



**PEKELILING PENTADBIRAN
BILANGAN 6 TAHUN 2022**

**PINDAAN POLISI PENYELIDIKAN
DI UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

Pejabat Pendaftar
4 Februari 2022 | 2 Rejab 1443H

Disalinkan kepada:

Naib Canselor
Timbalan Naib Canselor (Akademik dan Antarabangsa)
Timbalan Naib Canselor (Penyelidikan dan Inovasi)
Timbalan Naib Canselor (Hal Ehwal Pelajar)
Penolong Naib Canselor (Jaringan Industri dan Masyarakat)
Penolong Naib Canselor (Pembangunan dan Pengurusan Fasiliti)
Pegawai-Pegawai Kanan
YDP Majlis Perwakilan Pelajar

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

UTEM100-1/3/1(90)

4 FEBRUARI 2022
2 REJAB 1443H

PEKELILING PENTADBIRAN BIL. 6/2022

PINDAAN POLISI PENYELIDIKAN DI UNIVERSITI TEKNIKAL MALAYSIA MELAKA

1.0 TUJUAN

- 1.1 Pekeliling Pentadbiran ini dikeluarkan bertujuan untuk memaklumkan kepada pengetahuan semua staf Universiti Teknikal Malaysia Melaka (UTeM) mengenai Pindaan Polisi Penyelidikan di Universiti Teknikal Malaysia Melaka yang telah mendapat kelulusan Mesyuarat Lembaga Pengarah Universiti Bil. 6/2021 pada 22 Disember 2021.

2.0 LATAR BELAKANG

- 2.1 Polisi Penyelidikan UTeM pertama kali dimaklumkan kepada staf melalui Pekeliling Pentadbiran Bilangan 9 Tahun 2021 setelah diluluskan oleh Mesyuarat Lembaga Pengarah Universiti Bilangan 5 Tahun 2020 bertarikh 16 Disember 2020.
- 2.2 Pindaan kepada polisi ini dilaksanakan untuk menambahbaik berkenaan maklumat ekosistem penyelidikan di UTeM selaras dengan *Seven Strategic Goals* UTeM 2021-2025 dan menerapkan elemen konsep T.U.N.A.I. (*Technology @ University Advancing Industry and Society*) di samping mengambil kira dasar terkini peringkat nasional dan global.
- 2.3 Pindaan juga dibuat dengan mengemaskini maklumat entiti penyelidikan di dalam polisi penyelidikan dengan mengambil kira perubahan struktur organisasi di Pejabat Timbalan Naib Canselor (Penyelidikan & Inovasi), Pusat Pengurusan Penyelidikan & Inovasi dan Pusat Pengkomersilan UTeM serta penambahan maklumat berkenaan sistem sokongan kepada ekosistem penyelidikan di UTeM.

3.0 PELAKSANAAN

Polisi Penyelidikan UTeM yang dimaklumkan di Pekeliling Pentadbiran Bilangan 9 Tahun 2021 telah dikemaskini berdasarkan pindaan yang diluluskan dan Polisi Penyelidikan UTeM terkini dan perlu dirujuk seperti di Lampiran 1.

4.0 TARIKH KUAT KUASA

Pekeliling Pentadbiran ini berkuat kuasa mulai 1 Januari 2022.

Sekian, terima kasih.

"WAWASAN KEMAKMURAN BERSAMA 2030"

"BERKHIDMAT UNTUK NEGARA"

"KOMPETENSI TERAS KEGEMILANGAN"

Saya yang menjalankan amanah,



MASDZARIF BIN MAHAT
Ketua Pegawai Operasi
Universiti Teknikal Malaysia Melaka

RESEARCH POLICY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

ABBREVIATION

AMCT	Advanced Manufacturing and Computing Technology
CoE	Centre of Excellence
CRIM	Centre for Research and Innovation Management
DVCRI	Deputy Vice Chancellor (Research & Innovation)
GPPP	Research Management Guidelines <i>Garis Panduan Pengurusan Penyelidikan</i>
HICoE	Higher Institution Centre of Excellence
ICT	Information and Communication Technology
IPR	Intellectual Property Right
JKTSPi	Senate Standing Committee on Research and Innovation <i>Jawatankuasa Tetap Senat Penyelidikan dan Inovasi</i>
KPKA	Office of Occupational Safety and Environmental Sustainability <i>Pejabat Kesihatan Pekerja dan Kelestarian Alam Sekitar</i>
MoA	Memorandum of Agreement
MOHE	Ministry of Higher Education
MoU	Memorandum of Understanding
MyRA	Malaysia Research Assessment
PLH	Laman Hikmah Library <i>Perpustakaan Laman Hikmah</i>
PNC-JIM	Office of Assistant Vice Chancellor - Industry and Community <i>Pejabat Penolong Naib Canselor – Industri dan Komuniti</i>
Policy	UTeM Research Policy
PPPK	Knowledge and Communication Services Centre <i>Pusat Perkhidmatan Pengetahuan dan Komunikasi</i>
PPS	Centre for Graduate Studies <i>Pusat Pengajian Siswazah</i>
PPSKR	Centre for Strategic, Quality and Risk Management <i>Pusat Pengurusan Strategik, Kualiti dan Risiko</i>
PTj	<i>Pusat Tanggungjawab</i>
RG	Research Group
R&I	Research and Innovation
UCC	UTeM Commercialization Centre
URIS	UTeM Research Information System
VC	Vice Chancellor
UTeM	Universiti Teknikal Malaysia Melaka

INTERPRETATION

In this Policy except to the extent that the context otherwise requires:

- (a) words denoting the singular shall include the plural and vice versa;
- (b) words denoting individuals shall include corporation and vice versa;
- (c) headings are for convenience only and shall not affect the interpretation hereof; and
- (d) references to Clauses, Appendices, Annexure and Schedules are reference to Clauses, Appendices, Annexure and Schedules of this Policy.

TABLE OF CONTENT

1.0 INTRODUCTION

2.0 VISION AND MISSION

3.0 ECOSYSTEM

3.1 Research and Innovation Ecosystem

3.2 Thrust of Research Policy

4.0 GOVERNANCE

4.1 Senate

4.2 Research and Innovation Senate Standing Committee (JKTSPI)

4.3 Research Management Centre (CRIM)

4.4 UTeM Commercialization Centre (UCC)

4.1 Intellectual Property Technical Evaluation Committee

4.2 Intellectual Property and Commercialization Committee

4.5 Advanced Manufacturing Centre (AMC)

4.6 Research Committee

4.7 Centre of Excellence (CoE)

4.8 Journals and Conferences Unit

4.9 Edu-Tourism Unit

4.10 Other Support Systems

5.0 RESEARCH AND INNOVATION STRATEGY

5.1 Strategic Initiatives

5.2 Research Excellence Initiative

5.3 Research Funding

6.0 TALENT MANAGEMENT AND STRATEGIC PARTNERSHIP

- 6.1 Multidisciplinary Research
- 6.2 Acculturation of Research and Innovation
- 6.3 Establishment of Research Group
- 6.4 Sharing of Research and Innovation Facilities and Infrastructures
- 6.5 Strategic Partnership

7.0 ACHIEVEMENT AND RECOGNITION

- 7.1 Output
- 7.2 Recognition
- 7.3 Intellectual Property Right (IPR)

8.0 RESEARCH ETHICS

- 8.1 Code of Ethics
- 8.2 Responsibilities
- 8.3 Ethics in Data Collection
- 8.4 UTeM Obligation towards Intellectual Property Right (IPR)
- 8.5 Ethics in Publication
- 8.6 Misconduct of Research
- 8.7 Health and Safety

9.0 MISCELLANEOUS

REFERENCES

- APPENDIX 1 RESEARCH AND INNOVATION GOVERNANCE STRUCTURE
- APPENDIX 2 TERMS OF REFERENCE OF THE JKTSPI COMMITTEE
- APPENDIX 3 TERMS OF REFERENCE OF THE RESEARCH AND INNOVATION COMMITTEE
- APPENDIX 4 TERMS OF REFERENCE OF THE INTELLECTUAL PROPERTY TECHNICAL EVALUATION COMMITTEE
- APPENDIX 5 TERMS OF REFERENCE OF THE INTELLECTUAL PROPERTY AND COMMERCIALISATION COMMITTEE
- APPENDIX 6 TERMS OF REFERENCE OF THE RESEARCH ETHICS COMMITTEE
- APPENDIX 7 LIST OF DOCUMENTS FOR RESEARCH AND INNOVATION ECOSYSTEM

1.0 INTRODUCTION

This Policy serves as the main reference for R&I practices by embedding the concept of T.U.N.A.I or Technology @ University Advancing Industry and Society, along with Seven Strategic Goals of UTeM (SSG) 2021-2025. It is designed primarily for academic staff, researchers, administrators, students, collaborators and partners.

2.0 VISION AND MISSION

Vision

To Be One of the World's Leading Innovative and Creative Technical Universities.

Mission

UTeM is determined to lead and contribute to national and international well-being by:

- i. promoting knowledge through innovative teaching, learning, research and technical scholarship.
- ii. developing professional leaders with impeccable moral values.
- iii. generating sustainable development through smart partnerships with the community and with industry.

Research and Innovation Objectives

The strategic R&I objectives of UTeM are to lead the development of sustainable solutions and state-of-the-art technology for the future needs of industry and society. This includes fundamental and applied types of R&I with the following objectives:

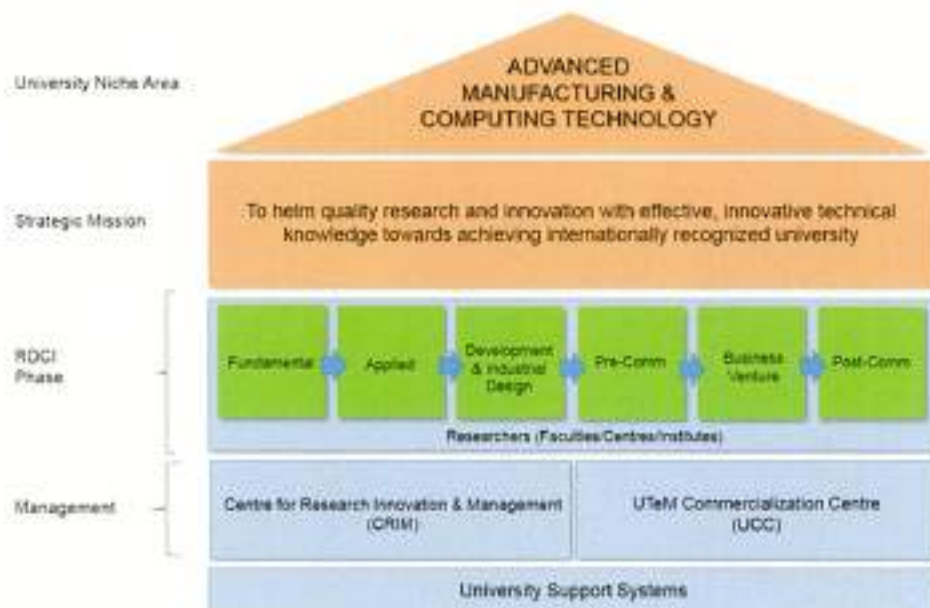
- i. To encourage translational and multidisciplinary research approaches.
- ii. To create indigenous industrially relevant technology.
- iii. To produce high-impact technical-based research and publications.
- iv. To develop expertise in niche areas of technology.
- v. To enhance IPR, technologies, processes and commercialisation of innovative products.
- vi. To develop a highly reputable research centre.
- vii. To establish spin-off company from research and innovation activities.

3.0 ECOSYSTEM

3.1 Research and Innovation Ecosystem

A rich and dynamic ecosystem of research and innovation is a key driver of growth and productivity. In this ecosystem, the R&I environment that is established in UTeM aims to give impact towards industry, society, and agency while complementing various levels of commitment at state government, federal government, and United Nations. This commitment is aligned to 17 Sustainable Development Goals by United Nation, Shared Prosperity Vision 2030 by Malaysia's Government, 10-10 Malaysian Science, Technology, Innovation and Economic (MySTIE) Framework, and Melaka Green City Action Plan (GCAP).

The Research and Innovation framework of UTeM is shown in Figure 3.1. Based on the figure, it is shown that the support units, research and innovation management entities and researchers of UTeM play an important role in supporting the R&I phases, strategic mission and niche area of UTeM. Each component provides mutual reinforcement by playing various roles effectively and by coordinating diverse factors within the R&I value chain. The ecosystem will be monitored by the Office of DVCRI.



*Comm = Commercialisation

Figure 3.1 Research and Innovation Framework of UTeM.

3.2 Thrust of Research Policy

Five (5) thrust components have been identified to ensure the successful implementation of R&I initiatives and achievements. These thrusts are the R&I pillars for the execution of UTeM Strategic Plan (2012-2020) and are further enhanced by Seven Strategic Goals of UTeM (SSG) 2021-2025. The R&I thrusts are as follows:

- Thrust 1: Governance
- Thrust 2: Research and Innovation Strategy
- Thrust 3: Talent Management and Strategic Partnerships
- Thrust 4: Achievement and Recognition
- Thrust 5: Research Ethics

4.0 GOVERNANCE

Research governance is empowered to be R&I centric by creating an organised system that will facilitate and intensify research activities. The research governance structure consists of the Senate at the highest level, followed by the JKTSPI and the R&I Committee. These entities are authorised to manage the strategic plans, execution and performance of R&I. This statement is referred to as in **Appendix 1** herein for the Terms of Reference of Research and Innovation Governance Structure.

4.1 Senate

The Senate is responsible for, but not limited to, enacting legislation governing scholars as well as the teaching, learning, research and innovation activities of UTeM in accordance with UTeM's Constitution.

4.2 Research and Innovation Senate Standing Committee (JKTSPI)

The JKTSPI is chaired by the DVCRI. The committee comprises the following:

- (a) Permanent Members:

- i. All the Deans of Faculties/Institutes
 - ii. Dean of PPS
 - iii. Dean of the Centre for Language Learning (CeLL)
 - iv. Director of CRIM
 - v. One Senate Member with Professor title who is elected by University Senate
- (b) Ex-officio members:
- i. Bursar
 - ii. Chief Librarian
 - iii. Director of University Press
 - iv. Director of UCC
 - v. Director of Industry and Society Collaboration Centre
 - vi. Director of AMC
 - vii. Members who are recommended by the meeting and the DVCRI

Please refer to **Appendix 2** herein for the Terms of Reference of the JKTSPi.

4.3 Centre for Research and Innovation Management (CRIM)

CRIM is established to manage, plan, implement, monitor and strategise R&I activities in UTeM. The Centre is primarily committed to manage the following R&I activities:

- a) Assist researchers in securing research grants, especially in meeting specific procedural requirements.
- b) Manage, coordinate and monitor research grants, technical and financial progress reports through URIS.
- c) Encourage exploitation of research output towards IPRs and commercialisation.
- d) Promote a research culture among academics and students.

4.3.1 Research and Innovation Committee (JKPI)

JKPI is established to coordinate the R&I strategies and activities. The Committee can be divided into 2 levels; formed at the faculty/centre/institute management and at university level which is chaired by the Director of CRIM. The committee at university level

comprises of Deputy Directors of CRIM, Director of UCC, Director of AMC, CoEs Managers, Deputy Dean (Research & Postgraduate Studies/Industrial Linkage), Head of Journal and Conference Unit, Head of Edu-Tourism Unit and members who are recommended by the DVCRI. Please refer to **Appendix 3** herein for the Terms of Reference of JKPI.

4.4 UTeM Commercialisation Centre (UCC)

The Centre serves as an entity responsible for realizing the planning, implementation, monitoring and management aspects of innovation, intellectual property, commercialisation, and technology transfer at UTeM.

4.4.1 Intellectual Property Technical Evaluation Committee

The Intellectual Property Technical Evaluation Committee is chaired by the Director of UCC. The committee comprises the Director of UCC, coordinators of UCC, selected representatives from the faculties, legal advisors and appointed patent agent representatives. This technical committee is responsible for assisting the evaluation of technical aspects of every intellectual property application submitted by researchers.

Please refer to **Appendix 4** herein for the Terms of Reference of the Intellectual Property Technical Evaluation Committee.

4.4.2 Intellectual Property and Commercialisation Committee

The Intellectual Property and Commercialisation Committee is chaired by DVCRI. The committee comprises the Director of UCC, Director of CRIM, Director of AMC and Deans from Faculties/Institutes/Centres. This committee is responsible for advising the University on all matters pertaining to intellectual property, including management and strategic planning, risk assessment, commercialisation activities and exploitation of intellectual property. Please refer to **Appendix 5** herein for the Terms of Reference of the Intellectual Property and

4.5 Advanced Manufacturing Centre (AMC)

Advanced Manufacturing Centre (AMC) is an industry demand-driven research and development centre to provide research, services, and consultation to local and international industries. The centre conducts collaborative research between universities, government agencies and industries to drive innovation in science, engineering and technology that will eventually develop innovative and effective solutions for industry. AMC focuses to be the referral centre by the industry and government agencies for intelligent and precision manufacturing engineering in the country.

4.6 Research Committee

The Committee at faculty/centre/institute level is chaired by the Dean. The committee comprises the Deputy Dean (Research and Postgraduate/Industrial Linkages), Heads of Departments and other appointed academic staffs. Please refer to **Appendix 3** herein for the Terms of Reference of Research Committee.

4.7 Centre of Excellence (CoE)

CoE is an entity that provides best practices and research activities for a focus field that is aligned with UTeM's niche area. CoEs are responsible for:

- a) planning, managing and conducting research activities based on each CoE niche area that involves internal and external parties; and
- b) providing solutions to internal and external parties.

4.8 Journals and Conferences Unit

The Chairman and members of the Journals and Conferences Unit are appointed by the DVCRI. The committee comprises Chief Editors and UTeM-registered journal editors. The Committee is responsible for:

- a) facilitating publication and executing UTeM journals;
- b) monitoring performance of UTeM journals;

- c) encouraging research publications in international refereed and high-impact journals;
- d) identifying reputable journals;
- e) strategically planning for UTeM journals to achieve higher journal indexing (e.g. Scopus, WoS Core Collection, ERA); and
- f) facilitating and monitoring conferences held by UTeM.

4.9 Edu-Tourism Unit

The main objectives of this unit:

- a) To establish UTeM as a tourism hub and unique icon in line with the Melaka status as Historical City.
- b) To enhance the scholarly and education excellence in conducting high quality tourism program towards income generation along with promoting UTeM at local and international level.
- c) To encourage high quality education tourism in technical field which provides benefits to society and community.

4.10 Other Support Systems

Other support system comprises of PTJs that responsible to manage and assist the related operation of research and innovation activities in UTeM towards national and international university ranking. The relevant documents for each PTJs are listed in **Appendix 7** herein.

4.10.1 Bursar Office

Bursar Office is responsible to assist and provide advisory services related to research financial management so that the financial process is complying according to the rules and procedures in force.

Management of research asset (related to the assets that use research grants allocation) including purchasing, registration, disposal, etc. must comply with the Peraturan Kewangan dan Perakaunan Universiti (PKPU).

4.10.2 Knowledge and Communication Services Centre (PPPK)

Knowledge and Communication Services Centre (PPPK) is responsible to provide adequate and up to date IT facilities to improve the quality and efficiency of research and development (R&D). In addition to performing its duties in developing, implementing and maintain ICT infrastructure and info structure by ensuring the use of ICT in among staff and students at the maximum level and quality.

4.10.3 Laman Hikmah Library (PLH)

Laman Hikmah Library (PLH) serves as a resource centre and repository for research and scientific publications. PLH main functions towards research is to provide with the strong and comprehensive collections in UTeM thrust areas, access to online databases, digital collection and UTeM Institutional Repository. In supporting research activities, the library has provided Information Package, Information Literacy Programme and Research Consultation services. PLH also has the role of providing UTeM publication reports in WoS and Scopus as one of the research support systems for university.

4.10.4 University Press

University Press is responsible to publish physical and digital publication as well as handling the publishing process of research book. Beside the publication material, University Press also provide video and multimedia related services, graphic design, printing and binding. University Press makes common cause with libraries, booksellers and dealers and other institution to promote engagement with ideas and expose the public to a diversity of research findings and knowledge from university.

4.10.5 Centre for Strategic, Quality and Risk Management (PPSKR)

Centre for Strategic, Quality and Risk Management (PPSKR) is responsible to coordinate and monitor the university's strategic plan

towards performance in national and international ranking system, to ensure the embrace of quality management system in administrative and management of research activities, as well as to inculcate risk-based thinking among researchers through the implementation of preliminary risk assessment.

4.10.6 Office of Assistant Vice Chancellor - Industry and Community (PNC-JIM)

Office of Assistant Vice Chancellor - Industry and Community (PNC-JIM) is responsible for bridging researchers with the community and industry. PNC-JIM office also has the role of coordinating and monitoring community-oriented projects.

4.10.7 Office of Occupational Safety and Environmental Sustainability (KPKA)

Office of Occupational Safety and Environmental Sustainability (KPKA) plays role to provide occupational safety and health procedures to be used by all staff for both teaching and research. Applicable procedures include chemical management and scheduled chemical and waste disposal management.

4.10.8 Centre for Graduate Studies (PPS)

Centre for Graduate Studies (PPS) is established to further enhance the contributions in the area of engineering, technology and management through rigorous and dedicated academic research. Roles and functions of PPS including to facilitate and manage the offering of the graduate programmes, develop and enhance the quality of the graduate programmes for recognition and meeting the accreditation requirements and promoting the graduate studies programme. PPS aims to be the main choice of students through the improvement of quality, infrastructure and conducive environment in UTeM graduate studies programme with international recognition and accreditation.

4.10.9 Legal Advisor Office

Legal Advisor Office plays role in providing an effective legal advices to protect UTeM's interest at all times, to ensure that all legal documents entered into are properly and thoroughly draft, vet and finalise, to monitor and maintain execution of all research activities, as well as to hinder UTeM from any harmful legal effects through compliance of laws in force from time to time.

4.10.10 Registrar Office

Registrar Office serves to manage the application of academic staff who are qualified and eligible to follow the Research Enhancement Scheme (*Skim Pemantapan Penyelidikan - SPP*) either locally or abroad as outlined in the Guidelines and Rules of the SPP. Governance includes obtaining approval from the Study Leave Committee Meeting (JKCB), issuing a letter of approval to the applicant, ensuring the applicant signs the agreement, ensuring the applicant is fully involved in the activities listed, ensuring the applicant reports to the University after the SPP term has ended, which has a maximum period of three months, ensures that the final report is sent to the Talent Development Division and ensures that the applicant is bound by a service contract with the University after reporting.

4.10.11 Internal Auditor Office

Internal Auditor Office has the role of conducting inspections and evaluations in order to improve quality as well as improvement at all levels of management based on the rules set.

5.0 RESEARCH AND INNOVATION STRATEGY

R&I culture and activities are essential to support the R&I agenda in pioneering future technology, enabling UTeM to become a solution provider for various categories of industrial and societal advancement. UTeM's research and innovation strategy focuses on strategic and research excellence initiatives. These initiatives are directed towards the achievement of strategic results through ethical, synergistic relationships between research, innovation and commercialisation, internal processes and stakeholders/customers.

5.1 Strategic Initiatives

In promoting excellence in R&I, these strategies should be followed:

- a) Innovate and invent new technologies, products and processes through high-impact research and strategic UTeM-industry collaborations.
- b) Secure and obtain funds from various sources including industries and other agencies through collective effort.
- c) Reinforce UTeM-industry relationships through research collaborations.
- d) Conduct translational and multidisciplinary research approaches contributing towards globally visible and prominent.

AMCT is the primary UTeM niche area. AMCT involves the design and integration of innovative technologies to create advanced products and processes in manufacturing and computing. AMCT is supported by the following focus areas:

- a) Green Technology
- b) Emerging Technology
- c) System Engineering
- d) Human-Technology Interaction
- e) Computing Technology

These focus areas are incorporated within the concept of the Fourth Industrial Revolution (IR 4.0).

5.2 Research Excellence Initiative

RGs and CoEs have been established to intensify high-impact research output. Both entities shall be competent and able to provide total industrial solutions to reflect their high-performance index. The index is aligned with standard instruments to measure the relevance of the RGs and CoEs in relation to the needs of academics, industries and societies. Upon reaching a satisfactory level of excellence, CoEs may have the opportunity to apply for Higher Institution Centres of Excellence (HiCoE) status at ministerial level.

5.3 Research Funding

Researchers are encouraged to obtain research grant from local or international funding bodies. Research proposal should highlight the need and requirement of the funding bodies. The grant management process should be conducted in accordance with the guidelines by the grant provider and research management guidelines of UTeM.

6.0 TALENT MANAGEMENT AND STRATEGIC PARTNERSHIP

UTeM places emphasis on identifying, shaping and developing internationally recognized R&I talents, particularly in multidisciplinary research activities, strategic collaboration and partnerships as well as providing total solutions for industry and the community/society.

6.1 Multidisciplinary Research

The multidisciplinary research approach is an indispensable element of the development of excellence in research and innovation. This research approach is one of the important criteria outlined by the MOHE and other related ministries to secure research grants. Researchers are encouraged to incorporate technologies in order to produce high-impact research outcomes, particularly those which benefit the community/society and the nation. Hence, UTeM executes the following strategies:

- a) To empower inter-disciplinary projects among research groups and CoEs.
- b) To enhance inter-disciplinary, inter-UTeM research collaborations and smart partnerships with strategic industries.
- c) To reinforce R&I capacities and capabilities in terms of human capital and technological infrastructure.
- d) To establish strategic networking with international research and industrial organisations.

6.2 Acculturation of Research and Innovation

Acculturation of positive attitudes towards R&I is crucial in developing a conducive ecosystem for research, invention, innovation and technopreneurship directed towards high-impact research. Researchers are encouraged to discover new products that provide solutions for industry and the community/society (translational research types). Such a move will enable researchers to penetrate the global market.

Sustaining excellence in research is critical in order to enhance national competitiveness and economic growth. Hence, researchers must be passionate, focused and driven to advance strategic knowledge, while at the same time possess the technological foresight relevant to the needs of present and future industries. The following initiatives should be taken:

- a) Mentoring and coaching between senior and junior researchers.
- b) Enhancing research and strategic collaboration with other universities and industries.
- c) Increasing publication in high-impact and indexed journals.
- d) Promoting research and innovation output in local and international established research exhibition events.
- e) Developing and executing an effective research management system.
- f) Identifying R&I talents and nurturing them to excel at national and international levels.
- g) Conducting niche-driven research.

6.3 Establishment of Research Group (RG)

RG is led by a group leader, registered under the existing faculties/institute/centres. Its performance shall be assessed annually by referring to the established RG instrument. A group of researchers can apply to establish a new RG after conducting a self-assessment and achieving the minimum requirements.

6.4 Sharing of Research and Innovation Facilities and Infrastructure

The sharing of R&I facilities and infrastructure is strongly encouraged for maximum utilisation. Members of RGs/CoEs shall establish research laboratories that can cater to the needs of multidisciplinary research and relevant industries. Some advanced machines or equipment incur costs based on a minimum rental/services rate.

6.5 Strategic Partnership

UTeM's strategic partnership shall encompass collaborative efforts among UTeM researchers, other universities, industries and societies. Strategic partners will provide strong collaborative networks and financial support, such as IRMG, matching grants, KTP, PPRN, KKP, MyLab, and CREST. Collaboration and partnerships shall be governed by a legal framework and documentation. Any IPR developed from the synergy must be in accordance with the Intellectual Property & Commercialisation Guidelines.

7.0 ACHIEVEMENT AND RECOGNITION

7.1 Output

The following research outputs shall be recognised as indicators of research excellence:

- a) Successful supervision of research students who contribute to human capital development.

- b) Articles in any recognised citation-indexed journal, technical, and non-technical publication.
- c) Monographs, research books, and chapters in books by established publishers.
- d) Successful registrations of IPR.
- e) Product awards in national and international competitions.
- f) Successful commercialisation of research products.
- g) Accreditation awards for research facilities.
- h) Securing research grants.
- i) Joint research collaborations with academia/industry/society via MoU and MoA or any other legal documents which may be agreed between the relevant parties.

7.2 Recognition

The following forms of recognition shall be identified as scholarly achievements:

- a) Appointment as editor of an editorial board of journals or proceedings.
- b) Appointment as a chair, fellow, or committee member of national/international academic/professional bodies.
- c) Appointment as a board member/consultant in industry/society.
- d) National/international recognised awards.
- e) Invitation as keynote/plenary speaker at international conferences.

7.3 Intellectual Property Right (IPR)

Researchers shall register the research outputs as IPR and pursue commercialisation of the research products/prototypes. Please refer to the Intellectual Property & Commercialisation Guidelines and any other relevant documents approved by UTeM's authorities from time to time.

8.0 RESEARCH ETHICS

An outstanding mark in research is the commitment of researchers to ethical standards in research and generation of knowledge. All research is subject to

ethical considerations concerning objectives, methods, data use and ownership, funding agencies, publication and IPR.

A researcher is responsible for his/her actions in research as well as his/her responses to the actions of other researchers. This applies to every aspect of research, including applying for grants, experimenting with design, and generating and analysing data, along with publishing results and any aspect related to IPR.

UTeM Research Ethics Committee reviews proposed studies with human or animal participants to ensure that they conform to internationally and locally accepted ethical guidelines, monitors studies once they have begun and, where relevant, participates in follow-up action and surveillance after the conclusion of the research. Committees have the authority to approve, reject or stop studies, or to demand modifications to research protocols. They may also perform other functions, such as setting policies or offering opinions on ongoing ethical issues in research.

UTeM has formed a University Research Ethics Committee. This committee is appointed by DVCRI and comprises the following:

- a) Director of CRIM;
- b) Deputy Director of CRIM;
- c) A Medical Doctor from UTeM's Health Centre;
- d) Director of KPKA;
- e) A Counselling Officer of UTeM;
- f) A representative from Legal Advisor Office;
- g) Dean of PPS and
- h) Director of Islamic Centre;
- i) Invited expert panels (1 or 2)

Please refer to **Appendix 6** herein for the Terms of Reference of the Research Ethics Committee.

8.1 Code of Ethics

Some examples of the content of the Code of Ethics in research are:

- a) Accountability
- b) Integrity

- c) Honesty
- d) Ethics involving Human, Animals Subjects and Data Surveys
- e) Ethics in Publications
- f) Filing of IPR
- g) Confidentiality
- h) Ethics in Research
- i) Ethics of Health and Safety

8.2 Responsibilities

(i) Accountability

Researchers are accountable to UTeM, staff, students, society and grant providers. Researchers shall declare and manage any financial or professional conflict of interest. Areas of conflict of interest include:

- a) Researchers with an existing or potential financial interest in the outcome of the research.
- b) Researchers being likely to gain a public or private practice benefit that is significantly dependent on the research outcome.
- c) Researchers gaining professionally or personally should any research outcome differ greatly to the expected results of a specific research undertaking.
- d) Researchers being responsible for avoiding any plagiarism activity related to research proposals in research grant applications and research publications.

(ii) Integrity

Researchers shall uphold research integrity at all times. Researchers shall acknowledge the direct and indirect contributions of colleagues, research collaborators, grant providers and others in their work and publications at all times. Research integrity includes maintaining the recognised standards of good scholarship in rigour, care and accountability. All researchers should practise the following actions:

- a) Emphasis on high quality research.
- b) Undertake appropriate research supervision.

- c) Maintain accurate and detailed research activity records and results.
- d) Be ethical about the objectives of one's research.
- e) Cooperate with one's fellow researchers and others.
- f) Publish, develop and commercialise their respective research findings.

(iii) Honesty

Researchers have an obligation to achieve and maintain the highest standards of intellectual honesty when conducting research. Researchers shall foster an environment which promotes intellectual accountability and honesty in ensuring that research they undertake is consistent with the respective research guidelines and adheres to the defined original proposal, particularly concerning the financial aspects.

(iv) Openness

Apart from protecting research interests and rights, researchers should share their research output and related knowledge with other researchers and the public. However, researchers should be cautious about discussing their work in public forums, especially content which has not been peer-reviewed or published. Researchers are guaranteed certain freedoms and should accept the corresponding responsibilities.

(v) Knowledge Enhancement

Researchers should always be motivated to undertake relevant training to ensure knowledge improvement and engagement in producing high quality research. GRA and project members should be given opportunities to attend relevant training/courses as part of their career development. A dynamic research culture should be fostered where all researchers develop their knowledge and skills as well as exchange ideas freely within a climate of mutual trust and cooperation.

(vi) Leadership and Supervision

Principal and senior researchers are responsible for the supervision of the whole research process, including project designs, funding applications, experimental design or research protocols, data recording, data analysis and publication and dissemination of results. Researchers are also responsible for the appointment of qualified Graduate Research Assistant / Research Assistant / Student Research Assistant as well as the supervision of research.

(vii) Respective Policy and Guidelines

Researchers are bound by the respective research and innovation policies, guidelines and legal requirements which regulate their work, particularly health and safety requirements, environmental standards, and privacy and protection of research data.

(viii) Responsibility and Ownership of Research Assets

All research assets belong to UTeM. Researchers are responsible for all assets procured under research funding, and for adhering to the research agreement of the grants, or otherwise stated.

(ix) Curriculum Vitae

A biographical sketch incorporated into a grant proposal or a curriculum vitae used in an application for a fellowship or any other position should follow UTeM standards of accuracy. Inflated or otherwise inaccurate listings of educational background or academic status with intent to deceive, including but not limited to disingenuous claims to degrees, employment history and professional accomplishments are just as reprehensible as irresponsible entries in a list of publications. In some cases, such activity could be considered falsification and categorised as misconduct.

8.3 Ethics in Data Collection

- a) Data surveys shall not violate established professional ethics pertaining to the personal health, safety, rights and privacy of human beings; and the health and safety of, and infliction of injury or pain to, animals and the environment.
- b) Research projects or surveys involving humans (including questionnaires and interviews) must retain a balance between research requirements and human dignity.
- c) All research must follow the approved framework, and questionnaires are subject to review and approval by the University Research Ethic Committee. The purpose is to determine whether any risks posed to subjects are acceptable, and whether the information describing any risks and benefits of the participation of the subjects is conveyed to the subjects in an accurate and intelligible manner.
- d) To monitor research activities and output that is ethically approved.
- e) To encourage all researchers to follow the Code of Ethics (refer to 8.1).

8.4 UTeM Obligation towards Intellectual Property Right

- a) To provide protection during the creation, development, generation and commercialisation of any IPR. This is important to prevent any breach of ethics or guidelines established by UTeM in relation to the moral rights of the inventors, creators or originators of IP, data storage and confidentiality; the attribution of credit, ethical and safe conduct of research, particularly with humans and other animals and environment; and plagiarism or falsification of data.
- b) To recognise and certify the rights and responsibilities of any inventors, creators or originators of IP. It shall take any necessary measures and reasonable steps to ensure that the inventor, creator or originator is acknowledged as the authorised author or inventor of the IP.
- c) To take any measures and steps deemed necessary to ensure that any modifications or alterations of a work do not cause any harm which can affect the reputation or honour of the inventor, creator or originator.

Please refer to the Intellectual Property & Commercialisation Guidelines.

8.5 Ethics in Publication

- a) Any publication must give appropriate credit to all authors for their roles in the research. If more than one person contributes significantly, the decision of which names are to be listed as co-authors should reflect the relative contributions of various participants in the research. The use of alternative forms of acknowledgment within the paper for contributions that do not merit co-authorship, for example technical assistance, is permissible.
- b) Appropriate citation must be made. The work of others should be cited or credited, whether it is published, unpublished, in a written form, an oral presentation or material on a website. Each journal or publisher may specify the particular form of appropriate citation. One does not need to provide citations in the case of well-established concepts found in common textbooks or in the case of phrases which describe a commonly used methodology. Specific rules have been developed for citing electronic information.
- c) An author should not divide a research paper which is a self-contained integral whole into a number of smaller papers merely for the sake of expanding the number of items in the author's bibliography.
- d) In citing one's own unpublished work, an author must be careful not to imply an unwarranted status of the manuscript.
 - i. A paper should not be listed as submitted in anticipation of expected submission.
 - ii. A paper should not be listed as accepted for publication or in press unless the author has received proof or page proof or received a letter from an editor or publisher stating that publication has been approved, subject perhaps only to copy-editing.
- e) Members of a research group who contribute to work that is later incorporated into a publication are entitled to be consulted and informed.

8.6 Misconduct of Research

Research misconduct is defined as fabrication, falsification, or plagiarism, including misrepresentation of credentials in proposing, performing, or reviewing research, or in reporting research results. It does not include genuine errors or differences of opinion. Misconduct as defined above is viewed as a serious professional infringement that is subject to sanctions imposed both by UTeM and by external agencies.

It is important that risks in conducting research are clearly articulated and weighed against the potential value of the research, so that those involved (researchers and subjects) proceed with informed consent. Regardless of the nature of their work, researchers are obliged to anticipate and address the wider direct and indirect consequences of their work. Researchers are urged to avoid the following forms of misconduct:

- a) Data fabrication which is dishonest in reporting results, such as the proclamation of non-existent study results.
- b) Data falsification which includes the altering of existing records.
- c) Plagiarism which includes the direct copying of textual and graphical material or uses data or ideas of another individual without his/her authorisation.
- d) Failure to spend research funds in a way consistent with the goals stated in the relevant contract documents and/or failure to maintain clear and proper records of expenditure.
- e) Failure to acknowledge the source of materials used in a laboratory.
- f) Failure to protect the rights of informants regarding their privacy or to protect the anonymity of research subjects and the confidentiality of information resources.
- g) Violation of property, such as stealing or destroying property of others, including research papers, supplies, equipment or products of research.
- h) Dishonesty in publication, such as misleading ascription of authorship including listing authors without their permission, attributing work to others who have not in fact contributed to the research, and the lack of appropriate acknowledgment of work produced by others involved in the research.

- i) Any misconduct arising from research or publication shall be managed by the relevant university authority according to the prescribed rules and regulations.

8.7 Safety and Health

- a) UTeM Office of Occupational Safety and Environmental Sustainability is responsible for advising UTeM on safety and health policies, ensuring all faculties/departments are in compliance with policies, statutes, and regulations; monitoring the effectiveness of safety programs; and providing central safety and health services to all areas of UTeM in accordance with the Occupational Safety and Health Act 1994, the Factories and Machinery Act 1967 (Act 139), the Environmental Quality Act 1974 (Act 127) and other related laws pertaining to safety and health in Malaysia.
- b) UTeM shall make all reasonable efforts to:
 - i. Protect the safety and health of UTeM staffs, students and research associates;
 - ii. Provide safe workplaces for staffs and students;
 - iii. Provide information to staffs and students about safety and health hazards;
 - iv. Identify and correct safety and health hazards and encourage staff and students to report any hazards;
 - v. Provide information and protection for those on campus and in the surrounding community regarding environmental hazards arising from operations at UTeM.

9.0 MISCELLANEOUS

- (a) Any breach of the terms of this Policy shall be liable for action under any one or any appropriate combination of the following:
 - i. Statutory Bodies (Discipline and Surcharge) 2000;
 - ii. UTeM (Discipline of Students) Rules 2009; or
 - iii. Any laws, rules, regulations, circulars, orders and guidelines in force from time to time.

- (b) This Policy is subject to any laws, rules, regulations, circulars, orders and guidelines in force from time to time.
- (c) This Policy is subject to amendment from time to time by UTeM.

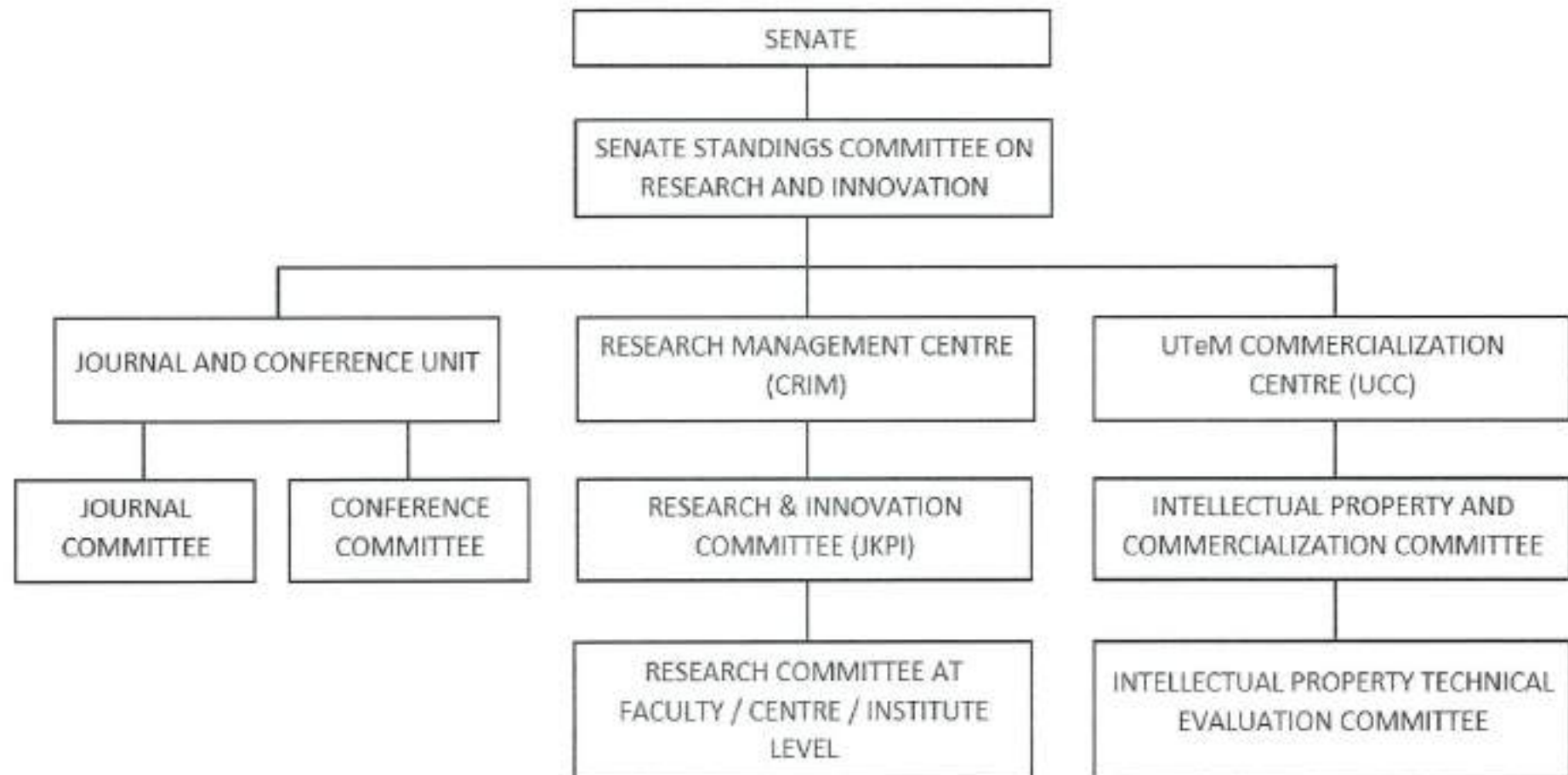
REFERENCES

- a) Circular Letter No.7 2015: Intellectual Property & Commercialisation Guidelines.
- b) Administration Circular No.35 2021, Occupational Safety and Health Policy of UTeM.
- c) National Science Council (2020). Malaysia Code of Responsible Conduct in Research. Academy of Sciences Malaysia.
- d) Universiti Pertahanan Nasional Malaysia (2016). Dasar Penyelidikan dan Inovasi, Universiti Pertahanan Nasional Malaysia.
- e) Universiti Putra Malaysia (2012). Universiti Putra Malaysia Rules (Research) 2012.
- f) Universiti Teknologi Malaysia (2018). Polisi Penyelidikan Dan Pembangunan, Universiti Teknologi Malaysia.
- g) Universiti Tun Hussein Onn Malaysia (2021). Buku Dasar Penyelidikan, Universiti Tun Hussein Onn Malaysia.
- h) Sustainable Development Goals from <https://www.epu.gov.my/en/sustainable-development-goals>
- i) Academy of Sciences Malaysia (2020). 10-10 Malaysian Science, Technology, Innovation and Economy (MySTIE) Framework: Trailblazing the Way for Prosperity, Societal Well-Being & Global Competitiveness.
- j) Asian Development Bank (2014). Green City Action Plan: A Framework for GrEEEn Actions Melaka, Malaysia.
- k) Ministry of Economic Affairs (2019). Shared Prosperity Vision 2030: Restructuring Malaysia's Development Priorities.

APPENDIX

APPENDIX 1

RESEARCH AND INNOVATION GOVERNANCE STRUCTURE



APPENDIX 2

TERMS OF REFERENCE OF THE JKTSPI COMMITTEE

1. JKTSPI Committee is responsible to Senate in matters related to research, innovation and commercialisation of UTeM.
2. To ensure the compliance of policy and guidelines related to research, innovation and commercialisation at all level including UTeM's students.
3. To study and update the policy and guidelines on research, innovation and commercialisation in line with the current requirement of UTeM.
4. To identify, plan and report on the current development of research, innovation and commercialisation activities.
5. To identify, plan and report on the current development of research grants (internal and external).
6. To plan and develop policy and guidelines related to research, innovation and commercialisation.
7. To identify, plan and recommend on the types of research, innovation and commercialisation collaboration with industrial partner that can generate university income as well giving impact to the society.
8. To consider and recommend on scholarly publication report and activities.
9. To discuss and recommend on the proposals of organizing and UTeM participation in conference / seminar / competition / exhibition at all levels.
10. To consider and approve on the MoA regarding research, innovation and commercialisation.
11. To report the JKTSPI minutes of meeting to Senate.
12. To handle certain item that may be referred by the Senate and implement any power and function as given and presented by the Senate or being allocated under any Statute, Method or University Regulation and conduct all items that are beneficial or need with the function implementation.

APPENDIX 3

TERMS OF REFERENCE

Research Committee at Faculty/Centre/Institute Level

1. To plan the strategies and develop action plan in implementing research strategies, innovation and commercialisation at faculty/centre/institute level.
2. To monitor the performance and effectiveness of the implemented strategies in research, innovation and commercialisation.
3. To report research and innovation activities to the JKPI Committee.

JKPI at University Level

1. To plan the strategies and develop action plan in implementing research strategies, innovation and commercialisation which to be presented at JKTSPi meeting.
2. To monitor the performance and effectiveness of the implemented strategies in research, innovation and commercialisation at university level.
3. To identify potential research that can generate university income and commercialisation.

APPENDIX 4

TERMS OF REFERENCE OF THE INTELLECTUAL PROPERTY TECHNICAL EVALUATION COMMITTEE

1. Technical assessment meetings are held periodically six times a year tentatively in January, March, May, July, September, and November. However, special meetings can be held as per current requirements.
2. The technical evaluation panel consists of the Director of UCC as chairman, and several other panels appointed by DVCRI according to expertise and field, whether from academic staff or industry or patent agents (if required).
3. The main aspects of IP evaluation are novelty, product impact to the community and have commercial value.
4. To advise and make recommendations to the Intellectual Property and Commercialisation Committee in relation to any improvements to the intellectual property protection application process.
5. To review and evaluate all matters relating to IP, including risk assessment and exploitation of intellectual property rights.
6. Providing technical input for each IP application, management, patent and filing and trademark infringement, releasing trademarks and copyrights; investigate and assist in internal and external IP disputes and solutions.
7. Support and endorse all IP applications and subsequently approved by DVCRI for the purpose of registration process to MYIPO or patent agents. However, the process is not included for intellectual property protection applications that are not based on research and innovation.
8. The Chairman may from time to time invite any outside officer or panel who has relevant expertise to be a member for ideas and suggestions.
9. If a meeting cannot be held on a scheduled date for a reason (except for the absence of a quorum), the meeting shall be adjourned on a date to be fixed by the Chairman later.
10. The quorum required for the meeting or due diligence shall be 6 standing committee members and one (1) additional member of the Invitation Committee based on the requirements prescribed (according to the expertise and scope of each application).
11. The Technical Evaluation Panel is required to maintain confidentiality and will not disclose any information received or obtained before, during and after the meeting.

APPENDIX 5

TERMS OF REFERENCE OF THE INTELLECTUAL PROPERTY AND COMMERCIALISATION COMMITTEE

1. To certify and confirm any improvements to the intellectual property protection application process proposed by the Intellectual Property Technical Evaluation Committee.
2. Advise the University on all matters pertaining to intellectual property, including management and strategic planning, risk assessment, commercialisation activities and exploitation of intellectual property.
3. Appoint any consultant, if necessary, to make a technical assessment, risk assessment, market review, business plan or intellectual property exploitation.
4. Assist the University in resolving disputes or arising matters pertaining to intellectual property.
5. Recommend and support any commercialisation application to be brought to the JKTSPIL.
6. The Chairman may from time to time invite any officer to become a member for ideas and suggestions.
7. If a meeting cannot be held on a scheduled date for any reason (except for the absence of a quorum), the meeting shall be adjourned to another date determined by the Chairman later.
8. Appointment period is for a minimum of 1 year or a maximum of 2 years (depending on the duration of the member's appointment to his/her administrative position).
9. The quorum required for the meeting or the matter is at least 6 of the number of members of the meeting including the chairman.
10. All meeting members of the meeting are required to maintain confidentiality and will not disclose any information received or obtained before, during and after the meeting.

APPENDIX 6

TERMS OF REFERENCE OF THE RESEARCH ETHICS COMMITTEE

1. To propose an action according to the types of ethical breach by the researchers.
2. To provide a written approval to the researchers who are going to conduct research that involved material or living research source such as human organ or animal for data collection.
3. To provide review on all research protocol that involved human as a subject (including technical research involving patients) or other subject that contribute to general knowledge related to bio-medical and health sciences.
4. To ensure the protection on research subject and researcher always follow the guidelines for research (Malaysia Code of Responsible Conduct in Research by National Science Council) that involved human subject.
5. To disseminate information and procedures related to ethical guidelines and approval involving human subject to the researchers in Faculties.

APPENDIX 7

LIST OF DOCUMENTS FOR R&I ECOSYSTEM

PTJ	References
CRIM	1) Proses Pemilikan Geran Penyelidikan Di UTeM (PK01) 2) Proses lanjut Tempoh Geran Penyelidikan (PK02) 3) Proses Perlantikan Pembantu Penyelidik (PK05) 4) Proses Pelanjutan dan Penamatan Lantikan Pembantu Penyelidik (PK06) 5) Proses Permohonan Persidangan, Seminar, Kursus Bengkel (PK09) 6) Proses Permohonan menerbitkan Artikel Jurnal (PK10) 7) Proses Pemantauan Laporan Prestasi atau Laporan Akhir (PK11) 8) Garis Panduan Pengurusan Penyelidikan 9) Garis Panduan Penyelidik Pasca Doktorat 10) Garis Panduan Sangkut Penyelidikan 11) Garis Panduan Kecemerlangan Entiti Penyelidikan
UCC	1) Garis Panduan Harta Intelek & Pengkomersilan 2) Garis Panduan Pra Pengkomersilan Produk Penyelidikan Bagi Tujuan Pengujian (Test Bed) 3) Dasar dan Garis Panduan Penubuhan Syarikat Spin-Off di UTeM
Bursar Office	Peraturan Kewangan dan Perakaunan Universiti
Knowledge and Communication Services Centre (PPPK)	1) Dasar ICT UTeM 2) Dasar Keselamatan ICT UTeM 3) Garis Panduan Membangun dan Menyelenggara Sistem Maklumat 4) Garis Panduan dan Peraturan ICT 5) Tatacara Perolehan ICT
Laman Hikmah Library (PLH)	Library Handbook For Undergraduate And Postgraduate Programmes
University Press	Dasar dan Garis Panduan Penerbitan
Strategic, Quality and Risk Management Center (PPSKR)	1) Manual Pengurusan Risiko UTeM 2) Kaedah Penyediaan dan Pengemaskinian Senarai Daftar Risiko Pusat Tanggungjawab UTeM 3) Pelan Strategik UTeM
Office of Assistant Vice Chancellor - Industry and Community (PNC-JIM)	Garis panduan dan Tatacara Pelaksanaan Program Jaringan Industri dan Masyarakat di UTeM
Office of Occupational Safety and Environmental Sustainability (KPKA)	1) Manual Keselamatan, Kesihatan Pekerja UTeM 2) Polisi Pengurusan Sisa Pepejal dan Buangan Terjadual di UTeM 3) Dasar Keselamatan dan Kesihatan Pekerjaan UTeM 4) Pengurusan Bahan Kimia dan Pengurusan Pelupusan Bahan Kimia dan Sisa Buangan Terjadual

Centre for Graduate Studies PPS	1) Buku Panduan Peraturan Pasca Siswazah 2) Skim Zamalah
PPSH	Pekeliling Akademik Bilangan 9 Tahun 2017 Peraturan dan Garis Panduan Program Pesisir dan Pasca Siswazah UTeM
Legal Advisor Office (PUU)	1) Akta Universiti & Kolej Universiti 1971 2) Perlembagaan UTeM 3) Statut, Kaedah, Garis Panduan, Pekeliling yang berkuat kuasa dari semasa ke semasa 4) Pekeliling Pentadbiran Bilangan 30 Tahun 2021 Penyelarasan Perwakilan Kuasa Dokumen-Dokumen di UTeM
Registrar Office	1) Garis Panduan dan Peraturan Skim Pemantapan Penyelidikan UTeM 2) Perjanjian Skim Pemantapan Penyelidikan UTeM
Internal Auditor Office	1) Manual Audit Dalam 2) Website Pejabat Audit Dalam UTeM