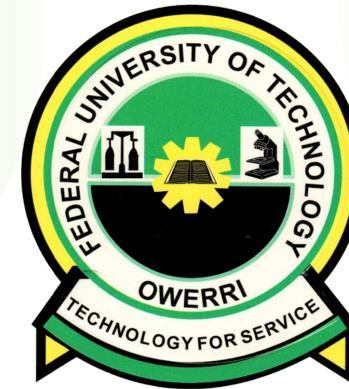


**FEDERAL UNIVERSITY OF TECHNOLOGY
OWERRI - NIGERIA**



**RESEARCH POLICY
(REVIEWED)**

FOREWORD

The University Mantra “**Driving the Culture of Excellence**” subsumes the mission statement of the Federal University of Technology, Owerri and this is to position the university to be a premier Institution of excellence in technological knowledge production and dissemination.

This would be achieved through teaching, research and service to mankind. The drive to fulfill this noble vision led to the creation of the first version of Research Policy Document by the University.

For effective Implementation of this research policy and achieving its research focus, the University constituted a **University Research Committee** to foster research practices characterized by excellence, and aspire to the highest standards of research integrity. The committee also has a clear mandate to develop research capacity, utilize research outputs for development and also subscribe to fundamental ethics, principles and values governing research involving human participants, animals, and the environment.

This Research Policy Document provides the needed guidelines for research activities by staff and students of **FUTO**. The document was reviewed upwards by academics involved in elaborate research activities and it outlined the general vision of the University with regard to the utilization of cutting – edge research knowledge targeted at current development needs and demands in the near future.

This research policy document is the second version to be articulated by the University and it shall pay attention to the appropriate support for research activities. It is expected that with years of use, the dynamics associated with research in the University will form more robust input into this document in line with national and international policy on research activities.

I therefore present this reviewed research policy document to provide the needed guidelines for research activities by staff and students of **FUTO**.

Prof. Francis Chukwuemeka Eze
Vice-Chancellor

VISION

The Federal University of Technology, Owerri seeks to become a centre of excellence in Science and Technology for training high level manpower capable of contributing to the development of society.

MISSION

The University is to be a model citadel of learning and scholarship with emphasis on imparting not only theoretical knowledge, but more importantly, practical skills that can provide solutions and service to humanity.

PHILOSOPHY

The University aims not only at imparting theoretical knowledge, but also at giving greater emphasis to practical experience in the field and the development of appropriate skills by the students. It seeks to make sure that it produces sound 'Finished Products', who could be gainfully employed within their fields of specialization on graduation. To this end, all degree programmes of the University will provide for adequate practical experience on campus and reasonable periods of industrial attachments, as well as for a common foundation year stressing basic sciences.

The Federal University of Technology, Owerri, will continue to ensure that technology courses are given prominent position. Cognizance must, however, be taken of the fact that technology must serve social needs and that technologists must understand the society in which they operate and the impact of their work on the society. Therefore, students will be adequately exposed to the humanizing and liberalizing influences of the social sciences and humanities, as necessary ingredients in the general development of our technological manpower. In considering the objectives of the University, it is important to note the following:

- (a) There is an urgent need to undertake a thorough identification of indigenous technologies currently used by our people in the food and industrial sectors with the view to upgrading and modernizing them.

- (b) It is a duty for the University to harness its resources most profitably, in servicing as well as giving leadership in industrial and technological development in the country.
- (c) The general academic programmes must take into account the need for relevance and the location of the University, as well as the general needs of the nation.

OBJECTIVES

The objectives of the University as contained in the Act establishing it are as follows:

- (a) To encourage the advancement of learning and to hold out to all persons without distinction of race, creed, sex or political conviction, the opportunity of acquiring a higher education in technology.
- (b) To develop and offer academic and professional programmes leading to the award of diplomas, first degrees and higher degrees which emphasize planning, adaptive, technical maintenance, developmental and productive skills in engineering, scientific, agricultural, medical and allied professional disciplines, with the aim of producing socially matured men and women with capability not only to understand, use and adapt existing technologies but also improve on them and develop new ones.
- (c) To act as agent and catalyst, through postgraduate training, research and innovation for the effective and economic utilization, exploitation and conservation of the country's natural, economic and human resources.
- (d) To offer to the general population as a form of public service, the result of training and research and to foster the practical applications of these results.
- (e) To establish appropriate relationship with other national institutions involved in training, research and development of technologies.
- (f) To identify technological problems and needs of the society and find solution to them within the context of overall national development.
- (g) To provide and promote sound basic scientific training as a

foundation for the development of technology and applied sciences, taking into account indigenous culture and the need to enhance national unity; and

- (h) To undertake any other activities appropriate for a university of technology of the highest standard.

The Strategies to be adopted in achieving the above stated objectives are as follows:

- (A) The general orientation of the University should be forward looking. Within itself, the University must be a cohesive community, dedicated to the advancement and communication of learning, and having an active social as well as intellectual life.
- (b) The University will not be a closed or isolated community, but would be involved in multiple relationships with society. This begins with the University's determination to concentrate on the fields of study most needed by contemporary Nigerian. It will also be reflected in the policy in the field of research and consultancy, and in cultural activities by the University which should, in general, be open to members of the surrounding community.
- (c) The University will develop contacts with industrial sector, research institutes, and other institutions of higher learning in Nigeria, and indeed on international scale, to provide research links and consultancy services of a high standard.

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1.0 PREAMBLE

The Federal University of Technology, Owerri (FUTO), recognizes research as a systematic investigation, original in concept, designed to develop or contribute to knowledge and understanding.

2.0 RESEARCH POLICY

The University Research Policy addresses the conduct of research in the University. The University has adopted the principles of free scholarship which guarantees researchers the sole responsibility of results from their research activities including publications that may arise.

- a. The Research Policy shall apply to all staff and students of the Federal University of Technology, Owerri, and other users of its research facilities.
- b. The University shall ensure that research activities are in line with its Vision and Mission.
- c. The University shall ensure and promote the highest standards of scholarly practice and ethical conduct in research.
- d. The University shall ensure the principles of stewardship are applied to research records, protecting the integrity of the assets.

3.0 RESEARCH PHILOSOPHY

The Federal University of Technology, Owerri was established in recognition of the vital role that technology and the effective utilization of scientific knowledge play in the development of any society. The University will be involved in technological and scientific research which will lead to the improvement of human society by developing and applying scientific and technological principles in the solution of human problems. This will be achieved by conducting rigorous investigations with trustworthy findings using appropriate research tools that fit the nature of the research questions and ensuring transparency of the data collection process, the validity and reliability of the measures being used, the soundness of the methodological techniques and the clarity of research report which will lead to academic and societal improvement.

4.0 RESEARCH OBJECTIVES

In line with its mandate and in pursuance of the set objectives establishing FUTO as a University of technology, the research objectives of FUTO include:

- a) To create an enabling environment within FUTO for the development of capacity in quality research in all disciplines
- b) To provide a support system that promotes and motivates faculty members to engage in problem solving research;
- c) To offer to the general population, as a form of public service, the results of training and research and to foster the practical applications of these results;
- d) To establish appropriate relationships with other national and international institutions involved in training, research and development of technologies;
- e) To provide appropriate environment that enables identification of technological problems and needs of the society and to find solutions to them within the context of overall national development.
- f) To ensure that researchers get the full benefits of their research output.

5.0 RESEARCH FUNDING

The Federal University of Technology, Owerri, in line with its mandate shall establish and operate a Federal University of Technology, Owerri, research Fund (FUTOREF). University Research Grants Committee shall be established to operate the fund whose cardinal functions shall include:

- i. Development of capacity in quality research in all disciplines
- ii. Continuously up-grade University Research and Development infrastructure
- iii. Support and coordinate the University Research mentoring and training schemes

5.1 Sources of Research Funds for FUTOREF

The FUTOREF shall derive its funding principally from:

- i. The University budget
- ii. Sponsors and donor agencies and,
- iii. Other credible sources.

6.0 RESEARCH ADMINISTRATION

6.1 Research Capacity Building

Capacity building in research is a complex process that involves individual skills, research environment, funding, adequate infrastructure, incentives, time available to the researchers and supervision. Effective capacity building results, when there is a balanced interplay between individual/team and the above environmental factors.

In view of the crucial importance of research as a major driver of socio-economic advancement and the fact that there is limited capacity in the country to conduct research that leads to development of appropriate technology, products and services, there is need to facilitate capacity building in research in the University. Hence,

- i. The University shall develop a Training Module to constantly build research capacity amongst staff and students. The Research Training Module should address: research methodology, grants proposal writing, ethical practice, innovation techniques, research management, ICT competencies, publishing and patents, etc.
- ii. The Postgraduate School shall develop a framework for enforcing appropriate supervision to ensure that graduate students and junior academic staff are properly mentored in conduct of high quality research. Monthly seminars, quarterly reports, shall be mandatory for all postgraduate students and research associates, etc.
- iii. The University shall improve relevant laboratories, library holdings and internet access for the purpose of research.
- iv. The University shall promote multi-disciplinary research, national and international collaboration across institutions and countries.

- v. The University shall conduct quarterly reviews of key on-going research projects to assess progress, appropriateness and relevance, constraints faced by researchers, and provide interventions and opportunities for promotion of high quality research.
- vi. The University shall promote collaboration with relevant industries in the acquisition of knowledge on cutting-edge technologies, research and development.
- vii. The University shall encourage post-doctoral research for qualified staff.
- viii. The University shall explore exchange programmes that involve split-site or “sandwich programmes” for doctoral studies, whereby students spend some time in research labs/institutions abroad and conclude their work in FUTO.
- ix. The University shall support generally, research enterprise through incentives that recognize and reward high-calibre research excellence and innovation.

6.2 Research Activities by Staff

6.2.1 Rights and Obligations

Part of the mission/mandate of the University is to “act as agent and catalyst, through postgraduate training, research and innovation for effective and economic utilization, exploitation and conservation of the country's natural, economic and human resources” and “to offer to the general population as a form of public service, the results of training and research and to foster the practical application of these results.”

To this end, all academic staff of the University have,

- i. both right and obligation to conduct research and report the findings from such research activities;
- ii. right to access University and external research funds and facilities subject to availability.

6.2.2 Role of Principal Researchers/Investigators

The principal researcher or investigator has the overall duty for both fiscal and technical management of any sponsored research. He/she

has the responsibility of managing the project within the funding limitations and to report the progress of the research, from time to time, to the sponsor(s). He/she has the obligation to ensure the quality, reliability and integrity of the research findings being reported by the members of the research team.

If additional time is required to complete a research project, the principal researcher is to request for extension of the award. He/she is expected to initiate such an extension and process properly in accordance with the terms of the sponsored research award. The University requires all principal researchers to review from time to time their obligations for stewardship of approved funds and must strictly comply with applicable regulations.

6.2.3 Research Activities and other Responsibilities

No academic staff of the University shall be exempted from teaching and/or other responsibilities in the University on account of his/her research activities. A memorandum of understanding (MOU) shall cover all research activities involving the University. All staff, students and visiting scholars shall adhere to the ethical standards of the University. Anything to the contrary shall be treated as act of gross misconduct.

5. Staff members are encouraged to attract external funds for research activities. Appropriate incentives shall be given to such staff members. Best Research Awards shall be given annually to encourage deserving academic staff and a prize for the **BEST RESEARCHER OF THE YEAR** at School levels shall be given.

6.3 Administrative Costs

The University shall retain 10% of all external research funds attracted into the University by staff/students as administrative costs. This can be reviewed from time to time as the need arises.

6.4 Monitoring and Evaluation

There should be a Monitoring and Evaluation Committee with membership drawn from all Schools to be domiciled under the Office of

the Deputy Vice-Chancellor, Research, Development and Innovation (DVC – RDI).

6.5 Frequency of Awards of Research Grants Exclusively Managed by FUTO

This should be as follows:

- i. Research grants managed with funds available to FUTO shall be awarded annually.
- ii. Every academic staff is qualified to apply for research grants managed by FUTO.
- iii. An awardee may qualify for a new research grant having successfully completed the research for which a previous grant was awarded.
- iv. A research will be adjudged completed if awardee has submitted final report of the research and published the research output in a reputable journal, or in the process of being patented with certification from the Intellectual Property and Technology Transfer Office.

6.5.1 Transfer of Existing Research Funds/Grants

In transferring an existing grant to another institution, the following procedure shall apply:

- a) The Principal Investigator/Team Leader shall take the following actions:
 - i. Obtain the written approval of the Vice-Chancellor, through the appropriate channels;
 - ii. Provide the verifiable status of any cost sharing or matching commitment to the University;
 - iii. Ensure that the sponsor/donor's conditions for transfer are met;
 - iv. Discuss all Intellectual Property (IP) issues with the appropriate University organs and,
 - v. Complete all processes and necessary documentation demanded by the University and the sponsor.
- b) The University Research Grants Committee shall take the

following actions:

- i. ascertain the exact amount of uncommitted or unexpended funds;
- ii. review any cost sharing or matching commitments, ascertaining those that have been met and those to be transferred;
- iii. review agreements for sub-grants, if any, ascertaining which have been completed and which have not;
- iv. review agreement for equipment purchase and capitalized equipment purchased on the existing grant that may move with the principal investigator/team leader;
- v. review commitments to personnel, including graduate students and,
- vi. advise the Vice-Chancellor on the appropriate course of action in each circumstance.

6.5.2 Research Equipment

The ownership of and right to all equipment acquired through or by means of sponsored research grants shall be vested in the University. No such equipment shall be sold, exchanged, transferred or otherwise disposed of without the consent and prior written approval of the University.

Notwithstanding the foregoing, exceptions may be made in special circumstances such as the approved movement of a team leader or principal investigator to another institution.

7.0 HUMAN ETHICS AND HUMAN RESEARCH (GUIDELINES ON OBTAINING ETHICAL APPROVAL)

Human research is research conducted with or about people, or their data or tissues, with the sole intention to do good. Human health and other related researches involving humans are characterized by scientific and social value. This means that the prospects of generating knowledge and the means necessary to protect and promote people's health are interdependent. It surmises that research activities are

carried out in ways that uphold human rights, respect and dignity and are fair to study participants and the communities in which the research is conducted. Ethical standards promote the values that are essential to collaborative work such as trust, accountability, mutual respect and fairness. Furthermore, ethical norms in research help to build public trust and support for research. It is notable that ethical lapses in research can significantly cause harm to humans, animals and the public.

The Ethics for Human Research of the Federal University of Technology Owerri (FUTO) is consistent with ethical principles articulated in World Health Organisation's Standards and Operational Guidance for Ethics Review of Health-related Research with Human Participants (WHO, 2011) and the International Guidelines for Health-related Research Involving Humans of the Council for International Organizations of Medical Sciences (CIOMS, 2016).

7.1 Framework for Conduct of Human Research

There shall be a University Research Ethics Committee (UREC), for the purpose of ensuring compliance with the above regulations as follows:

7.1.1 Composition of University Research Ethics Committee (UREC)

The composition of University Research Ethics Committee shall follow the listed criteria:

- i. The membership of UREC shall be multi-disciplinary and multi-sectoral.
- ii. Its composition shall be gender-balanced and reflect the social and cultural diversity of the communities from which research participants are most likely to be drawn.
- iii. It shall include individuals with backgrounds relevant to the areas of research the committee is most likely to review.
- iv. In addition, membership shall include individuals with expertise in behavioural or social sciences, health care

providers; legal matters and/or ethics and lay people whose primary role shall be to share their insights about the communities from which participants are likely to be drawn.

- v. The Committee shall be large enough to ensure that multiple perspectives are brought into the discussion.
- vi. The quorum requirements shall provide that at least five people are present to make decisions about the research proposal.
- vii. During meetings, members shall engage in discussions to elicit concerns and opinions related to the protocols and associated documents under review.
- viii. Decisions shall be arrived at through a vote or consensus.

7.2 Ethical Basis for Decision-making of a Research Protocol

The key criteria in determining the ethical acceptability of a research protocol shall include but are not limited to the following:

- i. **The research must have social and scientific values:** Social value refers to the importance of the research to public health, being able to solve a health issue. Scientific value on the other hand refers to ability of the study to produce reliable, valid information using the stated objectives. In this respect too, research participants and communities are not exposed to risks of harm.
- ii. **Qualification of research personnel:** Those to carry out the research especially the Principal Investigators (PIs) must have the necessary qualification and experience to carry out the research with competence and integrity.
- iii. **Protection of participants:** The researchers must protect the integrity of the participants; ensure that they are not harmed by either unnecessary exposure to the public or to the materials used in the research. They must maintain their confidentiality. Researchers must be guided by competent supervisors who are well informed and educated in that area of research. Supervisors should also protect their supervisees from any possible harm arising from the research.

- iv. **Informed Consent:** All participation in the research must be voluntary and participants must be well educated and given adequate information about the research which will help them take decision to participate or not in the research. This must be free, not forced and documented because it places a legal obligation on the researchers. Decisions for children or adults who lack the mental capacity to provide informed consent should be made by an authorized surrogate decision maker. Participants who are not educated may thumb print to indicate acceptance. Informed consent should be oral or written.
- v. **No coercion or conflict of interest:** Coercion or conflict of interest does not only entail financial interest but also interpretation and presentation of results, as well as direct participation in the research. Sponsor's interest should not be allowed to override the integrity of the research output.
- vi. **The right to withdraw:** There should be no obligation on participants to continue in the research against their will. Whenever, any participant wants to withdraw, the individual should be allowed to do so without any coercion
- vii. **Anonymity and confidentiality:** Participant's integrity should be respected particularly vulnerable groups. No part of the information or data collected from them should be disclosed without their consent where it cannot be avoided.
- Viii. **Appropriate exclusion and inclusion criteria:** For any research to be approved by the UERC, the researchers must spell out exclusion and inclusion criteria. For example, if it involves women of child bearing age, being pregnant must be an exclusion criterion where the process may endanger the life of the baby or the mother in any way at whatsoever.
- ix. **Monitoring and Supervision:** Researchers must be monitored and supervised particularly student researchers to ensure their

- Safety and adherence to the approved protocol.
- x. **Benefits and Risks:** The participants' potential benefits and risks of research studies must be evaluated in consultation with the communities where the research will take place. Researchers need to spell out additional benefits to the communities, like creating amenities like water, electricity, etc. In addition, research activities must be stopped or modified where the danger outweighs benefits both to individual participants and even to communities.
- xi. **Community participation:** Researchers should actively engage with communities in decision-making about the design and conduct of research (including the informed consent process), while being sensitive to and respecting the communities' cultural, traditional and religious practices. Relevance of the community, risks and benefits must be explained. Additionally, the community will have to provide advisory committee members and state any conflict of interest clearly to the UERC before approval.

7.3 Responsibilities of the Researcher

The researcher shall fulfill the following criteria in the conduct of ethical research namely:

- i. Submission of application or review of the ethics of a proposed health-related research by the individual qualified to undertake the study.
- ii. Submission of student application under the responsibility of the supervisor or a qualified staff advisor involved in the oversight of the student's work.
- iii. Conduct of the research in strict compliance with the protocol approved by the REC without any deviations or changes made to the approved protocol.
- iv. Researcher must report all serious, unexpected adverse events related to the study or unanticipated problems involving risk of harm to participants for necessary amendments and implementation.

- v. Researchers have the responsibility to keep the research participants and their communities informed of the progress of the work including completion of the research project and the results of the study.

7.4 Documents required for review

All documents required for a thorough and complete review of the proposed research project should be submitted by the applicant. This may include but not limited to:

- i. Signed and dated application form.
- ii. Curriculum vitae of the principal investigator.
- iii. A detailed proposal of the research including project summary/synopsis, background information on previous research in the same area/subject, detailed description of the recruitment process and strategies etc.
- iv. A description of the process that will be used to obtain informed consent.
- v. A description of measures that will be taken to ensure the protection of participant's privacy and the confidentiality of data.
- vi. A statement describing any remuneration or other goods or services to be provided to study participants, including reimbursement of expenses etc.
- vii. A description of arrangements for insurance cover for research participants, if applicable.
- viii. Disclosure of all previous decisions (including those leading to negative decision or modified proposal) by other RECs for the proposed study, if applicable.
- ix. A statement that the researcher(s) agree to comply with ethical principles contained in relevant guidelines.

7.5 Guidelines for Ethical Clearance [Summarized Check-List]

An institutional ethical clearance is required prior to approval of any research involving human subject in both the biomedical sciences and other disciplines. This also includes studies, for example, that involve the use of an administered questionnaire or where human biological sample is to be used. The ethical clearance must be approved by the

University Research Ethics Committee (UREC).

Below is a check-list of different aspects in the design of a scientifically sound research proposal that could produce ethical constraints to the project. This is a long list and not all may apply to a proposed study. Conversely, there may be additional issues. It is important to note that, should the objectives or methodology of a proposed study change significantly, a new ethical clearance may be required.

Summarized Check-List Protocol	Informed Consent
type of study	Consent form (must be included)
Justification for study	confidentiality
Study relevance to community	Voluntariness
Literature review	Right to withdraw
PI's qualification	Local language
Confidentiality	Children/elderly
Study Population	Vulnerable patients
Sample size determination	Coma patients
Enrolment procedure	Describes aims/methods
Exclusion/inclusion criteria	Benefits/risks explained
Informed consent	Adverse effects
vulnerable groups	Compensation/gifts
Women/pregnancy	Children
	Safety/Treatment
	Standard of drugs/vaccines
	Good clinical practices (GCP)
	Standard of drugs/vaccines
	Good clinical practices (GCP)
	Treatment regimen
Data and Data Collection	Drug regulatory approval
Data management	Discontinuation criteria
Data analysis	Follow-up of participants
Data ownership	Supervision of students
Confidentiality	
Notification of results	Laboratory Practices
	Good laboratory practices (GLP)
Community Participation	Biosafety
Relevance to community	Biotechnological risks
Benefits/risks explained	Transmissions of pathogens
Conflict of interest explained	

8.0 POLICY ON THE USE OF ANIMALS IN TEACHING AND RESEARCH

The use of animals for teaching and research in the Federal University of Technology, Owerri is important in the quest to understand and advance knowledge in science, technology and health, improve productivity in food animals and ensure sustainability of critical animal species in our environment. Several categories of animals are used in the University for teaching and research; they include laboratory animals, farm animals, wild animals, companion animals etc.

The use of animals in research shall comply with the relevant international standards and guidelines enunciated by the Institute for Laboratory Animal Research (ILAR), World Organisation for Animal Health (OIE), Federation of Animal Science Societies (FASS), World Health Organisation (WHO) and the Food and Agriculture Organisation (FAO) etc.

8.1 Framework For the Use Of Animals In Teaching and Research

The use of all categories of animals for teaching and research in the University therefore, is guided by established national and international ethical frameworks such that;

- (i) the use of animals for research shall be solely for the purpose of advancing knowledge, skills, productivity and sustainable existence of humans and animals in the environment.
- (ii) the likely benefits of the use of animals for research shall be more than the likely harm to the animals and humans.
- (iii) the use of animals for research shall only be contemplated when there is a clear evidence that the result sought cannot be achieved with any other known alternative method.
- (iv) the animals designated for use in research shall be legally acquired and managed in accordance with relevant Federal, State and local laws prevalent at the time and location.
- (v) the welfare of the animal shall be accorded top priority and in this regard, pain, distress and discomfort to the animals shall be minimised and maintained at tolerable levels.

- (vi) the animals, be it laboratory, farm, companion and wild used in research shall be kept in a secure and clean environment with proper housing, feeding and care recommended for its category,
- (vii) In the event that the research requires death of the animal, the most painless means shall be employed.
- (viii) Research with animals involving students shall be conducted under the strict supervision of at least one experienced professional who shall also be a researcher.
- (ix) Animals used in teaching and research may be disposed by loan, sale, transfer, adoption or euthanized according to extant regulations.
- (x) Disposal of teaching and research animals shall be undertaken such that only experimentally naïve animals or those used in non-invasive or minimally invasive research/teaching may be sold for research, teaching, or testing.

8.2 Composition Of The University Animal Care And Use Sub-Committee (UACUC)

The Federal University of Technology Owerri is committed to ensuring that staff and students involved in animal-based research treat animals with respect and consideration. The researchers are expected to take keen interest in the welfare of animals in their care, and to ensure that every aspect of their study comply with the highest ethical standards. There shall therefore, be in operation a University Animal Care and Use Committee (UACUC).

This Committee shall:

- i. ensure the maintenance of a rigorous and objective process of ethical review that challenges researchers to justify the use of animals, and maximise animal welfare.
- ii. be responsible for the review of all applications for studies involving animals to ensure that ethical and welfare standards are met as regards research facilities, veterinary care, animal welfare, etc.

The composition of the UACUC shall reflect the following:

Chairman: This shall be a Senior Academic staff with cognate

experience in research involving animals.

Scientist: One practicing scientist experienced in research involving animals shall be a member of the UACUC

Non-scientists: These members shall represent other professional interests other than the core sciences.

Non-affiliated member(s): This member(s) shall represent the general community interest and shall not have any affiliation with researchers, their family or Federal University of Technology Owerri.

8.3 Responsibilities of The Researcher

The researcher shall fulfill the following criteria in the conduct of ethical research namely:

- i. Submission of application or review of the ethics of a proposed research involving animals by the individual qualified to undertake the study.
- ii. Submission of student application under the responsibility of the supervisor involved in the oversight of the student's work.
- iii. Conduct of the research in strict compliance with the protocol approved by the UACUC without any deviations or changes made to the approved protocol.
- iv. Researcher must report all serious, unexpected adverse events related to the study or unanticipated problems involving risk of harm to animals or the environment for necessary amendments and implementation.
- v. Researchers have the responsibility to keep the UACUC informed of the progress of the work including completion of the study and the results of the study.

8.4 Documents Required For Review

All documents required for review of the proposed study should be submitted by the applicant. This may include but not limited to:

- i. Signed and dated application form.
- ii. Curriculum vitae of the principal investigator.
- iii. A detailed proposal of the research including synopsis, background information on previous research in the same area/subject detailed description of animals and test protocol, mode of acquisition and disposal strategies etc.

- iv. A description of measures that will be taken to protect animal health welfare and other considerations.
- v. A statement that the researcher(s) agree to comply with ethical principles contained in relevant guidelines.

8.5 Guidelines For Ethical Clearance In Animal Research

An institutional ethical clearance is required prior to approval of any research involving animals. The ethical clearance must be approved by the University Animal Care and Use Committee (UACUC).

Below is a check-list of different aspects in the design of a scientifically sound research proposal using animals that could produce ethical constraints to the project. It is important to note that, should the objectives or methodology of a proposed study change significantly, a new ethical clearance may be required.

Summarized Check-List Protocol	Safety/Treatment
Type of study	Standard of drugs/vaccines
Justification for study	Treatment regime
Study relevance to community	Drug regulatory approval
Literature review	Discontinuation criteria
PI's qualification	Proper housing
Benefits/risks	Laboratory Practices
	Good laboratory practices
Animal Study Population	biosafety
Sample size determination	Biotechnological risks
Selection procedure	Transmission of microorganisms
Exclusion/inclusion criteria	
Safety/Treatment	Data and Data Collection
Standard of drugs/vaccines	Data coding
Good clinical practices (GCP)	Data management
Treatment regimen	Data analysis
Drug regulatory approval	Data ownership
Discontinuation criteria	Notification of results
Supervision of students	

9.0 COPYRIGHT WORKS AND INTELLECTUAL PROPERTIES, COMMUNICATION AND EXPLOITATION

The University in conjunction with the relevant Federal Government Authorities on Copyright will encourage the preparation and publication of copyright works that result from teaching, research, scholarly and technological breakthrough by staff and students.

9.1 Possession/Ownership of Copyright Works

All copyrighted works, including software, electronic course materials and any other electronic media, course modules or course design products belong to the University. However;

- i. A work created as part of the duties of a researcher, using substantial assistance including grant from the University shall be jointly owned by the researcher and the University;
- ii. A work created independent of the duties of a researcher and without any assistance from the University shall be owned entirely by the researcher;
- iii. A work created as part of the duties of the researcher, and with substantial assistance from the University shall be owned by the University. No exception to the terms of this policy shall be valid unless agreed to in advance in writing by the Vice-Chancellor.

9.2 Ownership of Intellectual Property

The University shall own any Intellectual Property that is made, conceptualized, discovered or created by a member of staff, students, visiting scholars or any person or persons engaged in any form of research, using resources of the University in the course of performing the responsibilities of their employment or engagement in connection with the development of such Intellectual Property; such resources include:

- i. Office laboratory space and equipment
- ii. Computer hardware, software and support
- iii. Secretarial services
- iv. Research, teaching and laboratory assistance
- v. Supplies and utilities
- vi. Funding of research
- vii. University time

The use of library facilities and other facilities made available to the general public shall not be considered as “significant use” of Universities resources and equipment.

9.3 Ownership of Intellectual Property by External Research Sponsors

The University shall own all Intellectual Property Rights (IPR) made, discovered or created in the course of research funded by external sponsors, unless otherwise provided by written agreement between the University and the external sponsors. Where an external sponsor specified a technical problem to be solved by the research at the University and a totally different and unrelated IP in addition to solving the sponsor's problem is developed, then the “accidental” IP shall belong to the University.

Where the University is involved in collaborative research with another institution or business entity, the IPR arising therefore, shall be co-owned and the distribution of royalties will be governed by contractual agreement between the parties,. Both institutions shall contribute equally of hitherto agreed proportion towards expenses related to acquiring IPR and licensing.

9.4 Ownership by Individual Creators of Intellectual Property

IPs for which an individual creator can prove that they did not use University resources shall belong to the creator. The University will not take the responsibility for IP information disclosed or used at the University by a former employee of another institution in collaborative work or related research with the University without the consent of the other institution.

If within a period of one year, an otherwise member of the University who ceases to become a member of the University comes up with an IP, such IP shall be deemed to belong to the University unless there is clear proof that the invention was fully carried out without utilization of University resources and time as per the time the person was a member. The burden of proof shall be on the person.

If the University does not exploit an IP within five years after the grant of Intellectual Property Rights, the University may reassign ownership to the IP creator upon request. Should the University not express an interest to pursue IP protection for any reason or reasons, the University will in writing assign to the IP creator the right to the IP.

9.5 Ownership of Publications, Thesis and Dissertations

Students' theses and dissertations are considered “Exemplar Scholarly Works”. Therefore the students will own the copyright, subject to a royalty-free license to the University to reproduce and publish for the purpose of training and research in the University. The University shall protect the right to Schools, Departments, staff and students to publish the results of their work after ensuring that applicable preliminary application of Intellectual Property Right has been undertaken. For a publication arising from contract research, the University shall be allowed to publish unless otherwise stated in the contract.

9.6 Equipment Ownership

Equipment purchased on externally funded research shall remain the property of the University upon completion of the contract. The equipment will be under the custody of the Department involved in the research. Where more than one Department is involved, the Vice-Chancellor or his/her designate shall determine the distribution and/or custodian of the equipment.

9.7 Net Benefits and Share Arrangements

Subject to any agreements with external collaborators, net benefits are the remainder of all license fees, royalties and any other monies received by the University from exploitation of the invention after deduction of the following:

- i. Tax
- ii. Cost of authorized travel outside the state in connection with the invention
- iii. Costs of raw materials and production
- iv. Costs of development

- v. The University's expenses of applying for and obtaining protection of invention
- vi. University's expenses associated with renewing and maintaining such protection.
- vii. University's expenses of resisting and petitions or applications for revocation of such protection and bringing proceedings for infringement of such protection including fees paid and payable in respect of legal and other matters.
- viii. University's expenses on external lawyers used to set up agreement with external collaborations.

9.7.1 Payments

The University shall pay to the inventors at least twice a year a proportion of the Net Benefits on the following scale:

Table 1: Distribution of Intellectual Property Net Revenue

Revenue Distribution	Originator of Intellectual Property	Sponsor(s)	Originator of IP's Dept	Originator of IP's School	University Research Fund
Sponsor Supported	30%	40%	5%	5%	20%
University Assigned	30%		5%	5%	60%
University Assisted	60%		5%	5%	30%
Individual Effort	75%		5%	5%	15%

The originator's share of the net revenue shall be divided (equally) among joint originators of jointly developed IP prior to the first distribution of shared net revenue. The percentage for the originator's Department and School shall apply only while the originator is employed by, and conducting research at the University.

An Intellectual Property is considered

- (a) **Sponsor Supported if;**
 - i. External person(s) or body(ies) other than the University fully funded the research.
 - ii. External person(s) or body(ies) other than the University fully

funded the commercialization of the intellectual property.

- (b) **University Assigned if;**
 - i. Intellectual property was obtained from a University initiated and fully funded research work.
 - ii. The University fully funded the commercialization of the intellectual property.
- (c) **University Assisted if;**
 - i. Intellectual property was obtained from research work initiated by staff and funding assistance given by the University.
 - ii. The University assisted in the funding of the research and commercialization or commercialization of the intellectual property.
- (d) **Individual Effort if;**
 - i. Intellectual property was obtained from research work initiated and funded by staff.
 - ii. The University was neither involved in the funding of the research nor commercialization of the intellectual property.
 - iii. The staff may or may not have used any University facility as defined in Section 9.2 except for item vi.

9.8 Commercialization and Exploitation of Intellectual Property (IP)

The University may allow the IP creators to commercially exploit their IP on condition that the University will retain ownership of the IP but shall give license to the IP creators who will then pay royalties to the University. Such offer shall be subject to competitive bidding with the active participation of the University and the general public.

9.9 Revenue Distribution for Commercialized IP

Gross income shall be understood as funds obtained from commercialization of an IP of the University. Net income shall be understood as gross income less The EHSC Policy of the Federal University of Technology, Owerri shall cover the following scope of research: Pollution Control, Waste Management, Occupational Health and Safety, Environmental Epidemiology, Environmental Toxicology, Chemical Safety, Fire and Road Safety, Pest and Vector Control, Biosecurity, Radiation Health and Control, Environmental Management

and Control, Equipment Safety, Ergonomics, Environmental Justice, Environmental and Health Impact Assessment and Audit, Food Hygiene and Safety Assurance, Medical Waste Management, Arbovirus, Occupation and Environmental Pathology, Children and Environmental Health, etc.

Compliance to the environmental health and safety policy of the Federal University of Technology, Owerri (FUTO), it shall be a common responsibility of the UEHSMC to set standards on Environmental emergencies, and to provide specific requirements towards ensuring health and safety, as well as the prevention of hazards associated with chemical, biological, radiological, noise and waste (solids, liquid and gaseous) pollutions etc.

10.1 UEHC Principles, Responsibilities and Practices

The Federal University of Technology, Owerri, will ensure the following:

- i. Provision of safe academic, research and administrative workplace for staff and students;
- ii. Protection of the health and safety of staff and students of the University;
- iii. Identification of health and safety hazards and their corrective and mitigation measures;
- iv. Dissemination of information on health and safety hazards to the University community;
- v. Provision of channel of communication in reporting hazards and accident cases;
- vi. Provision of information to the neighbouring communities of the University on health and safety issues emanating from the University, in compliance with other regulatory agencies (such as NEMA, NESREA, Environmental Health Authorities etc) in accordance with Extant Laws.

10.2 The University Environmental Health and Safety Monitoring Committee (UEHSMC) shall:

- i. be responsible for recommending University-wide health and safety policies and practices related to man and the environment;

- ii. ensure overall institutional compliance with relevant safety and health policies, practices, statutes and regulations;
- iii. provide central health and safety services to all stakeholders of the University;
- iv. monitor the effectiveness of safety agencies in the implementation of health and safety policies and practices.

10.3 Emergency Response and Preparedness

The University Environmental Health and Safety Monitoring Committee (UEHSMC) shall provide guidelines for emergency response plans. Every building shall have individual emergency response plans to include evacuation and assembly procedures, posted evacuation maps, reporting and communication lines, as well as training and drills. Exits shall remain free of obstructions and materials that could render the exit difficult, hazardous, or impossible.

10.4 Chemical Hazards

The University Environmental Management Committee (UEMC) shall liaise with academic Departments and Units to develop local programmes for the safe use of chemicals, to include:

- i. Control of exposures to hazardous chemicals in laboratories;
- ii. Information dissemination and training of employees and students on chemical hazards when they start work, when their work change, or when a new hazard is introduced into the laboratory.
- iii. A programme of medical surveillance for members of staff and students who are exposed to certain hazardous chemicals, as defined by convention and,
- iv. Chemical waste management reference guide and laboratory clean-out guidelines for chemical reagents.

10.5 Radiological Hazards

In the Federal University of Technology, Owerri, the following shall apply;

- i. The University Environmental Management Committee (UEMC), in liaison with the Central Instruments and Equipment Centre shall be responsible for the registration of all machines which

- produce ionizing radiations for which national registration is required. They are also to authorize the possession and use of radioisotopes under a radioactive materials license from the Ministry of Science and Technology or any other relevant government agency.
- ii. UEMC shall review and approve uses of radioactive materials and radiation-producing machines, and recommend radiation policies to the Vice-Chancellor.
 - iii. All regulated radiation activities at the Federal University of Technology, Owerri, will be open to inspection by UEMC to enable the monitoring of compliance with regulations, license conditions, and policies related to the utilization of radiation.

10.6 Policy on Ionizing Radiation

Ionizing radiation is a form of radiation that has sufficient energy to cause ionization of matter, including x-rays, gamma rays, alpha particles, beta particles, and neutrons. Exposure of biological tissues to any of these ionizing radiations in sufficient energy amounts can result in damage to either the cells or the Deoxyribonucleic Acid (DNA).

The policy on ionization radiation of the Federal University of Technology, Owerri, is for the safety of staff, students and visitors of the University who might be exposed to sources of ionizing radiation. This policy seeks to explain how the ionizing radiation is being managed within the University.

The UEMC shall regulate:

- i. Use of electrical radiological equipment for the purpose of research and radiology;
- ii. Use of accelerators (except electron microscope) and,
- iii. Use of radioactive sources and nuclear materials;

10.7 Biological Hazards

The bio-safety policy and procedures shall govern the use of hazardous biological agents in research or instruction at the Federal University of Technology, Owerri. The policy shall apply to research projects and teaching programmes in the University which employ:

- i. recombination DNA that may be hazardous to humans or other life forms;
- ii. potentially oncogenic biological materials;
- iii. infectious biological materials;
- iv. human and simian cell cultures and body fluids;
- v. biological toxins and venoms;
- vi. transgenic materials which may be hazardous to humans, animals and plants; and all research involving biological materials and plants; and all research involving biological materials will be registered with the EMC;
- vii. activities involving Genetically Modified Organisms (GMO);
- viii. activities involving genetically modified plants and/or micro-organisms.

11.0 CLIMATE CHANGE

The Federal University of Technology, Owerri is committed to the transition to a low-carbon and climate-secure world. Consequently, the University shall ensure that research, conducted in the University by staff and collaborating partners, take cognizance of the challenges of climate change. Research activities shall be carried out within the framework that allows for low emission of Greenhouse gasses (GHG). To this end:

- i. The University shall encourage the efficient use of energy and energy-efficient equipment in addition to the conservation of renewable energy sources.
- ii. Where applicable, a researcher shall be required to clearly state the impact of methods in a proposed study on GHG emissions. Such declaration shall be verified by the University Research Committee.
- iii. Modification or non-use of the methods in question by researcher(s) shall be required in the event of a confirmed possibility of adverse GHG emissions.
- iv. Only methodologies that will not enhance GHG emissions shall be approved by the University Research Committee.

12.0 CODE OF CONDUCT FOR RESPONSIBLE RESEARCH, RESEARCH MISCONDUCT AND MANAGEMENT INCLUDING SANCTIONS

12.1 Collaborative Research

Collaborative research among institutions is pivotal for the deepening of scholarship. An agreement in writing is necessary for any joint project involving FUTO and other institutions. Such agreement should clearly address cost sharing, sharing of commercial returns, ethics and safety, intellectual property, confidentiality, copyright and management of research materials and equipment at the termination of the research. FUTO and the collaborating institutions shall also identify a person to coordinate the research project.

12.2 Responsibility of the University

In order to realize the mandate of FUTO with respect to research and training, the University will endeavour to ensure that a conducive environment exists for research and training. The University already has policies in place to govern area of research. Accordingly:

- i. FUTO shall ensure that all staff and students have access to all policies governing research.
- ii. FUTO shall enforce every code of practice during the course of research in order to ensure the safety of all those involved in research, and the environment; and
- iii. Through already laid out mechanisms, FUTO will ensure proper supervision of graduate student research by competent staff.

12.3 Responsibility of Researcher

It is the responsibility of the researcher to maintain high standards in the course of research taking into cognizance the provisions of FUTO policies that relate to the conduct of research. It is important that the researcher(s);

- i. Must endeavor to understand the provisions in all of the University's policies with respect to research;
- ii. Should ensure that publications conform with the Anti-Plagiarism Policy of FUTO.
- iii. Should be committed to probity and honesty in the conduct and

- supervision of research;
- iv. Should ensure safety and maintain ethical standards by ensuring that all appropriate policies related to the research are followed;
- v. Must provide guidance and mentorship for students in every area of research;
- vi. Should ensure that students are aware of the ethical standards relevant to their work. Supervisors should ensure that the work submitted by students is the students' own and that data have been validly obtained;
- vii. Must ensure the full attribution and acknowledgement of the work of others in publications
- viii. Should participate only in work which conforms to agreed ethical standards and which they are competent to perform;
- ix. Must observe full confidentiality with regards to data or material of confidential nature; and
- x. Without the consent of the source, must ensure no-diversion of research data or material from research for personal use or to a third party for profit.

12.4 Publication and Authorship

Research outputs are usually published in books, journals, conference proceedings, bulletins, and reports. Consequently, authorship is an evidence of a researcher's productivity. Attribution of authorship should therefore meet verifiable and quantifiable criteria.

- i. Publication should be derived from original data or idea generated in the course of research;
- ii. Every contribution to the development and production of a research publication should be recognized and acknowledged;
- iii. The affiliation of a staff to the University must be clearly stated in every publication presented for assessment in the University;
- iv. Authorship of a publication is conferred when a person's contribution with respect to conception and design of the research, analysis and interpretation of data are substantial;
- v. A student whose research results (leading to the award of any degree) from a substantial part of a publication should be one of the authors of such publication;
- vi. Every publication emanating from a student's research leading to

- the award of a degree must include the supervisors of the students as authors;
- vii. Where there are more than one author, the principal author shall ensure that all authors take responsibility for the information conveyed in the publication;
- viii. Position of authority or close relationship shall not be basis for authorship;
- ix. A individual whose contribution is not enough to be included as author (for instance participation in fund raising, technical assistance, and data collection) should be acknowledged;
- x. Provision of facilities by individuals and organizations should be acknowledged; and
- xi. Every financial support for research should be disclosed and acknowledged in research publications.

12.5 Data Management

Research data include all records generated in the course of a research which were employed in arriving at results and making necessary inferences and conclusions that are related to the purposes of the research. All such records that will enable revalidation of the research results will be retained by FUTO. Where research is governed by an agreement with FUTO, data ownership and all data related issues as specified in the agreement will supersede this policy. Generally, the following shall apply:

- i. All data generated during research shall be stored both electronically and in hardcopies and should be made accessible for any re-evaluation that may arise in the future; and
- ii. Research data should be documented in such ways that will enable revalidation.

12.6 Research Misconduct

Research misconduct is the violation of standards and regulations for ethical behavior in professional scientific research. The violation of standard codes of scholarly and ethical behavior may be intentional or gross negligence.

12.6.1 Types of Research Misconduct

Research misconduct can be in different forms including:

- i. Fabrication is intentionally making up of results and recording or reporting them;
- ii. Falsification is manipulating research materials, equipments, or processes or changing or omitting data or results such that the research is not accurately represented in the research record;
- iii. Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit. It is also the appropriation of another person's work in part or whole as one's own;
- iv. Research grant misappropriation; and
- v. Conferring authorship on colleagues who have not made any substantial contribution to the research project being reported, and incomplete listings of authorships.
- vi. Breach of approved protocol in research involving humans and animals.

Each of these acts violates the integrity of the research process and constitutes a serious breach of accepted ethical standards.

12.6.2 Procedure for Complaints and Sanctions

The Federal University of Technology, Owerri, expects that all staff and students conform to the highest ethical standards in the conduct of research and teaching. Allegations of research ethics violations shall be investigated by a committee appointed by the Vice-Chancellor which, following due process shall investigate the allegations and make recommendations including appropriate sanctions for proven cases to the Vice-Chancellor.

12.6.3 Sanctions

Recommendations to the Vice-Chancellor in cases of proven research misconduct may include disciplinary measures such as:

- a. Warning;
- b. Refund of misused or misapplied monies;
- c. Denial of promotion/demotion;
- d. Termination of appointment or studentship as the case may be;

and
e. Dismissal from service

As detailed in the University regulations.

13.0 ORGANIZED RESEARCH UNITS

Apart from routine research in various academic Departments and Units, Federal University of Technology, Owerri has established the following organized research units.

13.1 Centre for Research, Innovation and Development (CRID)

The Centre for Research, Innovation and Development (CRID) was established in 2012. CRID coordinates research activities in FUTO. The Centre ensures that researchers strictly keep to all University guidelines in the conduct of research. The Centre also ensures that every aspect of the agreement entered into with respect to any research including management of fund and research equipment and materials are adhered to. The affairs of the Centre are administered by a Director who works with Research Associates (all of whom are appointed by the Vice-Chancellor) from different academic disciplines and Departments.

13.2 Institute of Erosion Studies

This Institute of Erosion Studies, earlier founded as a Centre in 1987 concentrates on three major activities: Research, Training and Extension Services. It houses major research programmes in Erosion and Flood Control and provides support facilities for quality training in Environmental Management Programmes. The University has invested resources to rehabilitate the infrastructure, equipment and facilities.

The Institute also provides training, consultancy and general public service in the areas of soil erosion, flood control, soil conservation and environmental degradation that are due to human and natural forces. It seeks to extend the result of such research to communities that are most affected by the degradation and also to various organizations including Federal, State and Local Government parastatals, and public companies that have interest in environmental sustainability.

To improve the relevance of the Institute in contemporary times, arrangements are also on ground to establish linkages with foreign universities, World Bank and Federal Ministry of Environment. Importantly, MSc/PhD programmes are being mounted in two areas: Integrated Watershed Management and Urban Drainage Systems and Management.

Extensive Research works on flood and erosion control are being carried out with the assistance of TETFUND.

13.3 Centre for Agricultural Research and Extension (CARE)

This Centre founded in the 2004/2005 academic session undertakes Research, training and extension services in all areas of agricultural development. It houses six (6) Research Thrusts namely:

- i. Sustainable Agricultural Systems
- ii. Livestock Development System
- iii. Environmental and Biodiversity Conservation
- iv. Product Development, Storage and Marketing
- v. Soil and Water Management
- vi. Gender Empowerment and Rural Development.

The clientele is diverse and includes small holder farmers, community base growers, organized private sectors, multinationals, non-governmental organizations, CBOs, marketers and consumers (who on their own grow, process, and market a wide range of crops and animals for food, fodder, shelter and feed) and agro-industries.

To boost the efforts of the Centre for Agricultural Research and Extension, the University Management has been providing successive grants. Furthermore, the Centre (CARE) has successfully secured a befitting administrative and laboratory building through partnership with an organized private sector. In addition to research findings published in high impact national and international journals, the Centre has some on-going medium and long-term researches aimed at boosting agricultural productivity.

13.4 Centre for Industrial Studies (CIS)

This unique Centre was founded to expose students in their foundation years to workshop practice and other practical engineering drills which are compulsory for all students of FUTO. The Centre is also encouraged to manufacture various small tools and machine parts and to provide technical consultancy services for various industries as may be required, thereby generating some revenue for the University. To reinforce these efforts, the capacity of the Centre has been further enhanced, with the recent commissioning of a functional foundry, and the installation of a number of other key equipments at the Centre.

13.5 Centre for Energy and Power Systems Research (CEPSR)

The Center for Energy and Power Systems Research (CEPSR) started in 2003 as an arm of the Department of Electrical/Electronic Engineering. However, more recently, the centre has been developing rapidly in areas of research and infrastructure.

Research Work in the Centre now cuts across various Departments in the University. The researchers in the Centre are based primarily in School of Engineering and Engineering Technology, School of Science, School of Agriculture and Agricultural Technology and School of Environmental Sciences. The Centre's researchers carry out research work primarily in the fields of:

- i) Solar Thermal Systems
- ii) Photovoltaic Systems
- iii) Hydro-Power Systems
- iv) High Voltage Technology
- v) Biomass/Bio-Fuel Technology

The Centre has hosted both national and international conferences on Renewable & Alternative Energy and National Solar Energy Forum.

13.6 Centre for Continuing Education (CCE)

In pursuit of the objectives of the Federal University of Technology, Owerri, the FUTO Extension Services was established in 1997 with the view of running intensive sandwich and weekend study programmes during the long vacation and other weekends of the year.

The programmes were designed to help professionals in the field to improve on their qualification. Such programmes were designed in such a way that certificates such as Ordinary Diploma (OD), Higher Diploma (HD), Postgraduate Diploma (PGD), Master of Business Administration (MBA) and Master of Technology (M.Tech.) would be awarded to students on graduation.

The FUTO Extension Services (FES) later metamorphosed into the Centre for Continuing Education with its functions re-aligned in accordance with the NUC's directives.

13.7 Public Procurement Research Centre (PPRC)

The Public Procurement Research Center (PPRC), Federal University of Technology, Owerri was established by the Bureau of Public Procurement (BPP) of the Federal Government of Nigeria. The Centre was commissioned on October 8th, 2012 by the United Nations Development Programme Country Representative. The purpose of the Center is to build a world-wide professional community of scholars and practitioners devoted to improving efficiency, fairness and transparency in public procurement. The primary objectives of the Center are to:

- ❖ Establish best practices in Public Procurement through training and research;
- ❖ Nurture the development of undergraduate/postgraduate degree programmes in public procurement and supply chain management in collaboration with international organizations and relevant departments at the Federal University of Technology Owerri.

The Center since 2012 has been running training programs/workshops on various Public Procurement topics in collaboration with BPP. These courses are open to Ministries, Departments and Agencies of Government, Federal Government Institutions, Service Providers, Contractors, Non-Governmental Agencies and all those who are interested in Public Procurement. Facilitators for this programme are drawn majorly from the Bureau of Public Procurement and the University.

In line with the MOU signed with BPP, PPRC, FUTO has recently

commenced a Postgraduate diploma programme in Public Procurement. This is aimed at deepening the knowledge and skills required in the conduct of public procurement processes.

The Center is headed by a Director and other relevant Staff who are poised to make PPRC FUTO, the Center of Excellence in Public Procurement in Africa and beyond.

13.8 University Computer Centre

The University Computer Centre was designed as a central computing facility to support teaching, research, consultancy and administrative activities of all units of the University. The Centre provides computing services and supports other external users. The Centre is provided with the appropriate hardware, software and highly skilled personnel to meet the diverse requirements of the entire University Community. Services provided by the centre include but not limited to e-learning, on-line services, training, continuous laboratory/practical services to undergraduate and postgraduate students, software development and data processing and analysis.

13.9 Centre for Human Resource Development (CHRD)

With the approval by the University Senate on April 29, 2014, the **Centre for Human Resource Development** was established. This decision was informed by the observation that staff and other professionals need regular refresher trainings on the unique nature and changing requirements of their job schedules so as to keep pace with modern trends. There was an obvious need to continually train and retrain the workforce in line with current global trends to make them competitive and globally relevant. The Centre for Human Resource Development was also saddled with the additional responsibility of organizing training programmes for staff of other organizations.

The Centre has the following aims and objectives:

- i. To conduct training for excellence in teaching for both old and new academic staff.
- ii. To conduct training, workshops etc for both old and new non-teaching staff.

- iii. To organize orientation/induction training for staff before redeployment to another section/Unit of the University.
- iv. Any other duties relevant to the goals and objectives of the University.

Additionally, the Centre produces an annual courses/workshops programme encapsulated in a brochure designed to address relevant and topical issues that will enhance the professional skills, knowledge and ethical orientation of professionals in their work places. The Centre, in addition runs a Certificate/Advanced Certificate programmes.

CHRD is headed by a Director who supervises the Centre, and Co-ordinator who handles the day-to-day administration of the Centre with a complement of other administrative, clerical and technical staff.

13.10 Language and Culture Centre

The Centre is expected to bridge the gap between the citizenry and modern technology in language and culture in Nigeria. As a Cultural Centre, it will operate like a performing arts outfit. Thus, it will feature the full spectrum of performing arts, namely Fine and Applied Arts, Music and Theatre. As a Language Centre, the aim was the provision of facilities for the development of adequate vocabulary for indigenous languages to cater for the ideas and technical innovation of the modern world. The Centre was intended to serve as an acculturation centre where students are expected from all parts of the country to gather for a specified period of time for acculturation.

The Centre assists in the rendering of scientific and technical terms in the local languages.

13.11 Centre of Excellence in Sustainable Procurement, Environmental & Social Standards (FUTO CE-sPESS)

FUTO Centre of Excellence in Sustainable Procurement, Environmental & Social Standards (FUTO CE-sPESS) is a project established in 2019 by the National Universities Commission (NUC) in partnership with the World Bank to provide new and innovative training programmes currently not available in higher institutions in Nigeria.

FUTO was one of the six Federal Universities selected for the project, after a very competitive process. The primary objective of FUTO CE-sPESS is to provide innovative and sustainable capacity building and professionalization in sustainable procurement, environmental standards, and social standards to meet the needs of the public and private sectors in the country and the Africa region.

FUTO CE-sPESS programmes are designed to carry out teaching and research in partnership with the public and private sector to meet the demands of the country. The Centre has three programme areas that will eventually evolve to become departments.

- ❖ Procurement Management
- ❖ Environmental Standards
- ❖ Social Standards

13.12 Center for Waste-to-Wealth Research and Development

This Centre was established by the Federal University of Technology, Owerri in 2018 with the objective of managing, recycling and upcycling all kinds of wastes in FUTO, environs and beyond. It is also mandated with carrying out research activities aimed at converting wastes generated within the University into useful products with the long term plan of extension to host communities and the State.

It is of interest that this Center has successfully converted wastes generated in the University community, especially plastic wastes, into useful products like plastic wares, interlocking blocks and energy nuggets and briquettes. Currently, the Centre is involved in ;

- a. processing mixed wastes into energy nuggets named 'Ureure Nuggets' and briquettes for the purpose of energy generation.
- b. Upcycling of all kinds of wastes (Wood, metals, papers etc) into useful products.
- c. Generation of Biogas using wastes.

13.13 Africa Centre Of Excellence In Future Energies And Electrochemical Systems (ACE-FUELS)

The Africa Centre of Excellence in Future Energies and Electrochemical Systems (ACE-FUELS) is a World Bank initiative in collaboration with governments of participating countries to support Higher Education institutions in specializing in Science, Technology, Engineering and Mathematics (STEM), Environment, Agriculture, Applied Social Science/Education and Health. The Project Development Objective (PDO) is to improve the quality, quantity and development impact of postgraduate education in selected universities through regional specialization and collaboration. ACE-FUELS realizes the importance of academia/industry collaboration for education, training and skills development, for innovation and technology transfer through generation, acquisition, and adoption of knowledge, as well as for promoting entrepreneurship/start-ups/spin-offs.

13.14 Centre of Excellence in Local Materials Substitution (CoE-LoMaS)

The Nigeria Content Development and Monitoring Board (NCDMB) established a Center of Excellence in Local Materials Substitution at the Federal University of Technology, Owerri. The objective of the NCDMB in establishing the Centre is to create a suitable environment that will bring together the academia in FUTO and stakeholders in the oil and gas sector with the purpose of locally handling challenges encountered in the oil and gas industry.

The Research Focus Areas for the Centre of Excellence for Local Materials Substitution Studies (CoE-LoMaS) of the Federal University of Technology, Owerri are:

1. Oilfield Chemicals
2. Anticorrosion Technologies
3. Sustainable Materials & Remediation Technologies