project budgets • Review the finished projects • Analyze the regional TVET fairs & Exhibition results
<ul style="list-style-type: none"> • At least 2 innovations presented at National science week/ National TVET fairs activity. 	<ul style="list-style-type: none"> • Review the quality of successful innovations prior to submission to regional TVET fairs event • Review approved budgets

1.8 RESOURCES

The resources to be used in the process are listed below:-

- a) Funds
- b) Personnel (lecturers students and technicians)
- c) Equipment and Machines


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1.9 INPUTS AND OUTPUTS

INPUTS	OUTPUTS
Innovative ideas and materials	<ul style="list-style-type: none"> • Finished Project proposals • Finished projects • TVET project reports • TVET fairs and exhibition results
Man Power	
Technical and intuitive abilities	
Developing /manufacturing/processing	
Innovative proposals	

2.0 METHOD


- 2.1 This procedure shall start at the 3rd week beginning of every term annually with the HOD RDD convening a meeting with TFC to develop a schedule for the development of projects to be presented during TVET fairs.
- 2.2 In developing the schedule, the meeting shall be guided by the following:-
 - a) The Ministry's TVET Fairs calendars,
 - b) Regional TVET Fairs committee's calendars, and
 - c) Polytechnic's calendar of events.
- 2.3 After the meeting the HOD RDD shall forward the schedule through the deputy principal academics to the Principal for approval.
- 2.4 In approving the schedule, the Principal shall verify the adherence of the schedule to the criteria in 2.2 above.
- 2.5 In the event that the schedule is not satisfactory, the Principal shall give comments and return it to the HOD RDD for amendment and resubmission.
- 2.6 Upon approval, the HOD RDD shall as per communication procedure in the operation Procedure Manual distribute copies of the schedule to all Noticeboards, TFC members, Heads of Departments, the Dean of Students, Registrar, Finance Officer, Deputy Principal and the Principal for information and action.
- 2.7 The innovations shall be developed as per clause 2.1 to 2.12 of the innovations procedure in this manual.

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- 2.8 On the scheduled date, the TFC shall have all the finished innovations viewed in an open forum by the Polytechnic community and best ones selected.
- 2.9 In selecting the projects to be presented in TVET fairs/shows/exhibitions, the following shall be considered:-
- a) Originality of the projects,
 - b) Functionality of the projects.
 - c) Qualitative features of the projects.
 - d) TVET fair/show/exhibition themes and guidelines
- 2.10 After the selection of projects to be presented in TVET fairs/shows/exhibitions, TFC shall coordinate presentation of these projects during local, regional and national TVET fairs/shows/exhibitions.
- 2.11 During the TVET fairs/shows/exhibitions, the TFC in consultation with the Registrar shall ensure marketing of the Polytechnic's programmes to the general public.
- 2.12 One week after participation in each TVET fairs/shows/exhibitions, the HOD RDD shall prepare a report and submit it through the deputy principal academics to the principal.
- 2.13 Upon submission of the report to the principal's office, HOD RDD will present the same report to the next HoDs' meetings.
- 2.14 The procedure shall be deem complete upon return of all innovations, tools and borrowed items to respective departments within and outside the polytechnic.

3.0 LIST OF APPLICABLE RECORDS/REPORTS

- a) Minutes of the meetings.
- b) Creative and innovative ideas proposals.
- c) TVET Fairs reports.
- d) Communications

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PROCEDURE NUMBER 3: ORGANIZING AND CONDUCTING CONFERENCES

1.0 GENERAL

1.1 PURPOSE

The purpose of this procedure is to ensure that the conferences in KNP are carried out effectively, consistently and efficiently.

1.2 SCOPE


This procedure applies to hosting of national and international conferences in KNP or any other venue that shall have been chosen.

1.3 REFERENCES

- a) International journals
- b) KNP research policy
- c) STI act 28 2013
- d) IP Act 2001
- e) Copy right ACT CAP 130
- f) S&T ACT CAP 250 1979

1.4 TERMS AND DEFINITION

- a) HOD Head of Department
- b) STI – Science Technology and Innovation
- c) IP – Intellectual Property
- d) S&T – Science and Technology
- e) RDD – research and development department
- f) MIS – Management Information System
- g) FO -Finance Officer
- h) PO – procurement officer
- i) DRC – departmental Research committee
- j) RCC – research Conference committee
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m) KIRDI – Kenya Industrial Research Development Institute

n) KECOBO – Kenya Copyright Board

1.5 PRINCIPAL RESPONSIBILITY

The HOD shall ensure that this procedure is followed and maintained.

1.6 INTERFACES/INTERACTIONS

- a) The principal for decision making, approval and funding of the conferences
- b) HOD for coordination of proposal development, vetting and processing
- c) FO for budget allocation
- d) PO for procurement of goods and services
- e) Presenters for development of research papers

1.7 PERFORMANCE TARGETS

PERFORMANCE TARGET	MONITORING & MESUREMENTS
Organize at least one National/International conference annually	Review List of approved abstracts


1.8 RESOURCES

The resources to be used in this procedure shall include the following;

- a) Research and project reports
- b) Personnel
- c) Stationery
- d) ICT equipment and online communication

1.9 INPUTS AND OUTPUTS


INPUTS	OUTPUTS
Calendar of events	Book of abstracts
Call for papers	Conference communiqué
Abstracts	National/International conference

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Conference planning	Conference report
Presented papers	Filled attendance registers
Rapporteurs reports	Presented abstracts
Conference evaluation reports	
Attendance registers	

2.0 METHOD

- 2.1 This procedure shall start with the HOD writing through the deputy principal academics to the principal seeking authority to call for papers.
- 2.2 Upon acceptance by the principal, the dates for the conference shall be agreed upon.
- 2.3 The HOD shall make a call for research abstracts and papers at least 90 days before the conference date.
- 2.4 HOD shall write to interested parties and sponsors willing to support the conference.
- 2.5 Interested researchers / Participants shall submit proposals to the HOD as per the stipulated time lines
- 2.6 Upon receiving the proposals, the RCC shall convene an evaluation meeting to vet and approve abstracts/papers to be presented.
- 2.7 The RCC shall prepare a list of the approved abstracts and submit a copy to the HOD RDD for onward transmission through the deputy principal academics to the principal for approval.
- 2.8 The HOD RDD shall notify successful presenters and liaise with MIS officer for posting the list on the KNP website within 7 days of approval by the principal.
- 2.9 The RCC shall hold planning meetings as per meeting procedure no. 3 in the operation procedures to arrange for the conference.
- 2.10 The successful presenters shall hand in their power point full papers to the HOD RDD as per the stipulated time lines.
- 2.11 The conference participants shall make payments of the conference fee at the finance office and be issued with receipts.

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2.12 On the conference day, the participants shall record their details in the conference attendance register and thereafter be issued with conference stationery /materials

2.13 The conference shall proceed with the presentation of papers by various presenters as per laid down conference procedures and timelines.

2.14 Upon completion of the conference the paid up participants shall be issued with certificates of attendance/presentation.


2.15 The conference proceedings shall be documented by any one or more of the following ways within 240 days of the conference;

- a) Reports
- b) Posters
- c) Publications
- d) Journals
- e) books

2.16 The procedure shall be deemed complete after successful completion of the conference and upon submission of conference report to the principal.

3.0 LIST OF APPLICABLE RECORDS

- a) Planning meetings filled attendance
- b) Planning meetings minutes
- c) Approved Budget
- d) Filled Conference attendance list
- e) Conference reports
- f) Paper abstracts booklet.

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PROCEDURE NUMBER 4: RESEARCH AND SURVEYS

1.0 GENERAL

1.1 PURPOSE

The purpose of this procedure is to ensure that all research and survey activities within and outside KNP are carried out effectively and efficiently.

1.2 SCOPE


This procedure applies to all Research and Surveys carried out by KNP

1.3 REFERENCES

- a) KNP research policy
- b) STI act 28 2013
- c) IP Act 2001
- d) Copy right ACT CAP 130
- e) S&T ACT CAP 250 1979

1.4 TERMS AND DEFINITION

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- d) S&T – Science and Technology
- e) RDD – research and development department
- f) FO - Finance Officer
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1.5 PRINCIPAL RESPONSIBILITY

The HOD RDD shall ensure that this procedure is followed and maintained.

1.6 INTERFACES

- a) The principal for decision making, approval and funding of the research and survey activities
- b) Librarian for storage and dissemination to the public the research and survey findings
- c) FO for budget allocation
- d) PO for procurement of goods and services
- e) Academic HODs for identification of research/survey areas, conducting research/survey and analysis of research/survey results

1.7 PERFORMANCE TARGETS


The performance shall be measured through the overall performance of the department based on the following;

PERFORMANCE TARGET	MONITORING & MEASUREMENTS
Undertake at least One Customer satisfaction survey annually	Survey conducted, Data analysis Communication and reporting
Undertake Baseline Survey on demand	Review the survey and analysis tools
Ensure finalist classes conduct at least one research project	Review project reports Observe the innovation development

1.8 RESOURCES

The resources to be used in this process areas listed bellow;

- a) Facilities – workshops/labs
- b) Equipment - Computers/Lap-tops/ Printers
- c) Personnel
- d) Stationery
- e) Funds


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1.9 INPUTS AND OUTPUTS

INPUTS	OUTPUTS
Questionnaires	Filled questionnaires
Data analysis tool	Filled analysis tools
Materials	Project reports
	Fabricated innovations
	Actions on recommendations

2.0 METHOD

- 2.1 This procedure shall start with the HOD RDD informing the principal through the deputy principal academics on need for survey/research and seek consent to conduct survey/research in KNP.
- 2.2 The principal shall consent or not consent or consent with recommendations. In consenting the principal shall consider the following:
- a) Calender of events
 - b) Relevance of survey
 - c) Statutory and regulatory requirements
 - d) Availability of funds
 - e) Availability and capacity of personnel to conduct the survey
- 2.3 Upon acceptance, HOD RDD shall develop and submit a budget based on scope and complexity of survey/research need identified to the principal for approval. The principal shall approve or not approve or approve with recommendations based on criteria in clause 2.1(a-e)
- 2.4 If the budget is approved HOD RDD shall proceed and assign survey/research duties to DRCM.
- 2.5 The DRCM shall prepare questionnaires and distribute to respondents as per survey/research and sample design.
- 2.6 The DRCM shall analyze the data and write a report with recommendations and forward to HOD RDD within two weeks after survey.

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2.7 Within a week of reception ,HOD RDD shall verify and forward the report and recommendations to the principal through the deputy principal academics for review, approval and for follow up on recommendations to ensure they are acted upon.

2.8 The procedure shall be deemed complete upon distribution of the Survey/research reports to the principal, the client department(s), the library and receiving evidence of action on recommendations

3.0 LIST OF APPLICABLE RECORDS/REPORTS

- a) Planning meetings filled attendance
- b) Planning meetings minutes
- c) Approved Budget
- d) Survey reports
- e) Evidence of action on recommendations