

PRELIMINARY SKILLED OCCUPATIONAL SHORTAGE LIST - PHILIPPINES

(AFTER INITIAL CONSULTATIONS)

DOLE SMALL GROUP FORUM – 12 DECEMBER 2012 &

CONSULTATION WITH PROFESSIONAL REGULATORY BOARDS & ACCREDITED PROFESSIONAL ORGANIZATIONS – 04 JANUARY 2013

OCCUPATION (+occupation code)	NATURE OF WORK	QUALIFICATIONS	SKILLS & COMPETENCIES	AFAS Service Industry Description & CPC Code	SUPPLY SOURCE	REMARKS/ COMMENTS/ ISSUES RAISED DURING IN THE INITIAL CONSULTATION
Professionals						
Accountant 241101	An Accountant applies principles of accounting to analyze financial information and prepare financial reports.	Most accountant positions require a level of skill commensurate with a bachelor degree in accounting or a related field. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification (ANZSCO Skill Level 1). Professional recognition through licensure by the Professional Regulation Commission (PRC) provides a distinct advantage in the job market. Should be accredited by the Board of Accountancy (BOA) if they sign financial statements for submission to SEC, BSP and Insurance Commission	<ul style="list-style-type: none"> ▪ Aptitude for mathematics ▪ Ability to analyze, compare, and interpret facts and figures quickly ▪ Excellent communication skills both verbally and in writing ▪ Practical knowledge of computers (basic accounting software packages) and their applications in accounting and internal auditing ▪ Strong interpersonal skills 	Accounting & Auditing Services CPC 8621	PRC	
Auditor 241102	An Auditor examines and analyzes accounting records to determine financial status of establishment and prepare financial reports concerning operating procedures.	An Auditor position requires at least a bachelor's degree in accounting or a related field. Some employers prefer applicants with a master's degree in accounting, or with a master's degree in business administration with a concentration in accounting and auditing. (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> ▪ Aptitude for mathematics ▪ Ability to analyze, compare, and interpret facts and figures quickly ▪ Excellent communication skills both verbally and in writing ▪ Practical knowledge of computers (basic accounting software packages) and their applications in accounting and internal auditing ▪ Strong interpersonal skills. 	Accounting & Auditing Services CPC 8621	HEIs	
Electrical Engineer 215200	An Electrical Engineer designs, develops, tests and supervises the manufacture of electrical equipment. This includes power generating and transmission equipment used by electric	A five-year bachelor's degree in Electrical Engineering is the minimum academic requirement. The practice of profession requires a license from the PRC (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> ▪ Strong numerical skills ▪ Reading and oral comprehension ▪ Understand technical language and concepts ▪ Computer literate 	Engineering Services CPC 8672	HEIs PRC	

	utilities and electric motors, machinery controls and lighting and wiring in buildings, automobiles and aircraft. He/she also designs and participates in the operation of utilities for generating and distributing electric power. He/she is in charge of preparing cost estimates of activities involved in the construction and installation of power generation and transmission/transformation projects. Areas of specialization are power distribution equipment, electronics, integrated circuits, construction, electrical equipment and communications manufacturing.					
Financial Analyst 241104	A Financial Analyst provides analysis and guidance to businesses and individuals in making investment decisions. He/she gathers financial information, analyses it, and makes recommendations.	A bachelor's or graduate degree is required for a Financial Analyst and is strongly preferred for personal financial advisor. Most companies require financial analysts to have at least a bachelor's degree in finance, business administration, accounting, statistics, or economics. Coursework in statistics, economics and business is required, and knowledge of accounting policies and procedures, corporate budgeting, and financial analysis methods is recommended. A master's degree in finance or business administration is also desirable. Also useful are advanced courses in options pricing or bond valuation and knowledge of risk management. (ANZSCO Skill Level1).	<ul style="list-style-type: none"> Strong math, analytical, and problem-solving skills Good communication skills both orally and written Detail-oriented, motivated to seek out obscure information, and familiar with the workings of the economy, tax laws, and money markets Computer literate Ability to work with spreadsheets and statistical packages Ability to present financial concepts to clients in easy-to-understand language 	Financial Services Related to the Administration of Financial Markets CPC 8131 Financial Services Related to Securities Markets CPC 8132	HEIs	
Industrial Engineer 215800	An Industrial Engineer designs, develops, tests, and evaluates integrated systems for managing industrial production processes including human work factors, quality control, inventory control, logistics and material flow, cost analysis, and production coordination	A B.S. in Industrial Engineer (B.S.I.E.) is required to become an Industrial Engineer. In some cases, a master's degree would be required for a higher position as in department head or in management level. Currently, Industrial Engineering is not a regulated course and does not require a licensure from PRC in practicing the said profession (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> Creative, inquisitive, analytical and detail oriented Have a good aptitude in math, and physical science Ability to increase production through management of people Knowledgeable in various methods of business organization and technology Ability to develop management control systems to aid in financial planning and cost analysis, and design production planning and control systems to coordinate activities and ensure product quality 	Engineering Services CPC 8672	HEIs	
Mechanical Engineer	A Mechanical Engineer is a responsible charge of the preparation of mechanical	A five-year course leading to a bachelor degree in Mechanical Engineering is the minimum requirement.	<ul style="list-style-type: none"> Strong numerical skills Reading and oral comprehension 	Engineering Services	HEIs PRC	

215408	plans, designs, investigations, valuation, technical reports, specifications, project studies or estimates or to be in performance of other professional mechanical engineering activities such as construction, erection, installation, alteration or in the manufacture, sale supply or distribution of any mechanical works, plants, or plans. He/She can operate, tend or maintain or to be in-charge of the operation, tending or maintenance of any mechanical equipment, machinery process for any mechanical works, projects or plants. A Mechanical Engineer deals with the production and use of mechanical power. He/she designs, operates and uses all kinds of machines and machine tools. He/she likewise designs and builds engines that produce power from steam, gasoline and other sources which they try to develop to augment the sources of power.	A graduate must also pass the licensure examination given by the PRC. Graduate degrees are available and may be taken for advanced jobs, and are usually required for college teaching (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> Analytical skills Deductive reasoning Technology design Computer literate Good Solid understanding of key concepts including mechanics, kinematics, thermodynamics and energy 	CPC 8672		
Medical Technologists 222700	A Medical Technologist conducts medical laboratory tests, experiments and analyses to assist in the diagnosis, treatment and prevention of disease. They are employed in medical laboratories in hospitals, private clinics, research institutions and universities	Medical Technologists require a bachelor's degree in Medical Technology and must pass the board exam conducted by the PRC. The course of a Medical Technologist include general college courses with high emphasis in chemistry, biological sciences, mathematics and computer sciences plus all of the clinical courses that are practice areas for the profession which includes clinical chemistry, bacteriology, immunology, hematology, immunohematology, virology, parasitology, and mycology (ANZSCO Skill Level 2 - AQF Associate Degree, Advanced Diploma or Diploma)	<ul style="list-style-type: none"> A Medical Technologist must be knowledgeable in all of the laboratory procedures in areas such as clinical chemistry, microbiology, hematology, serology and urinalysis to help a physician identify a patient's disease and evaluate effective treatment. He/she should be able to use a wide array of intricate precision equipment for analyses such as microscopes, automatic analyzers, electronic counters, spectrophotometers and other sophisticated laboratory equipment 	Other Human Health Services CPC 9319	HEIs	
Metallurgical Engineer 215613	A Metallurgical Engineer extracts the desired minerals/metals from ores that have been mined, adapts/manufactures for end-users consumption. dug up . He/she employs mineral processing, hydro/pyro/electro metallurgical operations to process the ores.	A five-year BS in Metallurgical Engineering is the minimum educational requirement for a career in this field. A professional recognition through licensure by the PRC is also required before practicing the said profession (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> A good grasp of mathematics, chemistry and physics Able to communicate well orally, in writing and graphically Able to identify, analyze and solve problems Practical and creative 	Engineering Services CPC 8672	HEIs PRC	

	smelting, electrolysis, and distillation to process the ores. After extraction, the metals ores are refined, purified and adapted for manufacture. Some metallurgical engineers concern themselves solely with analysing and evaluating processing the metals to determine such properties as strength, hardness or stiffness.		<ul style="list-style-type: none"> ▪ Willing to adhere to the safety requirements of the operation ▪ Able to think and act decisively ▪ Able to prepare accurate results and reports 			
Respiratory Therapist	A respiratory therapists assess, treat, monitor, follow-up and care for patients with lung and heart disorders.	The basic educational requirement is a bachelor's degree in Respiratory Therapy. Practice of profession requires passing the board exam for respiratory therapists given by the PRC	<ul style="list-style-type: none"> ▪ Must be able to communicate effectively both verbally and in writing ▪ Works independently and as a member of the team, plans, organizes ▪ Conducts effective treatment plan, able to work under stressful conditions ▪ Able to relate well with patients, family members and health providers ▪ Must have a thorough knowledge of respiratory care modalities and equipments 			Shortage (1 st Board Exam by October 2013)
Craft and Related Trades Workers						
Chef 512221	A Chef plans and directs food preparation and cooking activities, and prepares and cooks meals and specialty foods.	There is no specific educational requirement for Chefs. However, most employers prefer to hire high school graduates, with course in commercial food preparation. It is recommended for those planning a career as a Chef to enrol in culinary courses offered by various culinary schools (ANZCO Skill Level 2)	<ul style="list-style-type: none"> ▪ Coordination ▪ Management of material resources ▪ Management of personnel resources ▪ Instructing ▪ Planning and implementation ▪ Oral comprehension ▪ Number facility ▪ 		HEIs TVET	
Plant and Machine Operators and Assemblers						
Crane and Tower Operator 833402	A Crane and Tower Operator uses machinery to move construction materials, earth, petroleum products, and other heavy materials. Generally, he/she moves materials over short distances—around construction sites, factories, or warehouses. Some move materials onto or off of trucks and ships. Operators control equipment by moving levers, wheels, or foot pedals; operating switches; or turning dials. He/she also may set up and inspect equipment, make adjustments, and perform minor	<p>Most crane operators have a level of skill commensurate with the qualifications of AQF Certificate II or III (ANZSCO Skill Level 4). At least one year of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification. Registration or licensing is required.</p> <p>Often material movers learn skills informally, on the job, from more experienced workers or their supervisors. Many employers prefer applicants with a high school diploma, but most simply require workers</p>	<ul style="list-style-type: none"> ▪ Coordination ▪ Can operate a variety of material moving equipment safely via hand signals, radio communication and using occupant safety devices ▪ Can perform pre-operational checks of equipment as well as basic maintenance on track or rubber tire undercarriage, buckets and attachments ▪ Knowledgeable site planning and set up ▪ Ability to acquire and use the 		TVET	

	maintenance or repairs.	to be physically and mentally able to perform the work.	knowledge of material moving fundamentals <ul style="list-style-type: none"> ▪ Possess basic Math skills for estimation of weight and distance 			
Heavy Equipment Operator 833203	A Heavy Equipment Operator operates heavy equipment such as backhoes, loaders, graders, dozers and excavators used in construction and maintenance of roads, bridges, airports, gas and oil pipelines, tunnels, buildings and other structures as well as surface mining and quarrying activities.	Most heavy equipment operators have a level of skill commensurate with the qualifications and experience outlined below.AQF Certificate II or III (ANZSCO Skill Level 4). At least one year of relevant experience may substitute for the formal qualifications. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification. Specialized training in heavy equipment operations and maintenance are very essential to heavy equipment operators.	<ul style="list-style-type: none"> ▪ Can operate a variety of heavy equipment safely via hand signals, radio communication and using occupant safety devices ▪ Can perform pre-operational checks of equipment as well as basic maintenance on track or rubber tire undercarriage, buckets and attachments ▪ Knowledgeable site planning and set up ▪ Ability to acquire and use the knowledge of earthmoving fundamentals (soil characteristics, ground conditions, map reading) 		TVET	
Machinist 821124	A Machinist sets up and operates tools to cut, shape and form metal stock and castings to exact sizes, using detailed drawings, CAD systems and specifications. He/She fixes machine metal components from single to complex forms, and makes machines and equipments that are used to produce goods such as food, clothes, steel products and cars	<p>Many entrants previously have worked as machine setters, operators, or tenders. In high school, students should take math courses, especially trigonometry and geometry and, if available, courses in blueprint reading, metalworking, and drafting. Some advanced positions, such as those in the aircraft manufacturing industry, require the use of advanced applied calculus and physics. Due to the increasing use of computer controlled machinery, basic computer skills are needed before entering a training program. After high school, some machinists learn entirely on the job, but most acquire their skills in a mix of classroom and on-the-job training. Formal apprenticeship programs, typically sponsored by government or manufacturer, are an excellent way to learn the job of machinist.</p> <p>Usual qualification is AQF Certificate III including at least two years of on-the-job training, or AQF Certificate IV (ANZSCO Skill Level 3)</p>	<ul style="list-style-type: none"> ▪ Must have a knowledge of the working properties of metals ▪ Good aptitude in mathematics, physics and chemistry ▪ Strong communication and analytical skills ▪ Must have basic knowledge of computers and electronics, and experience with machine tools 		TVET	

OCCUPATION (+ occupation code)	NATURE OF WORK	QUALIFICATIONS	SKILLS & COMPETENCIES	AFAS Service Industry Description & CPC Code	SUPPLY SOURCE	REMARKS/ COMMENTS/ ISSUES RAISED DURING IN THE INITIAL CONSULTATION
Doctor (General Practitioner) 222104 Shortage of Specialist	A Doctor (General Practitioner) provides primary and continuing medical care for patients. He/she takes account of physical, psychological and social factors when diagnosing an illness and recommends the required treatment. Patients may be referred to hospital clinics for further assessment and/or treatment. General Practitioners may run specialist clinics for patients with specific conditions. Doctors work alongside other healthcare professionals to discuss care options for patients and their families.	Before a candidate can be admitted to a medical school, he/she must earn a pre-med bachelors degree with credits in certain required subjects. The most common pre-medical degrees include biology, psychology, medical technology, pharmacy, nursing, and physical therapy. The M.D. (Doctor of Medicine) program is a four-year professional degree program dealing with medical theories, practices, technologies, and problem solving. The completion of the degree qualifies a candidate to take the licensure exam for medical doctors.	<ul style="list-style-type: none"> Ability to make decisions in emergencies Responsive to questions, concerns and fears of the patient Ability to provide emotional support for health care workers, patients and families 	Medical & Dental Services CPC 9312	HEIs PRC	<p>Removed but with shortage on "Specialists"</p> <p>66,000 professionals distributed in towns, cities, and capitals</p> <p>44,000 General Practitioners</p> <p>22,000 Specialists</p>
Geologist 211402 PRC Shortage of Specialist	<p>A Geologist studies the composition, structure and other physical attributes of the earth to increase scientific knowledge and to develop practical applications in fields such as mineral exploitation, civil engineering, environmental protection and rehabilitation of land after mining.</p> <p>A Geologist studies the origin, composition, structure and other physical attributes of the earth; conducts geological/geotechnical surveys & investigation, mineral and resource exploration, geo-hazard mapping & mitigation, etc.</p>	The minimum education required is a college degree in Geology. Pre-college students who are interested in becoming a geologist should take preparatory courses in earth science, biology, chemistry, physics and math. Courses related to environmental science, computers, geography and mapping are also valuable (ANZSCO Skill Level 1)	<ul style="list-style-type: none"> Should be analytical, curious and able to communicate effectively Ability to prepare accurate records and reports Analytical, able to communicate effectively (oral and written) and computer literate Able to prepare accurate compliant with Reporting Standards Specialist in Geology (i.e. Engineering, Petroleum, Mining, Environment, etc.) 	<p>Geological, Geophysical & Other Scientific Prospecting Services CPC 86754</p> <p>Geological, Geophysical & Other Scientific and Engineering Services CPC 86751</p>	HEIs PRC	Excluded during the December 12 consultation but suggested for inclusion in the January 4 consultation. Shortage of Geologists with specialization (i.e. petroleum, engineering, mining, environment, etc.)
Interior Designer Shortage of Specialist		<p>Registered Interior Designer</p> <p>At least 1 year of specialized training</p> <p>At least 2 years of work experience</p>	<p>Oral, written, and visual communication skills (manual and CADD)</p> <p>Ability to conceptualize and understand spatial relationships</p> <p>Strong organizational skills with attention</p>			<p>With suggested short-listed Occupations:</p> <ol style="list-style-type: none"> Kitchen and Bath Designer (residential and commercial) Lighting Designer

			<p>to details</p> <p>Managerial and supervisory skills</p> <p>Critical analysis and understanding (perceptual, functional, analytical, philosophical, psychological [cultural], wholistic [environmental and spiritual])</p>			<p>3. Museum Designer</p> <p>4. Advanced Renderer (manual and CADD)</p> <p>5. Project Manager/Quantity Surveyor for Interior Design</p> <p>6. Ergonomics Designer</p> <p>7. Heritage Conservationist</p>
<p>Chemist</p> <p>211302</p>	<p>A professional chemist is responsible for performing and certifying the accuracy and correctness of all types of molecular analysis (e.g. food & drugs, environmental samples, plastics & polymers, etc.) determination of molecular structure and molecular properties, product specifications; teaching of the professional subjects as mandated by the PRC Board of Chemistry.</p> <p>Recommendation: Basic research should not be included in the professional practice of chemistry.</p>	<p>Must have at least a masteral degree in chemistry or any allied field and five years experience in chemical laboratory work.</p>	<p>1. Adequate knowledge of chemical structure and quantitative chemical analysis.</p> <p>2. Knowledge of the basic principle and practices in inorganic, organic, analytical and physical chemistry.</p> <p>3. Ability to prepare scientifically accurate and complete reports.</p> <p>4. Ability to communicate effectively.</p> <p>5. Ability to perform necessary mathematical calculations.</p> <p>6. Updated information and skills in the professional chemistry subjects.</p>		<p>HEIs</p> <p>PRC</p> <p>Chemist</p>	<p>Shortage with advance academic preparation on chemistry subjects and on specialized training</p>
<p>Architect</p> <p>214100</p>	<p>An Architect is a licensed professional trained in the art and science of building design. He/she provides a wide variety of professional services to individuals and organizations planning a construction project.</p> <p>An Architect is a registered and licensed professional, academically qualified, trained in the art and science of planning, designing and constructing buildings in their totality taking into account their environment in accordance with the principles of utility, strength and beauty. He/she provides a wide variety of specialized professional and architectural consultancy services.</p>	<p>A professional degree in Architecture (a 5-year program) is the basic educational requirement. Prior to taking up the licensure examination for Architects, a period of practical training and internship is required. Graduates of Architecture have to pass the licensure examination conducted by the PRC before they can practice the profession or can provide architectural services. Although graduate education beyond the professional degree is not essential for practicing architecture, it is normally required for research, teaching and other specialized areas of architectural work. (ANZSCO Skill</p>	<ul style="list-style-type: none"> Ability to visually communicate ideas to clients Ability to conceptualize and understand spatial relationships Artistic and drawing ability Excellent communication (written & oral) skills Computer literacy – knowledge of computer-aided design and drafting (CADD) Strong organizational skills with attention to details Managerial & supervisory skills <ul style="list-style-type: none"> Ability to visually communicate ideas to clients Ability to conceptualize and understand 	<p>Architectural Services</p> <p>CPC 8671</p>	<p>HEIs</p> <p>PRC</p>	<p>With shortage on the following:</p> <p>Green Architects</p> <p>Urban Planners</p> <p>Heritage and Conservation Planners</p> <p>Construction Arbitrators</p> <p>Project and Construction Management</p>

		<p>Level 1)</p> <p>A baccalaureate degree in Architecture (a 5-year program) is the basic educational requirement. Prior to taking up the licensure examination for Architects conducted by the PRC, a minimum 2-years equivalent period of practical training and internship (diversified architectural experience) is required. Only PRC registered and licensed Architects (RLAs) can practice the profession or can provide architectural services. Graduate education and continuing professional education may be required for research, teaching and other specialized areas of architectural work. (ANZSCO Skill Level 1)</p>	<p>site development and building spatial relationships</p> <ul style="list-style-type: none"> ▪ Artistic, technical and drawing ability ▪ Excellent communication (written & oral) skills ▪ Computer literacy - knowledge of computer - aided design and drafting (CADD) ▪ Strong organizational skills with attention to details ▪ Managerial & supervisory skills <p>With expertise in any field of architectural practice such as project/construction management, site development planning, comprehensive planning, facilities planning and design, architectural documentation/research, building systems design, building evaluation, sustainable and energy-efficient design, heritage conservation and planning and other specialized architectural services.</p>			
Optometrists						Shortage (city distribution)
Radiologic Technologists						Shortage of Rad. Techs. With advanced skills (CT Scan, MRI, Mammography, UTZ)
Dentist						With 12,000 professionals in practice distributed in the cities, but with less than 300 specialists.
Shortage of Specialist						
Chemical Engineer 215501	Chemical engineer principally works in the industry, on research, design and engineering, managing installations and directing operations, process control, trouble shooting, environmental engineering and biochemical/biological engineering, planning, academe and in marketing and distribution channels. Basically, the chemical engineer in industry works to convert inorganic and organic materials as well as metallic ores into usable intermediate raw materials and products. In addition, the chemical	The basic educational requirement is a bachelor's degree in Chemical Engineering, a five year course. The practice of the profession requires passing the Board Examination for chemical engineers given by the Professional Regulation Commission. Completion of Continuing Professional Education (CPE) is required for renewal of the license. In addition, for qualification to join the ASEAN roster of professional engineers, at least 7	The chemical engineering field requires at the present time until 2015 and beyond are professors, teachers, lecturers from ASEAN, USA, Europe, Australia and other developed countries, to join the academe and give courses and lectures on the following areas of expertise in design and engineering: Molecular engineering, nuclear, biomedical engineering, metaphysical engineering, biological engineering, nuclear engineering, nano-engineering, environmental engineering particularly in climate change situations. Quantitative skills are needed in	Educational Services Professional and/or Short Courses Education Services	HEIs PRC PICHE	

	engineer, designs environmental, biochemical/biological, biometaphysical, and nano engineering processes.	years of design and engineering experience is required.	all of these areas.	(CPC 92400)		
Computer Programmer 213201	A Computer Programmer writes, modifies, integrates and test computer codes for microcomputer and mainframe software applications, data processing applications, opening and operating systems-level software, and communications software. Computer Programmers generally know more than one programming language. In practice, a Programmer is often referred to by the language he knows, such as Java Programmer, or by the type of function he performs or environment in which he works - for example, Database Programmers, Mainframe Programmers, or Web Programmers	A Computer Programmer must have a bachelor's degree in computer science or in another discipline with a significant computer programming content. At least five years of relevant experience and/or relevant vendor certification may substitute for the formal qualification. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> Computer Programmer must be familiar with the different computer languages that work with programming and web environment Cobol, Java, and C++ (primary computer languages) SQL, and XQuery (Query languages) HTML (Markup language which is typically used for producing documents) XSLT (Transformation language) Must have extensive knowledge of a variety of operating systems and be able to configure the system to work with different types of hardware 	Computer Programming Services CPC 8424	HEIs TVET	
Computer Systems Analyst 213104	A Computer Systems Analyst analyzes science, engineering, business and all other data processing problems for application to electronic data processing systems. He/she analyzes user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow and scheduling limitations. A Computer Systems Analyst may analyze or recommend commercially available software and may also supervise computer programmers.	Many employers require Computer System Analysts to have a level of skill commensurate with a bachelor degree or higher qualification. Some employers require an advanced degree for more-complex jobs and senior positions. At least five years of relevant experience and/or relevant vendor certification may substitute for the formal qualification. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> Knowledge of a specific computer system Strong analytical and problem-solving skills Good interpersonal and communication skills Knowledge of design techniques, tools, and principles involved in the production of precision technical plans, blue prints, drawings, and models Ability to identify complex problems and review related information to develop and evaluate options and implement solutions 	Computer Systems Analysis Services CPC 8422	HEIs	
Database Administrator 142611	A Database Administrator works with database software. He/she identifies user needs, sets up computer databases, and tests systems. He ensures that systems perform as they should and add people to the system as needed. Database administrators often	For database administrator positions, most employers seek applicants who have a level of skill commensurate with a bachelor degree or higher qualification in Computer Science, Information Science or Management Information	<ul style="list-style-type: none"> Must be able to think logically Good communication skills both orally and written Ability to apply general rules to specific problems to produce answers that make sense 	Data Base Services CPC 8440	HEIs	

	plan security measures. Data integrity, backup and security are critical parts of the job.	Systems (MIS). At least five years of relevant experience and/or relevant vendor certification may substitute for the formal qualification. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification (ANZSCO Skill Level 1).				
Network Engineer/ Network Administrator 213123	A Network Engineer or Network Administrator, devises, installs and maintains computer communication systems that make it possible for people within an organization to interact faster and more effectively. Among others, the system allows them to commune with each other, send files, resources and provide services	To be a Network Engineer/Network Administrator it is necessary to have a level of skill commensurate with a bachelor degree or higher qualification in the areas of Information Technology. At least five years of relevant experience and/or relevant vendor certification may substitute for the formal qualification. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> ▪ Possess a wide knowledge and understanding on installation and configuration of data/telecom network: CAT6 cabling, fiber optic, routers and switches ▪ Have an in-depth knowledge of Networking ▪ Good knowledge in the network platforms such as C/C++,Perl,TCL/TK, and background in SNMD,FREE BSD,JAVA and PHP is a plus ▪ Must have undergone and passed the CCNA (Cisco Certified Network Associate) training ▪ Must be an accredited Microsoft Certified System Engineer (MCSE) 	Consultancy Services Related to the Installation of Computer Hardware CPC 8410	HEIs TVET	
UNDER ECE 248906	A Systems Analyst figures out how to use computers to get things done. He/she tells businesses and other organizations which computers and software to buy, and decides how to get those tools to work together	Systems Analysts must have a college degree in Computer Science, Information Science, or Management Information Systems. Some analysts get college degrees in other subjects. Then, they take computer classes and get computer experience (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> ▪ Excellent knowledge in computer both software and hardware, namely: ▪ SQL, ▪ Visual Basic, C++ and Java ▪ Unified Modeling Language (UML) ▪ SAP business software applications ▪ Microsoft or Oracle Certification, ▪ Inventory software application ▪ Other software development skills ▪ Ability to think logically and analytically 	Systems Analysis Services CPC 8422	HEIs TVET	
Application Developer 213121	The job of an Application Developer involves writing specifications required in the applications and using programming computer languages and development tools to design, build, test, implement, and support applications.	To become an Application Developer requires a level of skill commensurate with a bachelor degree or higher qualification in the field of computer science, information systems or other relevant courses. At least five years of relevant experience and/or relevant vendor certification may substitute for the formal qualification.	<ul style="list-style-type: none"> ▪ A mid to high-level of experience in two or more of the following development languages: MSVisual Basic, .NET, ASP.NET, MS-Visual FoxPro, MS-SQL Server, MS-Access ▪ A strong understanding of object oriented languages and development methods ▪ A strong understanding of structured programming methods and data normalization concepts 	Systems Design Services CPC 8423	HEIs TVET	

		In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> Strong strategic and critical thinking skills Must have thorough and accurate research skills Good written communication skills 			
UNDER GEODETIC ENGR 215706	Surveyor is responsible for measuring and mapping the earth's surface. He/she provides data relevant to the shape, contour, gravitation, location, elevation, or dimension of land features on or near the earth's surface for engineering, map making, mining, land evaluation, construction and for other purposes such as the determination of property boundaries	The basic educational requirement is a diploma in Geodetic Engineering or a related field with subjects in surveying such as Civil Engineering and Forestry. One must pass the examinations conducted by the PPRC to become a licensed Surveyor (ANZSCO Skill Level 1).	<ul style="list-style-type: none"> Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications Knowledge of the practical application of engineering science and technology Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings and models Knowledge of the principles and methods for describing the features of land, sea, and air masses Good office skills to undertake research on old deeds and other legal papers, and prepare reports that document the results of research work Written and oral comprehension abilities Good communication skills Ability to work with precision and accuracy Computer literate 	Surface Surveying Services CPC 86752	PRC	

***Notes:**

- Occupations identified are a subset of 'hard-to-fill occupations' in KEGS and Emerging Industries based on the latest labor market signaling study of DOLE (2010), *Project JobsFit: The DOLE 2020 Vision Summary of Findings and Recommendations*, pp. 20-22.
- Where relevant information on qualifications was unavailable from Philippine sources, information on qualifications was sourced from Australia using their ANZSCO search facility and to some extent from Canada's *Working in Canada Tool*. Other information on qualifications was compiled by the BLE-LMI team.
- Information on skills and competencies was compiled by the BLE-LMI team and comes from a variety of internet sources.
- CPC codes can be found at: <http://unstats.un.org/unsd/statcom/doc02/cpc.pdf>
- Items highlighted are those occupations considered in the last deliberation meeting conducted last December 12, 2012 and January 4, 2013

MISSION CRITICAL SKILLS FOR INCLUSION IN THE SOSL-PHILIPPINES
(FOR CONSIDERATION/INCLUSION IN INITIAL SOSL)

OCCUPATION (+ occupation code)	NATURE OF WORK	QUALIFICATIONS	SKILLS & COMPETENCIES	AFAS Service Industry Description & CPC Code	SUPPLY SOURCE	REMARKS/ COMMENTS/ ISSUES RAISED DURING IN THE INITIAL CONSULTATION
Computer Numerically Controlled (CNC) Machinist 7223	A CNC Machinist produces a variety of complex-level parts in strict compliance to set quality, cost, delivery, safety, environment, and service specifications. He/she works on metallurgical properties of materials and performs complete range of metal working operations from cutting to finishing using CNC machines.	At least a 3-year diploma in mechanical technology major in machine shop practice or equivalent combination of Engineering education, TechVoc training (six months general machine shop) and machining work experience is the minimum requirement.	<ul style="list-style-type: none"> Knowledgeable in geometric dimensions and tolerances; metrology including Coordinate Measuring Machine (CMM); tribology, tooling and fixturing Can understand statistical process control (SPC), trouble-shooting, continuous improvement, and lean manufacturing 		TVET	
Assembly Technician <ul style="list-style-type: none"> Servo-valve Servo-actuator 3145	An Assembly Technician (senior) assembles and trouble shoots a variety of complex level of aviation type servo-valves or servo-actuators in strict compliance to aeronautical aerospace engineering standards of product reliability and quality, as well as company specifications on cost, delivery, safety, environment, and service. He/she performs product development prototyping and does repair and overhaul of aftermarket units.	At least a 3-year diploma in mechanical technology, mechatronics, instrumentation, electronics, electrical major or equivalent combination of Engineering education, TechVoc training (six months in electro-mechanics, hydraulics, or pneumatics) and precision assembly work experience is the minimum requirement.	<ul style="list-style-type: none"> Knowledgeable in blue print reading, physics of hydraulics and pneumatics, metrology, and civil aviation regulations Can perform complete range of assembly operations from sub assembly, tie wiring, crimping and soldering, in- process testing, to diagnostics and corrections Can understand SPC, trouble-shooting and repair, clean room environment, continuous improvement, and lean manufacturing 		TVET	
Test Technician <ul style="list-style-type: none"> Servo-valve Servo actuator 3145	A Test Technician (senior) tests and certifies the performance of a variety of complex level aviation type servo-valves or servo-actuators in strict compliance to aeronautical aerospace engineering standards of product reliability and quality, as well as company specifications on cost, delivery, safety, environment, and service. He/she sets up test rigs and measuring instruments and performs product development prototyping. He/she also diagnoses and trouble shoots test failures and performs aftermarket repair and overhaul of units.	At least a 3-year diploma in mechanical technology, mechatronics, instrumentation, electronics, electrical major or equivalent combination of Engineering education, TechVoc training (six months in electro-mechanics, hydraulics, or pneumatics) plus 4 to 5 years of work experience as junior technician is the minimum requirement.	<ul style="list-style-type: none"> Knowledgeable in blue print reading, physics of hydraulics and pneumatics, metrology, and civil aviation regulations Can perform complete range of assembly operations from sub assembly, tie wiring, crimping and soldering, in- process testing, to diagnostics and corrections Can understand SPC, trouble-shooting and repair, clean room environment, continuous improvement, and lean manufacturing 		TVET	

Pilot 3143	A pilot flies aircraft of all sizes, transporting passengers and cargo across the state and around the world. He/she is responsible for the safety of the airplane, its passengers, the crew, and any cargo on board. He/she conducts pre-flight check on maintenance status of aircraft (i.e. fuel requirements, flight controls, instruments, and aircraft engines) and operates radio equipment to contact control tower for takeoff, clearance, and arrival instructions.	<p>A Bachelor of Science (BS) in Aeronautical Engineering, Air Transportation, Aircraft Maintenance Technology, or Avionics Technology a diploma in aviation related program and certification in flight training course is the minimum academic requirement.</p> <p>A pilot is required to have a license from the Civil Aviation Authority of the Philippines (CAAP) before he/she can perform his/her duties.</p> <p>To qualify as a commercial airline pilot, one must be at least 18 years old; physically fit enough to pass a second class medical examination administered by the CAAP approved flight medical examiner; meet the minimum flight experience of 150 hours; must enrol in the CAAP approved ground courses and pass the written and oral exams as well as the practical CAAP flight test.</p>	<ul style="list-style-type: none"> ▪ Must possess cognitive and social skills specifically situational awareness, communication skills, coordination, planning, problem solving, and decision-making ▪ Knowledgeable in aircraft operation systems, aeronautical navigation, meteorology, radio operation, air traffic communications, flight planning, aircraft weight and balance ▪ Has aeronautical aerospace engineering skills in aircraft instrument systems, engine system, airframe and mechanical systems, maintenance practices for pilot, avionics, and electrical systems 		CAAP	
Aircraft Mechanic 7232	An Aircraft Mechanic fits, services, repairs, and overhauls aircraft components, engines, accessories and related equipment. He/she analyzes test data to evaluate the condition of engine, aircraft and equipment. An aircraft mechanic compares the state of items such as fuel, oil levels and tire pressures, and the condition and cleanliness of mechanical equipment to required standards. He/she works close to tolerances, and uses precision measuring instruments and testing equipment to ensure adjustments and repairs are made according to manufacturer's specification standards.	<p>A 4-year BS in Aircraft Maintenance Technology or a 2-year Aircraft Technician course is the minimum academic requirement.</p> <p>An Aircraft Mechanics is required to have a license from the CAAP and a practicum or on-the-job experience in authorized aircraft maintenance or repair station.</p>	<ul style="list-style-type: none"> ▪ Ability to repair machines or systems using the needed tools, perform routine maintenance on equipment, and determine causes of operating errors ▪ Can identify complex problems and review related information to develop and evaluate options and implement solutions ▪ Knowledgeable of machines and tools including their designs, uses/applications, repair, and maintenance 		CAAP	

MCS or Mission Critical Skill refers to a skill or occupation which is considered core or absolutely necessary for the industry; the skill takes a long time to produce/replenish, and is not easily replaced and therefore, considered as hard-to-fill.