

**SENARAI BIDANG DAN SUB BIDANG PENGAJIAN  
BIASISWA YANG DI-PERTUAN AGONG (BYDPA) TAHUN 2023**

**A) Sains dan Teknologi**

**(i) Sains Hayat**

- Sains Tumbuhan
- Biofizik
- Biokimia
- Biologi
- Bioteknologi
- Ekologi, Evolusi dan Alam sekitar
- Entomology
- Farmakologi & Farmasi
- Fisiologi
- Genetic & Heredity
- Immunology
- Mycology
- Palaeontology
- Parasitology
- Pemakanan
- Perhutanan
- Perikanan
- Persekitaran
- Pertanian
- Sains Veterinar
- Toxicology
- Virology
- Zoology

**(ii) Sains Fizikal**

- Astronomi dan Astrofizik
- Crystallography
- Earth Science
- Fizik
- Kimia
- Matematik & Statistik
- Meteorologi dan Sains Atmosfera
- Nanoteknologi
- Sains Polimer

**(iii) Kejuruteraan Teknologi**

**Bioscience Technology**

- Gene Editing & Engineering
- Nanobiotechnology
- Molecular Omics Technology
- Bioinformatics & Biocomputing
- Advanced Biomaterials

**Neuro Technology**

- Neuromodulation & Neurostimulation
- Neuroprosthetics
- Brain Sensing Technology
- Neurorehabilitation Technology
- Brain-Computer Interface Technology

- Synthetic Biology
- Biofactories
- Bioseparation & Biorefining Technologies
- Biosensor Technology
- Bioreactor and Separation Technologies
- Metadata Analytics
- Neurodiagnostics
- Neuromorphic Computing
- Neuropharmacology
- Neuroinformatics
- Neurofeedback Systems
- Neuroergonomics
- Neuromarketing

### **Cybersecurity & Encryption**

- Network Security
- Cyber Forensics
- Cyber Risk Management
- Cryptography
- Cloud Security
- Mobile Application Security
- Cybercrime Legislation and Policy
- Ethical Hacking and Penetration Testing
- Security Audit & Vulnerability Assessment
- Secure Programming (Encryption)

### **Blockchain**

- Cryptography Technology
- Computer Network
- Distributed Ledger Technology
- Information Systems
- Blockchain Programming
- Computer Science
- Security Engineering
- Software Engineering
- Database Management
- Management, Economics/ Crypto-Economy and Finance
- Digital Identity Management
- Business Development
- Telecommunications

### **Augmented Analytics & Data Discovery**

- Machine Learning
- Predictive Analytics
- Text Mining
- Data Mining
- Business Intelligence
- Natural Language Generation
- Data Management
- Data Science
- Cloud Computing

### **Advanced Materials**

- Nanoengineered Materials/  
Nanotechnology
- Derivative Materials
- Biomaterials Engineering
- Materials Science
- Fabrication & Integration Engineering
- Functional/ Smart Materials
- Metamaterials
- Organic, Green & Renewable Materials
- Multi-Materials Structures
- Polymer Science
- Biomedical Materials
- Printing & Flexible Electronics
- Catalysts

### Sensor Technology

- Micro-Electro-Mechanical (MEMS) Systems
- Piezoceramics
- Wearable Biosensors
- Electrochemical Sensors
- Microelectronics
- Nanosensors
- Smart Dust Sensor Network
- Soft Sensor
- Electro-Optical and Chemical Sensors
- Monitoring and Control Systems
- Printed Sensor System

### Artificial Intelligent Systems

- Machine Learning
- Neural Network
- Robotics
- Deep Learning
- Computer Vision
- Natural Language Processing (NLP)
- Knowledge Graphs
- Generative Adversarial Networks (GAN)
- Cloud Computing
- Advanced Control Systems

### 4D/5D Printing

- Materials Science
- Advanced Design
- Software Engineering
- Advanced Materials
- Electronic & Controls
- Robotic & Mechatronic
- Precise Engineering
- Additive Manufacturing
- Computational Modelling
- Digital Photography
- Printing Materials
- Printing & Flexible Electronics
- Construction & Automobile Components

### 5G/6G

- Machine Type Communication/ IoT Communications
- Medium Access Control
- Interference Management
- New Waveform Design and GHz/THz
- Massive MIMO Technology and Intelligent
- Terrestrial and Satellite Integrated Network
- AR/VR/XR and Internet Of Senses Over 5G/6G
- Crowdsource Applications
- Electromagnetic Fields Effect (EMF) On Humans
- Quality Of Experience (QOE)
- Smart Metasurfaces
- Autonomous Mobility
- Intelligent Edge

## **B) Ekonomi**

- Ekonometrik
- Sejarah Ekonomi
- Ekonomi
- Ekonomi Politik

## **C) Undang-Undang**

- Undang-undang Perbankan
- Undang-undang Komersial
- Pengajian Undang-undang Jenayah
- Undang-undang Persaingan
- Sejarah Perundangan
- Undang-undang Adat
- Undang-undang Perdagangan Antarabangsa
- Perundangan
- Undang-undang Perburuhan
- Amalan Perundangan
- Amalan Notari
- Pengajian Paralegal
- Undang-undang Syariah
- Undang-undang Percukaian

## **D) Kewangan Islam**

- Perbankan dan Kewangan Islam
- Perdagangan Islam
- Mu'amalat
- Takaful