## GRADUATE STUDIES PROGRAMME

The programmes offered by the Centre for Graduate Studies (CGS) are as follows.

### 1. MASTER’S DEGREE

- **Master of Science (Civil Engineering)**
- **Master of Science (Mechanical Engineering)**
- **Master of Science (Energy Engineering)**
- **Master of Science (Chemical Engineering)**
- **Master of Science (MBA)**
- **Master of Science (Business Administration)**
- **Master of Science (Research Management)**
- **Master of Science (Defence Technology)**
- **Master of Science (Maritime Technology)**
- **Master of Science (Chemistry)**
- **Master of Science (Mathematics)**
- **Master of Science (Physics)**
- **Master of Science (Statistics)**
- **Master of Science (Engineering)**

### 2. DOCTOR OF PHILOSOPHY’S DEGREE

- **Ph.D. (Civil Engineering)**
- **Ph.D. (Mechanical Engineering)**
- **Ph.D. (Electrical and Electronic Engineering)**
- **Ph.D. (Computer Science)**
- **Ph.D. (Strategic and International Relations)**
- **Ph.D. (Resource Management)**
- **Ph.D. (Defence Technology)**
- **Ph.D. (Maritime Technology)**
- **Ph.D. (Chemistry)**
- **Ph.D. (Chemistry Engineering)**
- **Ph.D. (Biotechnology)**
- **Ph.D. (Physics)**
- **Ph.D. (Chemical Engineering)**
- **Ph.D. (Statistics)**
- **Ph.D. (Education)**
- **Ph.D. (Sports Science)**

### 3. RESEARCH FIELDS

Research fields offered are as follows.

#### 3.1 Civil Engineering

- Reinforced Concrete
- Steel and Composite Structure Design
- Battle Damage Assessment and Repair Techniques
- Ground Shock, Ground Penetration and Burried Structures
- Blast, Ballistic and Impact Loading
- Military Bridges and Rafts
- NBC Environmental Impact and Protection
- Demolition
- Hardened Structures
- Rapid Construction Technology
- Rapid Water Supply Technology
- Transportation

#### 3.2 Mechanical Engineering

- Blast and Armour Protection Systems
- Weapons and Ammunition Systems
- Automotive

#### 3.3 Electrical and Electronic Engineering

- Guidance Systems
- Sensors and Surveillance
- Communication Systems
- Control and Guidance Systems

#### 3.4 Computer Science

- Network Security
- Cyber Centric Warfare
- Cryptography
- Artificial Intelligence
- Intelligent Systems Applications
- Knowledge Intelligence
- Knowledge Management
- Warfare Simulations

#### 3.5 Strategic and International Relations

- Military and Society
- East Asian Regional Security
- Foreign and Defence Policy
- International Humanitarian Law
- International Relations
- International Security
- Malaysian Defence and Security Policy
- Strategic Thought
- War and Conflict

#### 3.6 Resource Management

- Integrating Military Storage Resources
- Resource and Inventory Management
- Impact of Military Culture and Productivity
- Support Resources Deployment
- Family Development and Resource Management
- Mobilisation and Support Deployment
- Resilience in Time of War
- Management of Military Land
- Knowledge-Based Resource in Defence

#### 3.7 Defence Technology

- Weapon Systems
- Armoured Vehicles
- Artillery Systems
- Unmanned Aerial Vehicles
- Ammunition and Explosives
- Electronic Warfare
- Fire Control Systems
- Special Operation Vehicles
- Defence Capabilities and Readiness
- Defence Planning and Development
- Military Operational Research
- Revolution in Military Affairs

#### 3.8 Maritime Technology

- Navigation Science
- Maritime Communications
- Surface Warfare Technology
- Underwater Warfare Technology
- Oceanography
- Maritime Transportations Systems
- Maritime Safety and Environment
- Integrated Logistic Support for Ship
- Ship Maintenance Systems
- Electrical and Electronic Weapon Systems
- Marine Technology Systems

#### 3.9 Chemistry

- Analytical Chemistry
- Polymer Chemistry
- Biochemistry
- Organic Chemistry
- Inorganic Chemistry
- Physical Chemistry
- Material Chemistry
- Environmental Chemistry

#### 3.10 Chemistry Engineering

- Separation Process
- Polymer Engineering
- Nanotechnology

#### 3.11 Biology

- Biotechnology
- Microbiology
- Genetics
- Molecular Biology

#### 3.12 Physics

- Solid State Physics
- X-Ray Crystallography
- Ground Recording Station and Satellite
- Ionising Radiation
- Nano Cellulose

#### 3.13 Mathematics

- Operations Research
- Biomathematics

#### 3.14 Statistics

- Directional Statistics
- Error in Variables Models
- Functional Data Analysis

#### 3.15 Education

- Curriculum and Pedagogy
- Educational Administration
- Languages and Cultures
- Linguistics and Literature
- Educational Technology
- Measurement and Assessment

#### 3.16 Coaching Science

- Coach Education
- Coaching Management
- Exercise Physiology
- Biomechanics
- Motor Learning
- Physical Conditioning
- Sport Nutrition
- Sport Psychology
- Sport Sociology
- Sport Coaching and Performance

#### 3.17 Sports Science

- Sport Coaching and Performance
- Exercise Physiology
- Biomechanics
- Motor Learning
- Physical Conditioning
- Sport Nutrition
- Sport Psychology
- Sport Sociology
- Sport Coaching and Performance

### 4. ADMISSION REQUIREMENT

Applicants to graduate programmes at Universiti Pertahanan Nasional Malaysia (UPNM) must fulfill the following requirements.

#### A. Master’s Programmes

1. A bachelor’s degree with minimum CGPA of 2.75 or equivalent, from UPNM or any recognised university by the Senate; or
2. A bachelor’s degree not meeting CGPA of 2.75 or equivalent, can be accepted subject to rigorous internal assessment; or
3. Other qualifications that are recognised by the Senate as equivalent to a bachelor’s degree; or
4. Other qualifications recognised by the Senate that are obtained through Accreditation of Prior Experiential Learning (APEL) or Recognition of Prior Learning (RPL); or
5. Other requirements as required by the programme where applicable.

#### B. Doctor of Philosophy’s Programmes

1. A master’s degree from UPNM or any recognised university by the Senate; or
2. Other qualifications that are recognised by the Senate as equivalent to a master’s degree; or
3. Other qualifications recognised by the Senate that are obtained through Accreditation of Prior Experiential Learning (APEL) or Recognition of Prior Learning (RPL); or
4. Other requirements as required by the programme where applicable.
5. MODE OF GRADUATE STUDIES

The current mode of studies is by Research only. Candidates must submit their thesis according to their fields of study at the end of their studies.

6. SUPERVISION OF STUDENTS

A Supervisory Committee will be formed to monitor the progress of each candidate's research work.

7. ORAL EXAMINATION

A candidate is required to pass his/her viva voce examination (an oral examination) before the Degree is conferred. The oral examination is conducted by Viva Voce Examination Committee comprising of:

7.1 A Chairman (an academician related to the candidate's field of study and is recognised by the University's Graduate Studies Committee);
7.2 External Examiner;
7.3 Internal Examiner(s) (academician/s in the field related to the candidate's field of study);
7.4 The Supervisor (as an observer); and
7.5 A Representative from the CGS.

8. APPLICATION

All applications for admission to UPNM's Graduate Studies Programme must use the form that can be downloaded from www.upnm.edu.my or obtained from the office of the CGS. Applicants are also required to prepare a brief proposal (a maximum of 10 pages) on the research that they wish to carry out. The completed form together with the research proposal and necessary certified documents are to be forwarded to the office of the CGS for processing.

For more information, please contact:
Dean
Centre for Graduate Studies (CGS)
National Defence University of Malaysia
Sungai Besi Camp, 57000 Kuala Lumpur
Tel: (+603) 9051 3400 ext. 4541 / 3517 / 3516 / 3003
Fax: (+603) 9051 3436
Website: www.upnm.edu.my

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3. DURATION OF STUDIES

The duration of studies is illustrated in the table below.

<table>
<thead>
<tr>
<th>PROGRAMMES</th>
<th>STATUS OF STUDIES</th>
<th>MINIMUM DURATION</th>
<th>MAXIMUM DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master's Programme</td>
<td>Full-Time</td>
<td>1 year</td>
<td>3 years</td>
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<tr>
<td></td>
<td>Part-Time</td>
<td></td>
<td></td>
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<tr>
<td>Doctoral of Philosophy Programme</td>
<td>Full-Time</td>
<td>2 years</td>
<td>5 years</td>
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<tr>
<td></td>
<td>Part-Time</td>
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10. TUITION FEES

**Tuition Fees - Nominal Rate**

<table>
<thead>
<tr>
<th></th>
<th>MALAYSIAN STUDENTS</th>
<th>INTERNATIONAL STUDENTS</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Part-Time</td>
<td>Full-Time</td>
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<tr>
<td></td>
<td>(RM)</td>
<td>(RM)</td>
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<tr>
<td>Registration</td>
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<td>Convocation</td>
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<td>Examination Fees</td>
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<td></td>
<td><strong>ONE TIME FEE (ENROLLMENT REGISTRATION)</strong></td>
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<td>Insurance</td>
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<td></td>
<td><strong>RECURRING FEES (PER SEMESTER)</strong></td>
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<td></td>
<td>Tuition Fees</td>
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<td>Semester 1</td>
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<tr>
<td></td>
<td>Subsequent Semesters</td>
<td>1,550.00</td>
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* All rates are subject to revision and changes without notice.