

Article 5: Appendix 1

**Senior Professional and Technical Examinations for Engineers—Eligibility Requirements**

| No. | Exam Category       | Eligibility Requirements  |
|-----|---------------------|---|
| 1.  | Civil Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <ul style="list-style-type: none"><li data-bbox="576 539 1415 813">I. Having graduated from a department, division, graduate institute, or a degree program in civil engineering or construction and engineering at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</li><li data-bbox="576 824 1415 2007">II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: mechanics of materials, structure behavior (engineering mechanics), or engineering mechanics; theory of structure; surveying; soil mechanics; engineering materials, mechanical materials, civil engineering materials, or architectural structure and materials; engineering geology; hydraulic engineering; transportation engineering; RC engineering, RC, RC design, or behavior of RC members; prestressed concrete engineering, prestressed concrete design, or prestressed concrete; steel structure engineering, steel structural design, or steel structure drawing; foundation engineering; bridge engineering, bridge design, or road bridge; road engineering; harbor engineering; tunneling; quantity survey or construction and assessment; construction equipment or construction quantity survey and equipment; building construction; coastal engineering; structural analysis; structural design; engineering survey; construction method or civil engineering construction method; construction management or construction and engineering management; geotechnics; and engineering</li></ul> |

| No. | Exam Category           | Eligibility Requirements   |
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|     |                         | <p>management. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include theory of structure, surveying, soil mechanics, and engineering materials. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>  |
| 2.  | Hydraulic Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in hydraulic engineering, civil engineering, harbor and river engineering, agricultural engineering, water resources and environmental engineering, marine environment and engineering, hydraulic and ocean engineering, or civil engineering and hydraulic engineering at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>IV. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: fluid mechanics; hydrology; hydraulic engineering; harbor and river engineering; flood control; harbor engineering; coastal engineering; irrigation and drainage engineering; mechanics of materials or engineering mechanics; RC, RC design, RC engineering, or behavior of RC members; theory of structure; surveying; engineering geology; wave mechanics; hydroelectricity; underground water; water supply and wastewater treatment engineering; fluid mechanics lab; hydrotech structural design; barrage engineering; soil and water conservation engineering; water resources and planning; channel hydraulics; soil mechanics;</p> |

| No. | Exam Category            | Eligibility Requirements   |
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|     |                          | <p>ocean engineering and ocean wave engineering; hydrology and hydrologic analysis; water resources engineering and planning; geotechnics; irrigation engineering; drainage engineering; and farm irrigation. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include wave mechanics, fluid mechanics, hydrology, and fluid mechanics lab. Documents proving the completion of the courses and credits granted are required.</p> <p>II. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>  |
| 3.  | Structural Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in civil engineering or theory of structure at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: mechanics of materials, structure behavior (engineering mechanics), or engineering mechanics; theory of structure; RC design, RC engineering, RC, or behavior of RC members; soil mechanics; engineering geology; structural dynamics; prestressed concrete design, prestressed concrete engineering, or prestressed concrete; steel structural design, steel structure engineering, or steel structure drawing; plastic design of steel structures; house structural design or building structural design; bridge design, bridge engineering, or road bridge; foundation engineering; basic design; special concrete structural design; matrix structural analysis or advanced theory of structure; earthquake</p> |

| No. | Exam Category              | Eligibility Requirements   |
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|     |                            | <p>engineering; plate and shell design; finite element method; hydrotech structural design; and structural dynamics analysis and aseismatic design. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include foundation engineering, theory of structure, structural dynamics, and matrix structural analysis. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>  |
| 4.  | Geotechnical Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in civil engineering or construction and engineering at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: geotechnics; soil mechanics; foundation engineering; engineering geology; mechanics of materials or engineering mechanics; reinforced concrete, RC design, RC engineering, or behavior of RC members; rock mechanics; slope side engineering or slope stability; construction method or civil engineering construction; tunneling; site investigation; soil dynamics; earthquake engineering; basic design and construction; structural geology; geophysical exploration; highway engineering; dam engineering; surveying; water and soil conservation; engineering materials; underground water and percolation; and ground improvement. Each course may count for a maximum of</p> |

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|     |                      | <p>three credits and a total of at least 20 credits must be completed. The required seven courses must include mechanics of materials, soil mechanics, foundation engineering, and engineering geology. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>  |
| 5.  | Survey Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in survey engineering, surveying and mapping engineering, survey and geospatial information engineering, or land survey and information at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least one course for each of the following seven fields. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. Documents proving the completion of the courses and credits granted are required.</p> <p>(1) Plane survey: plane survey (including internship) or surveying (including internship).</p> <p>(2) Survey adjustment: survey adjustment or survey adjustment.</p> <p>(3) Geodetic survey: geodetic survey (including internship), satellite geodetic survey, and physical geodetic survey.</p> <p>(4) Aerial survey and remote sensing: aerial survey or aerial photogrammetry, aerial survey and analysis, digital aerial survey, numerical photogrammetry, remote sensing or</p> |

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|     |                             | <p>remote sensing, and environmental remote sensing.</p> <p>(5) Geography information system, cartography, or regulations on surveying: geography information system, land information system, geospatial information system, national geographic information system, cartography, map projection, cartographic compilation, land act, regulations on cadastral surveying, and survey engineering management.</p> <p>(6) Satellite survey: satellite survey, satellite positioning survey, GPS, and advanced satellite survey.</p> <p>(7) Applied surveying: engineering surveying, topographic survey, mine surveying, cadastral surveying or land surveying, urban plan surveying, hydrographic survey, woodland survey, tunnel survey, and survey engineering.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>  |
| 6.  | Environmental Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least one course for each of the following seven fields. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include air pollution (introduction, engineering, prevention, or control), sewage treatment engineering (sewerage engineering), solid waste (solid waste treatment, waste disposal, solid waste pollution, and waste disposal and design, or garbage and waste disposal), or environmental engineering (for six credits). Documents proving the completion of the courses and credits granted are required.</p> <p>(1) Environmental management: environmental engineering (introduction), environmental sanitation, environmental planning (introduction or management), environmental</p> |

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|     |               | <p>systematic analysis, EIA, environmental economics, pollution prevention, industrial waste reduction, regulations on environmental protection, and environmental ecology.</p> <p>(2) Environmental sciences: environmental chemistry, environmental engineering chemistry, environmental microbiology, microbiology for environmental engineering, soil chemistry, environmental soil science, and environmental toxicology.</p> <p>(3) Water and sewage treatment engineering: sewage treatment engineering, sewerage engineering, sanitation engineering, water supply engineering, tap water engineering, water and wastewater treatment, water treatment (works), wastewater treatment (works), water treatment and design, environmental engineering unit operation, river pollution, water quality management, water pollution, water pollution prevention (works), industrial wastewater (works, treatment), underground water pollution prevention, and soil and underground water pollution treatment.</p> <p>(4) Water and wastewater treatment design: water supply engineering design, tap water engineering design, sanitation engineering design, sewage treatment engineering design, sewerage engineering design, water supply and drainage facility, water treatment engineering and design, fluid mechanics, hydrology, and hydrologic engineering.</p> <p>(5) Air and noise control engineering: air pollution (introduction, engineering, prevention, or control), noise and vibration (prevention or control), environmental noise, noise pollution, noise detection and prevention, and noise prevention engineering</p> <p>(6) Waste engineering: solid waste (treatment), waste disposal, solid waste pollution, waste disposal and design, garbage and waste disposal, hazardous waste (treatment or management), hazardous substance treatment and management, waste disposal and recovery, resource recycling and waste disposal, resource recycling (engineering or management), soil remediation, and soil</p> |

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|     |                              | <p data-bbox="628 253 1091 286">pollution (prevention or mitigation)</p> <p data-bbox="576 300 1406 622">(7) Environmental analysis and experiment: water and wastewater analysis, water analysis, water quality analysis (experiment), environmental (pollutant) analysis, pollution monitoring and analysis, environmental chemistry experiment, environmental engineering experiment, environmental engineering unit operation experiment, and air pollutant (sampling) analysis.</p> <p data-bbox="576 636 1406 1093">II. Having graduated from a department, division, graduate institute, or degree program in fields related to environmental engineering at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education. The required courses provided by the department, division, graduate institute, or degree program must comply with Subparagraph 1 and must have been approved and announced as eligible by the MOEX.</p> <p data-bbox="576 1106 1406 1189">III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 7.  | Urban Planning Engineer Exam | <p data-bbox="576 1211 1406 1294">To qualify for the exam, candidates must meet any of the following:</p> <p data-bbox="576 1308 1406 1675">I. Having graduated from a department, division, graduate institute, or a degree program in urban planning, architecture and urban planning, architecture and urban design, or urban planning and landscape architecture at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p data-bbox="576 1688 1406 2009">II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: urban planning or urban and regional planning; regional</p>  |

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|     |                          | <p>planning, introduction to regional planning, regional planning theory and practice, or territorial and regional planning; site planning; urban design or urban design and urban development; urban sociology; urban economics, city economics, land economics, or urban economy and land market; urban development history or city history; surveying, land survey, or cadastral surveying; graphics, cartography, graphics and perspective, or graphics and cartography; urban planning regulations, urban planning regulations and system, or regional and urban planning regulations; introduction to environmental engineering; urban traffic plan, urban traffic, urban transportation planning, or urban traffic and transportation; urban land use planning, land use planning and control, or land use and public facility planning; landscape design or landscape architecture; community planning; housing issues or housing issues and planning; urban regeneration or new town construction and urban regeneration; operation research; public facility planning; urban analysis method or plan analysis method; urban and regional information system, geography information system, or geography information system APP; environmental planning and design, environmental planning and management, or environmental planning for sites; and urban engineering. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include urban planning, urban planning regulations, and urban land use planning. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 8.  | Mechanical Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in mechanical engineering at a public or registered private junior college or higher</p>  |

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|     |  | <p>educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least six of the following courses: engineering mechanics, applied mechanics, or mechanics of materials; fluid mechanics, aerodynamics, or engineering fluid mechanics; thermodynamics or heat transfer; mechanism; heat engine or internal combustion engine; tools, tool design, moulds, cutting, or machining; turbine, marine engineering, combustion gas turbine, or engine and turbine; machine building, casting, machine factory internship, or welding engineering; heat treatment; plastic working; fluid machinery; mechanical materials or engineering materials; machine design, machine design principles, machine design practice, or mechanical drawing; automatic control, numerical control machine, system dynamics and control, linear control system, or introduction to control system; pneumatics and hydraulics; machinery dynamics or vibration; electrical engineering or electronic engineering principles; refrigeration and air conditioning; and mechanical engineering. Each course may count for a maximum of three credits and a total of at least 18 credits must be completed. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 9.  | Refrigeration and Air-Conditioning Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in refrigeration and air conditioning engineering at a public or registered private junior college or higher educational institution, or a foreign</p>  |

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|     |               | <p>junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least five of the following courses: refrigeration and air conditioning, refrigeration and air conditioning principles, refrigeration and air conditioning engineering, or refrigeration and air conditioning system design; thermodynamics, heat power and transfer for refrigeration and air conditioning, or engineering thermo dynamics; heat engine; machine building or production; fluid machinery; machine design; automatic control, control engineering, or motor control; pneumatics and hydraulics; electrical engineering or electronic engineering principles; industrial power distribution; power electronics; mechanical materials or engineering materials; thermal engineering; noise and vibration; refrigeration engineering; air conditioning engineering; environmental engineering or environmental air conditioning engineering; heat transfer or heat transfer engineering; water supply and drainage facility; ventilation engineering; electromechanical safety; automatic control for refrigeration and air-conditioning; refrigeration engineering and design; air conditioning engineering and design; refrigeration and air conditioning facility and system repair; fluid mechanics; cleanroom design or cleanroom A/C design; food freezing science or food refrigeration; and transportation refrigeration and air conditioning. Each course may count for a maximum of three credits and a total of at least 15 credits must be completed. The required five courses must include at least three of the following: refrigeration and air conditioning (principles), thermodynamics, fluid mechanics, refrigeration engineering and design, and air conditioning engineering and design. Documents proving the completion</p> |

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|     |                                  | <p>of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>  |
| 10. | Naval Architecture Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in shipbuilding engineering, system engineering and ship building, shipping building and ocean engineering, or ship building and ship machinery at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: shipbuilding theory; buoyancy and stability; engineering mechanics, applied mechanics, or mechanics of materials; fluid mechanics; structure principles; thermal engineering; marine engineering; propulsion system; ship structure; ship vibration; vibration; welding engineering; ocean engineering; marine electricity; ship resistance and propulsion; ship outfit; ship maneuver and handling; hull form calculation and drawing; marine auxiliary machinery; shipbuilding design; theory of ship structure; and control engineering. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include shipbuilding design, theory of ship structure, marine electricity, and marine engineering. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 11. | Electrical Engineer              | To qualify for the exam, candidates must meet any of the  |

| No. | Exam Category          | Eligibility Requirements   |
|-----|------------------------|--|
|     | Exam                   | <p>following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in electrical engineering at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: circuitry; electronics; electromagnetism; electronic instrumentation; electric machinery; electrical engineering design; control system, power control system, or automatic control system; control engineering; electronic engineering materials; power generation; power plant facility; power system; electronic engineering principles or electrical engineering; automatic control; computer engineering, introduction to computers, or introduction to electronic computer; linear system or linear systematic analysis; high voltage engineering; transmission and distribution; electronic engineering mathematics; industrial power distribution or transmission and distribution; power electronics; and engineering mathematics. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include circuitry, power system or transmission and distribution, electric machinery, control system, and electronics. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 12. | Electric Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate</p>  |

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|     |                           | <p>institute, or a degree program in electronic engineering or electronic technology at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: electronics; circuitry; electromagnetism; electromagnetic wave; microwave engineering; communication system, introduction to communication, digital communication, or signal and system; communication engineering; electronic instruments; control system, electric control system, or control engineering; digital communication; digital system; logic design; communication electronics; IC; electronic circuit; electronic computer theory; engineering mathematics; microcomputer principles and applications; semiconductor engineering; optoelectronics; fiber-optic communication; communication network; and radio circuit. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include electronics, circuitry, electromagnetism, and communication system. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 13. | Information Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in information engineering, information science, information management, electronic computer, or computer science at a public or registered private junior college or higher educational institution, or a</p>  |

| No. | Exam Category              | Eligibility Requirements  |
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|     |                            | <p>foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: introduction to computers, introduction to electronic computers, or computer engineering; information structure; algorithm or introduction to computers algorithm; programming language structure; discrete mathematics; automat and formal language; computer organization and assembly language; system program; operation system; computer structure; logic design and exchange principles; digital electronics; database system and design; computer network, computer communication network, or computer network and communication; numerical method or numerical value analysis; AI; data processing or electronic data processing; systematic analysis and design; software engineering or introduction to software engineering; probability and statistics, applied statistics, or mathematical statistics; compiler program and design; and information management system, management information system, or information management. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 14. | Aeronautical Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in aerospace engineering, aeronautical engineering, aircraft engineering, mechanical engineering (aeronautical engineering/technology), or aeromechanics at a public or registered private junior</p>  |

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|     |                        | <p>college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: engineering mechanics, applied mechanics, mechanics of materials, fluid mechanics, thermodynamics, flight mechanics, aircraft design, introduction to aircraft structures, aerodynamics, jet propulsion, flight instruments, avionics system, rotaplane theory, airplane performance, aircraft manufacturing, aerospace engineering lab, aeroelasticity aircraft engine science, mechanical vibration, aircraft materials, machine design, automatic control, and navigation. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. Documents proving the completion of the courses and credits granted are required. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 15. | Chemical Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in chemical engineering at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses:</p>  |

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|     |                          | <p>organic chemistry or organometallic chemistry; general chemistry; analytical chemistry, instrument analysis, or qualitative and quantitative analysis; physical chemistry; material and energy balance, mass-energy calculation, or biochemical calculation; unit operation, transport phenomena and unit operation, biochemical principles, or biochemical machinery; element method or unit process; process control; chemicals; device design; process design; chemical industry procedures or industrial chemistry; biochemical thermodynamics; biochemical dynamics, reactor design, or reaction engineering; electro-chemistry; petrochemical industry; industrial catalyst; transport phenomena; polymer engineering or polymer processing; and polymer science, polymer chemistry, polymer physics, or polymer theories. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include organic chemistry, analytical chemistry (instrument analysis or qualitative and quantitative analysis), physical chemistry, and unit operation (transport phenomena and unit operation, biochemical principles, or biochemical machinery). Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 16. | Industrial Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in industrial engineering, industrial engineering and management, industrial engineering and engineering management, or industrial management at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public</p>  |

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|     |                                 | <p>or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: industrial engineering management, statistics, computer programming or introduction to computers, work study, quality control or quality management, production control or production management, human factors, ergonomics, industrial safety, manufacturing processes, systematic analysis, industrial psychology or psychology, industrial organization and management, engineering materials or mechanical materials, accounting of industrial enterprises or accounting, operation research, factory design and layout, industrial automation, management information system, material management or logistics management, engineering economics, facility planning, automated production system, production planning and control, engineering statistics, and HR management. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 17. | Industrial Safety Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in industrial safety and health, occupational safety and health, environmental and safety and health engineering, industrial chemistry and hazard prevention and control, industrial engineering, industrial engineering and management, industrial engineering and engineering management, or industrial management at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate</p>  |

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|     |                             | <p>institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least six of the following courses: industrial safety; risk and hazard assessment or risk assessment or hazard assessment; machine building or machine processing method; industrial sanitation; engineering materials or mechanical materials; electrical engineering; chemical engineering; thermal engineering, thermodynamics introduction, or engineering thermodynamics; engineering mechanics, applied mechanics, or mechanics of materials; automatic control, process control, or control system; occupational safety; regulations on labor safety and health or regulations on industrial safety and health; human factors or ergonomics; industrial management or production and operation management; facility planning; factory layout; and statistics, industrial statistics, engineering statistics, biostatistics, statistics analysis, or probability and statistics. Each course may count for a maximum of three credits and a total of at least 18 credits must be completed. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 18. | Occupational Hygienist Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in industrial safety and health, occupational safety and health, occupational medicine and industrial sanitation, industrial chemistry and hazard prevention and control, environmental and safety and health engineering, environmental and safety engineering, occupational health, industrial sanitation, environmental medicine, environmental sanitation at a public or registered private junior college or higher</p>   |

| No. | Exam Category | Eligibility Requirements   |
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|     |               | <p>educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least one course for each of the following four fields for a total of six courses and more. Each course may count for a maximum of three credits and a total of at least 18 credits must be completed. The required six courses must include hazard identification or occupational sanitation (in factories or at mines); (physical or chemical) operation environmental assessment (monitoring) or exposure assessment; mine ventilation and drainage (factory ventilation or mine ventilation) or workplace environmental control engineering; industrial (occupational) sanitation management, industrial (occupational) safety and health management, (safety) sanitation management practice, regulations on industrial (safety) health, regulations on labor (safety) health, or regulations on occupational (safety) health. Documents proving the completion of the courses and credits granted are required.</p> <p>(1) Hazard identification: hazard identification; environmental toxicology or introduction to environmental and occupational toxicology; mine sanitation; environmental sanitation or environmental sanitation theories; occupational safety; labor sanitation; industrial (occupational) sanitation; introduction to industrial (occupational) safety or introduction to industrial (occupational) sanitation; labor physiology; noise and vibration; industrial (occupational) toxicology or industrial (occupational) and environmental toxicants; factory and mine sanitation; semiconductor occupational health or</p> |

| No. | Exam Category | Eligibility Requirements   |
|-----|---------------|--|
|     |               | <p>semiconductor processing safety; disposition of particles in the respiratory system; occupational safety and health in hospitals; introduction to occupational diseases, environmental diseases introduction, introduction to occupational diseases and prevention, environmental diseases, or introduction to occupational diseases.</p> <p>(2) Exposure assessment: occupational health risk assessment; health risk assessment or health risk assessment practice; (physical or chemical) operation environmental assessment (monitoring); radiation safety; ergonomics or human factors; dust detection and control; risk and hazard assessment, risk assessment, or hazard assessment; biological risk assessment; biological exposure monitoring, biological monitoring, or biological monitoring (including lab); exposure assessment; aerosol science, industrial and occupational sanitation aerosol science, or aerosol technology; and aerosol instrument analysis .</p> <p>(3) Control engineering: noise control or noise and vibration control; physical (chemical, biological or human-factor) hazard control; mine ventilation and drainage, factory ventilation, or mine ventilation; and workplace environmental control engineering.</p> <p>(4) Occupational health management: health management or health promotion; occupational safety and accident prevention; industrial safety engineering; mining engineering; regulations on the mining industry; industrial (occupational) psychology or psychology of behavior; mine accidents and rescue or occupational catastrophe and rescue; regulations on industrial (safety) health, regulations on labor (safety) health, or regulations on occupational (safety) health; industrial engineering or engineering principles; industrial (occupational) safety or industrial (occupational) safety management; industrial (safety) health management or occupational (safety) sanitation management; factory</p> |

| No. | Exam Category         | Eligibility Requirements  |
|-----|-----------------------|---|
|     |                       | <p>practice inspection or labor inspection practice; first-aid regulations; public sanitation regulations; (safety) sanitation management practice; industrial (occupational) sanitation seminars, industrial (occupational) safety seminars, or safety and health seminars; hazardous substance management strategies; and national standard accreditation.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>   |
| 19. | Textile Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in textile engineering, textile technology, printing chemistry, fiber chemistry, fiber engineering, chemical engineering, textiles and apparel manufacturing, clothing engineering, fashion design, textile science, materials and fiber technology, materials and fiber, applied fiber fashion and design, applied fiber materials, fiber and polymer, organic polymer, fiber and compound materials at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: textile physics or fiber physics; textile chemistry or fiber chemistry; textile materials, fiber materials, or textile fiber; artificial fiber; textile inspection; artificial fiber synthesis; silk spinning; serittrio processing; cotton spinning or short-staple spinning; wool spinning or long-staple spinning; machine spinning or weaving; knitting; woven fabric structure and analysis; mechanism; refining and bleaching; dyeing; printing; textile finish; apparel</p> |

| No. | Exam Category          | Eligibility Requirements  |
|-----|------------------------|---|
|     |                        | <p>manufacturing; machine preparedness; chromatics; organic chemistry; analytical chemistry or qualitative and quantitative analysis; air pollution; water pollution prevention; polymer chemistry; engineering mechanics, applied mechanics, or mechanics of materials; machine design, machinery principles, or mechanical drawing; automatic control; statistics; quality control; industrial economics; textile goods inspections; textile materials, physical and chemical properties of textile fiber, or synthetic fiber production; textile engineering; weaving engineering, weaving engineering, or knitting and non-woven fabric engineering; dyeing process, refining and bleaching engineering, or dyeing and printing engineering; textile finishing or finish processing; introduction to materials; material coloring; instrument analysis; interface science; polymer physics; dyeing/finishing process; textile processing; physical chemistry; dyeing finish processing; fiber manufacturing and applications; yarn formation; textile formation; textile design and analysis; textile management or textile operation management; textile industry management; textile performance assessment; yarning; yarn science; and fabric science. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include textile (fiber) physics, textile (fiber) chemistry, textile materials (fiber materials or textile fiber), and textile inspection. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 20. | Food Technologist Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having</p>  |

| No. | Exam Category | Eligibility Requirements   |
|-----|---------------|--|
|     |               | <p>taken at least one course for each of the following seven fields. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include food processing (including lab or internship), food chemistry, food analysis (including lab or internship), and food microbiology (including lab or internship). Documents proving the completion of the courses and credits granted are required. Documents proving the completion of the courses and credits granted are required.</p> <ol style="list-style-type: none"> <li>(1) Food chemistry: Food chemistry, food biochemistry, biochemistry, and food additives.</li> <li>(2) Food analysis: food analysis (including lab or internship) and food instrument analysis.</li> <li>(3) Food microbiology: food microbiology (including lab or internship), food biotechnology, zymology, and applied microbiology.</li> <li>(4) Food processing: food processing(including lab or internship), agricultural manufacturing, dairy processing, meat processing, marine food processing, cereal processing, vegetable and fruit processing, and baking science.</li> <li>(5) Food sanitation: food quality control, food sanitation and safety, food factory management, food sanitation regulations or food safety and health management regulations, and food safety control system.</li> <li>(6) Food engineering: food freezing science, food engineering, food drying, food dehydration, food machinery, biostatistics, and food unit operation.</li> <li>(7) Food nutrition: nutrition chemistry, nutrition, bromatology principles, and nutrition biochemistry.</li> </ol> <p>II. Having graduated from a department, division, graduate institute, or a degree program in relevant fields at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education. The required courses provided by the department, division,</p> |

| No. | Exam Category               | Eligibility Requirements   |
|-----|-----------------------------|--|
|     |                             | <p>graduate institute, or degree program must comply with Subparagraph 1 and must have been approved and announced as eligible by the MOEX.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>   |
| 21. | Metallurgical Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in metallurgy and materials, material engineering, material science, and material and resource engineering at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having having taken at least six of the following courses: metallography; metallurgy thermodynamics, material thermodynamics, or thermodynamics; ferrous metallurgy; non-ferrous metallurgy; metallic material science; electro-chemical metallurgy, electro-chemistry, or corrosion; casting; physical metallurgy; mechanic metallurgy; heat treatment of metal or heat treatment; powder metallurgy; extractive metallurgy; material tests; fire-resistant materials; metal analytical chemistry or analytical chemistry; material science; metalworking; manufacturing process; and material analysis technology. Each course may count for a maximum of three credits and a total of at least 18 credits must be completed. The required six courses must include metallurgy thermodynamics (material thermo dynamics, thermodynamics), and physical metallurgy. Documents proving the completion of the courses and credits granted are required.</p> |

| No. | Exam Category                   | Eligibility Requirements   |
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|     |                                 | <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>   |
| 22. | Agronomist Exam                 | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in agronomy or plant production science at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least five of the following courses: introduction to agriculture; general botany; plant physiology; introduction to crop production; crop science; edible crop science; special crop science; crop physiology; genetics; cytology; crop breeding, plant breeding, or genetics and breeding; biostatistics; statistics; experimental design; soil science or soil and fertilizer; plant nutrition, crop nutrition, or plant nutrition and fertilizers; plant pathology; agricultural entomology; agricultural meteorology or meteorology; introduction to agricultural hydraulics; agricultural machinery; general entomology; and plant disease and pest control, plant disease pest control, pest control, or crop protection. Each course may count for a maximum of three credits and a total of at least 14 credits must be completed. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 23. | Horticultural Technologist Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in horticulture or plant</p>  |

| No. | Exam Category              | Eligibility Requirements  |
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|     |                            | <p>production science at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least six of the following courses: introduction to agriculture; botany or general botany; soil science or soil and fertilizer; ornamental plant taxonomy or plant taxonomy; ornamental plant physiology or plant physiology; horticultural crop breeding; horticulture principles, horticulture, or horticulturist crop science; horticulturist technologies or vegetation principles; plant breeding; genetics; pomology; evergreen fruit tree or pomology; deciduous fruit tree; citrus fruits; olericulture; study of flowers; ornamental tree or ornamental botany; postharvest handling of horticultural products; horticultural crops processing or horticultural product utilization; horticultural product analysis; landscape gardening sketch or delineation; application of auxins or plant growth regulators; landscape gardening design, landscape design, or garden design; and veggie plantation. Each course may count for a maximum of three credits and a total of at least 18 credits must be completed. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 24. | Forestry Technologist Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in forestry, forest resource management, forest resource management technology, forest resource technology, timber industry, timber utilization, timber processing, timber science, forest</p>   |

| No. | Exam Category | Eligibility Requirements   |
|-----|---------------|--|
|     |               | <p>science, or forest industry at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education. and having taken at least five of the following courses: general botany or botany; forest soil science; forest biostatistics or biostatistics; tree physiology; forest ecology; dendrology, plant taxonomy, plant anatomy, or plant morphology; silviculture, silviculture principles, silviculture applications, or silviculture theories; forest genetics; tree breeding; forest protection or forest entomology and pathology; forest breeding or forest nutrition; forest survey, forest resource survey, aerial survey, or remote sensing; water and soil conservation; forest evaluation; forest economy, timber market, or timber trade; forest recreation; watershed management, catchment hydrology, or catchment meteorology; forest regulation or forest management plan and control; forest policy, forestry management, or forestry regulations; logging or timber harvesting; forest utilization or forest by-product; wood quality study, wood structure, or wood identification; wood physics; timber processing or wood drying and storage; forestry production or pulping process; forest engineering, forest road engineering, or sabo works; forest product chemistry, forest product adhesive, or forest production chemistry; and forest resources and conservation. Each course may count for a maximum of three credits and a total of at least 14 credits must be completed. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |

| No. | Exam Category               | Eligibility Requirements   |
|-----|-----------------------------|--|
| 25. | Livestock Technologist Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in veterinary science in husbandry, husbandry, animal industry, husbandry technology, or applied zoology at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: animal husbandry, introduction to animal industry, or introduction to animal husbandry; biochemistry; livestock anatomy and physiology; feed crop science; livestock genetics; animal product chemistry; animal feeding; utilization of livestock products; cow husbandry; pig husbandry; livestock breeding; poultry husbandry; livestock nutrition; beef cattle husbandry; study of sheep; animal industry management; animal farm management; meat processing; dairy processing; livestock statistics; and hygiene of livestock and poultry or veterinary medicine. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include livestock anatomy and physiology, livestock genetics or livestock breeding, animal feeding or livestock nutrition, animal industry management or livestock statistics, and hygiene of domestic animals and poultry (veterinary medicine). Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 26. | Fishing Technologist Exam   | <p>To qualify for the exam, candidates must meet any of the following:</p>   |

| No. | Exam Category                  | Eligibility Requirements   |
|-----|--------------------------------|--|
|     |                                | <p>I. Having graduated from a department, division, graduate institute, or a degree program in fishery, fisheries science, and environmental biology and fisheries science at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: aquaculture management, marine fishery resources, study on fishing gear, fishing ground study, seamanship, fishery regulations, ichthyology, marine biology, oceanography, fishing, fishing methodology, fishing machinery, fishery management, economics of fisheries, disposition of catch, introduction to fisheries, fishing instruments, marine ecology, fishing vessel study, oceanography and meteorology, invertebrate zoology, fishing ground study, aquatic microbiology, and food freezing science. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include marine fishery resources, study on fishing gear, fishing ground study, and fishing or fishing methodology. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 27. | Aquacultural Technologist Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in aquaculture at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate</p>  |

| No. | Exam Category                             | Eligibility Requirements   |
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|     |   | <p>institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: introduction to fisheries, marine fishery resources, physiology studies for aquaculture, living organisms as feed or food organism, marine biology, freshwater aquaculture, saltwater aquaculture, fish disease, ichthyology, water quality analysis, planktonic biology, aquaculture management, analytical chemistry, invertebrate zoology or marine invertebrate zoology, aquatic microbiology, aquatic plants, nutrition and feed science or aquaculture feed science, breeding technology, economics of aquaculture, fish diseases, water quality analysis, pond management, aquaculture, aquaculture farm design, artificial fish breeding, fish physiology, ecology or marine ecology, molecular biology, biotechnology, cage culture, fishery regulations, algology or marine algology, and marine pharmacology. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include introduction to fisheries, ecology, and aquaculture. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 28. | Soil and Water Conservation Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in water and soil conservation or water and soil conservation technology at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public</p>   |

| No. | Exam Category        | Eligibility Requirements  |
|-----|----------------------|---|
|     |                      | <p>or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: soil and water conservation engineering or water and soil conservation, fluid mechanics, channel hydraulics, meteorology or applied meteorology, hydrology, foundation engineering, environmentally friendly farming practices, vegetation engineering, surveying, watershed management, sabo works, engineering mechanics, theory of structure, soil mechanics, soil science, soil physics, flood control, soil erosion, slopeland irrigation and drainage, engineering geology, quantity survey or construction and assessment, collapsed area treatment or collapsed mountain control, and water resources engineering. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include soil and water conservation engineering, fluid mechanics, and hydrology. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 29. | Mining Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in mining engineering; mining and metallurgical engineering; mining, metallurgical and material engineering; mine and petroleum exploring engineering; resource engineering; and material and resource engineering at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational</p>  |

| No. | Exam Category                    | Eligibility Requirements  |
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|     |                                  | <p>institution recognized by the R.O.C. Ministry of Education and having taken at least five of the following courses: mine exploration, resource exploration, geophysical exploration, geochemical exploration, remote sensing, mining engineering, coal mining engineering, resource exploration, ore dressing, resource treatment, flotation, general geology, structural geology, ore deposit, mineralogy, petrology, petroleum engineering, natural gas engineering, mine ventilation drainage or mine ventilation, surveying, mine surveying, mine design, mine machinery, mine investigation and evaluation, regulations on the mining industry, regulations on mine safety, mine safety, and explosives and blasting or explosion safety. Each course may count for a maximum of three credits and a total of at least 15 credits must be completed. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |
| 30. | Applied Geological Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in applied geology, geology, geological science, and earth science at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least seven of the following courses: general geology or geology, structural geology, field geology, ore deposit, petrology, geophysics, geochemical exploration, petroleum geology, engineering geology, geomorphology, stratigraphy, paleogeology, seismology,</p>  |

| No. | Exam Category               | Eligibility Requirements  |
|-----|-----------------------------|---|
|     |                             | <p>geophysical exploration, geological survey, soil mechanics, rock mechanics, environmental geology, hydrogeology, economic geology, resource exploration, geochemistry, and geotechnics. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>  |
| 31. | Mining Safety Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in mining engineering; mining and metallurgical engineering; mining, metallurgical and material engineering; mine and petroleum exploring engineering; resource engineering; and material and resource engineering at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least five of the following courses: mining engineering, regulations on mining or regulations on labor safety and health, mine safety, geology, petrology, rock mechanics, industrial engineering, public nuisance prevention and control and environmental protection, electromechanical safety, mine ventilation and drainage or mine ventilation, mine ground design, explosives and blasting or explosion safety, mine accidents/disasters and response, mine sanitation, safety and health education and training, working environment monitoring, regulations on mine safety, and regulations on mine safety and health. Each course may count for a maximum of three credits and</p> |

| No. | Exam Category                | Eligibility Requirements   |
|-----|------------------------------|--|
|     |                              | <p>a total of at least 15 credits must be completed. The required five courses must include mine safety, mine accidents/disasters and response, and regulations on mine safety and health. Documents proving the completion of the courses and credits granted are required.</p> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p>  |
| 32. | Transportation Engineer Exam | <p>To qualify for the exam, candidates must meet any of the following:</p> <p>I. Having graduated from a department, division, graduate institute, or a degree program in transportation, communication and transportation, transportation management, transportation management science, transportation engineering and management, traffic engineering, transportation science, transportation science and management, transportation and warehousing operation, transportation technology and management, transportation technology and logistics management, and transportation and logistics management at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education.</p> <p>II. Having graduated from a department, division, graduate institute, or a degree program in a relevant field at a public or registered private junior college or higher educational institution, or a foreign junior college or higher educational institution recognized by the R.O.C. Ministry of Education and having taken at least one course for each of the following five fields for a total of seven courses or more. Each course may count for a maximum of three credits and a total of at least 20 credits must be completed. The required seven courses must include traffic engineering, transportation engineering, and (urban) transportation planning (or transportation planning and network). Documents proving the completion of the courses and credits granted are required.</p> <p>(A) Traffic engineering and design:</p> |

| No. | Exam Category | Eligibility Requirements   |
|-----|---------------|--|
|     |               | <ol style="list-style-type: none"> <li>1. Traffic engineering</li> <li>2. Traffic engineering and design</li> <li>3. Highway capacity and service quality analysis (or highway capacity analysis)</li> </ol> <p>(B) Research and analysis method:</p> <ol style="list-style-type: none"> <li>1. Research and analysis method (or research method or transportation research method)</li> <li>2. Network and logistics analysis(or network analysis and logistics, logistics management, or transportation (logistics) network analysis)</li> <li>3. (Engineering) statistics (or econometric analysis for transportation)</li> <li>4. Engineering economics.</li> <li>5. Operation research (or mathematical programming)</li> <li>6. Multi-criteria decision analysis (MCDA)</li> </ol> <p>(C) Transportation engineering:</p> <ol style="list-style-type: none"> <li>1. Transportation engineering.</li> <li>2. Transportation</li> <li>3. Highway geometric design (or highway facility geometric design, highway engineering, pavement design, or highway pavement design)</li> <li>4. Railway track engineering (or railway engineering, railway transportation (system), or mass rapid transit engineering (operation management))</li> <li>5. Air transportation (terminal) engineering (or airport planning and design, air transportation, or air transport management)</li> <li>6. Harbor management (or marine transportation)</li> </ol> <p>(D) Transportation planning:</p> <ol style="list-style-type: none"> <li>1. (Urban) transportation planning(or transportation planning and network)</li> <li>2. Transportation (system) management (or transportation systematic analysis, transportation demand analysis and prediction, or traffic network assignment and design)</li> <li>3. Transportation project assessment (or transportation project planning and assessment, transportation project</li> </ol> |

| No. | Exam Category | Eligibility Requirements   |
|-----|---------------|--|
|     |               | <p>assessment, logistics project assessment, or transportation environmental impact (analysis and appraisal)</p> <ol style="list-style-type: none"> <li>4. (Urban) mass transportation (system) (or public transportation)</li> <li>5. Urban (and regional) planning</li> </ol> <p>(E) Traffic safety and traffic control:</p> <ol style="list-style-type: none"> <li>1. Traffic safety (design and analysis) (or transportation safety (analysis))</li> <li>2. Accident reconstruction and cause analysis (or traffic accident analysis and investigation or traffic accident investigation and reconstruction techniques)</li> <li>3. Traffic control (design) (or traffic control and management)</li> <li>4. Vehicle traffic theory (and application) (or traffic theory)</li> <li>5. Smart transportation system (introduction)</li> <li>6. Traffic (system) simulation (or traffic signal control or urban traffic management)</li> </ol> <p>III. Having passed any Qualifying Examination for Senior Examinations in any equivalent category.</p> |