



DSD, MOHR

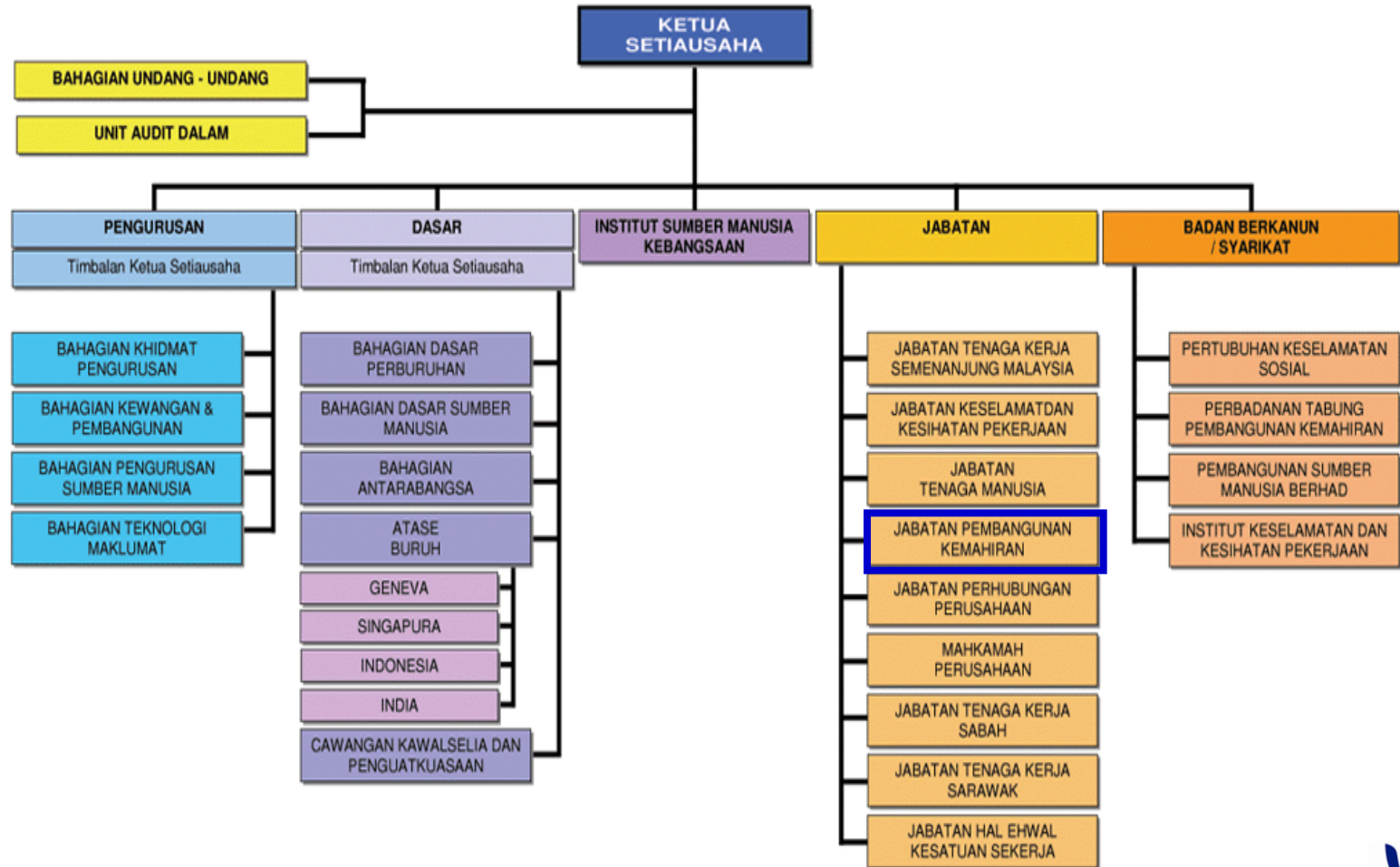
**NOSS : TOWARDS THE
DEVELOPMENT OF HIGH
INCOME NATION**

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MINISTRY ORGANIZATION CHART

KEMENTERIAN SUMBER MANUSIA
CARTA ORGANISASI
(Sedia Ada)



MINISTRY OF HUMAN RESOURCES (MOHR)



- **MISSION**

- TO DEVELOP HUMAN CAPITAL (K-WORKER) & EQUIP THEM WITH KNOWLEDGE, COMPETITIVENESS SKILLS AND ABILITY FOR GLOBAL MARKET REQUIREMENT & RECOGNITION.



- **VISION**

- TO BE A LEADER IN DEVELOPMENT OF WORLD CLASS SKILLED HUMAN RESOURCES

Globalization



**Fast Changing Technology &
Work Process**



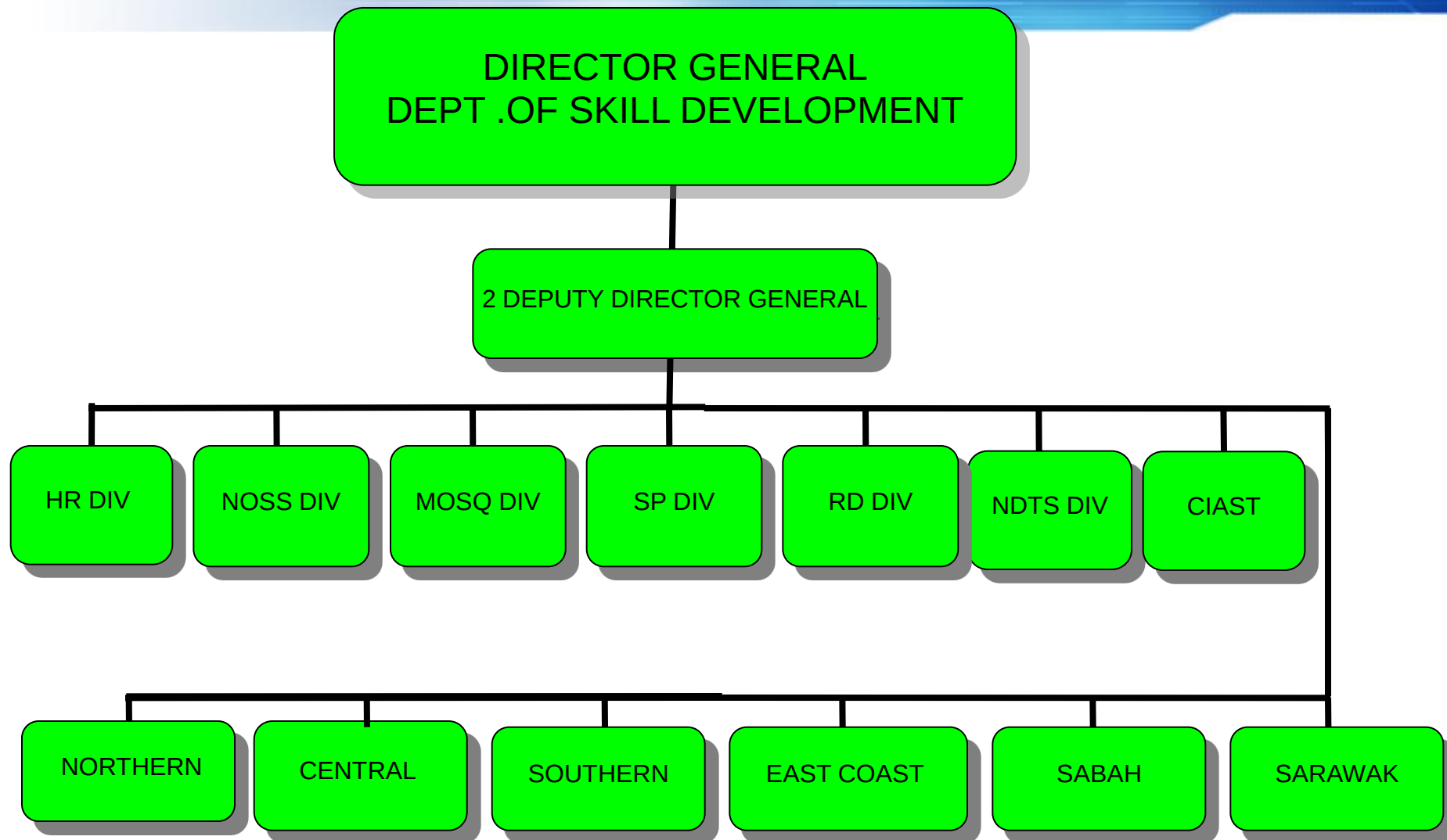
New Competencies

&

Qualifications



DSD ORGANIZATION CHART

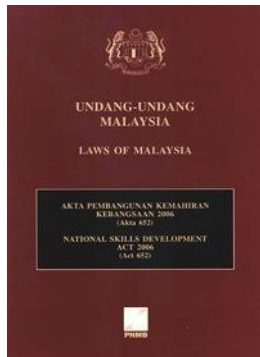


Introduction to DSD

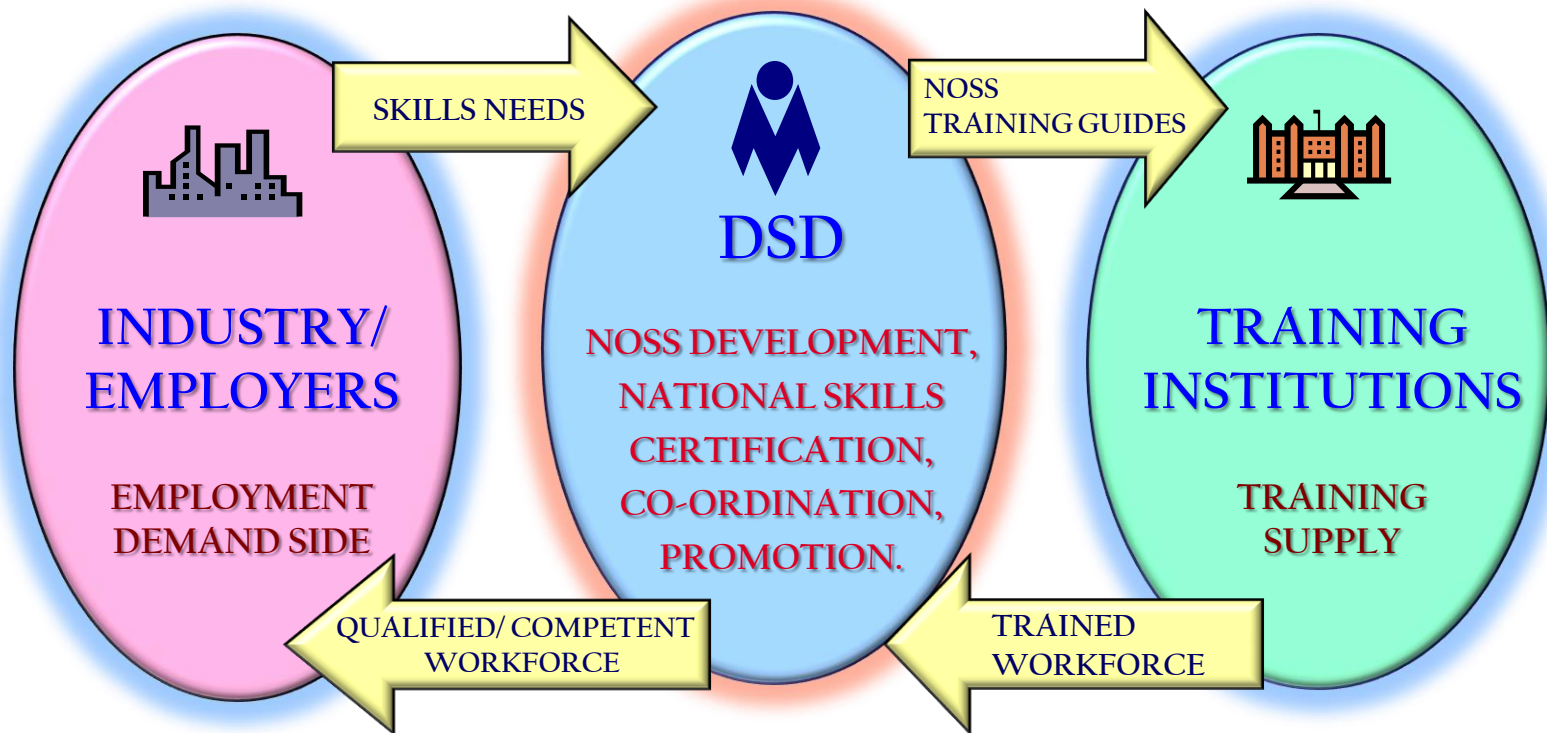


Jabatan Pembangunan
Kemahiran

- is responsible to **manage, coordinate** and **promote** skills training program and career development based on skills competencies.
- **DSD** is regulated under the **National Skills Development Act 2006 (Act 652)**
- DSD took over from;
 - **National Vocational Training Council (NVTC/MLVK) (1989 – 2006)**
 - **National Industrial Trade Training Certification Board (NITTCB/LLPPKK) (1971 – 1989)**



MAIN FUNCTIONS



DSD MAIN PROGRAMMES AND ACTIVITIES

Development of the National Occupational Skills Standards (NOSS);

Promotion & implementation of the Malaysian Skills Certification System;

Promotion of training & skills development;

Promotion & implementation of the National Dual Training System (NDTS);

Development of skills instructors/ trainers;

Study on training and skills development;

Verification & accreditation of training programmes

Recognition of national industry experts.

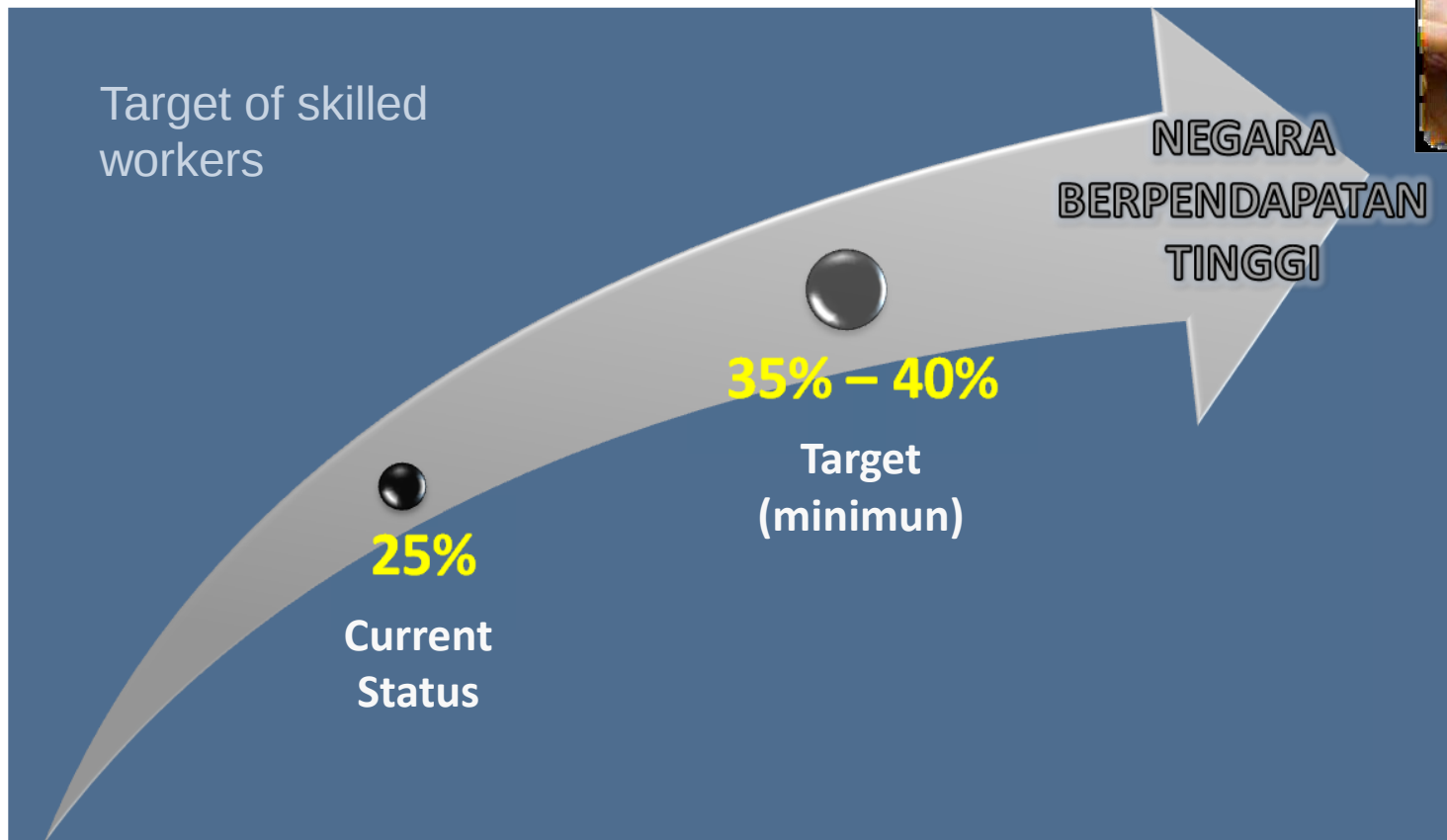
MAIN OBJECTIVES of SEMINAR

To identify industry requirements in NOSS development

To promote skill training for increase productivity and quality of services in an industry

To achieve a high income Nation by 2020

High Income Nation

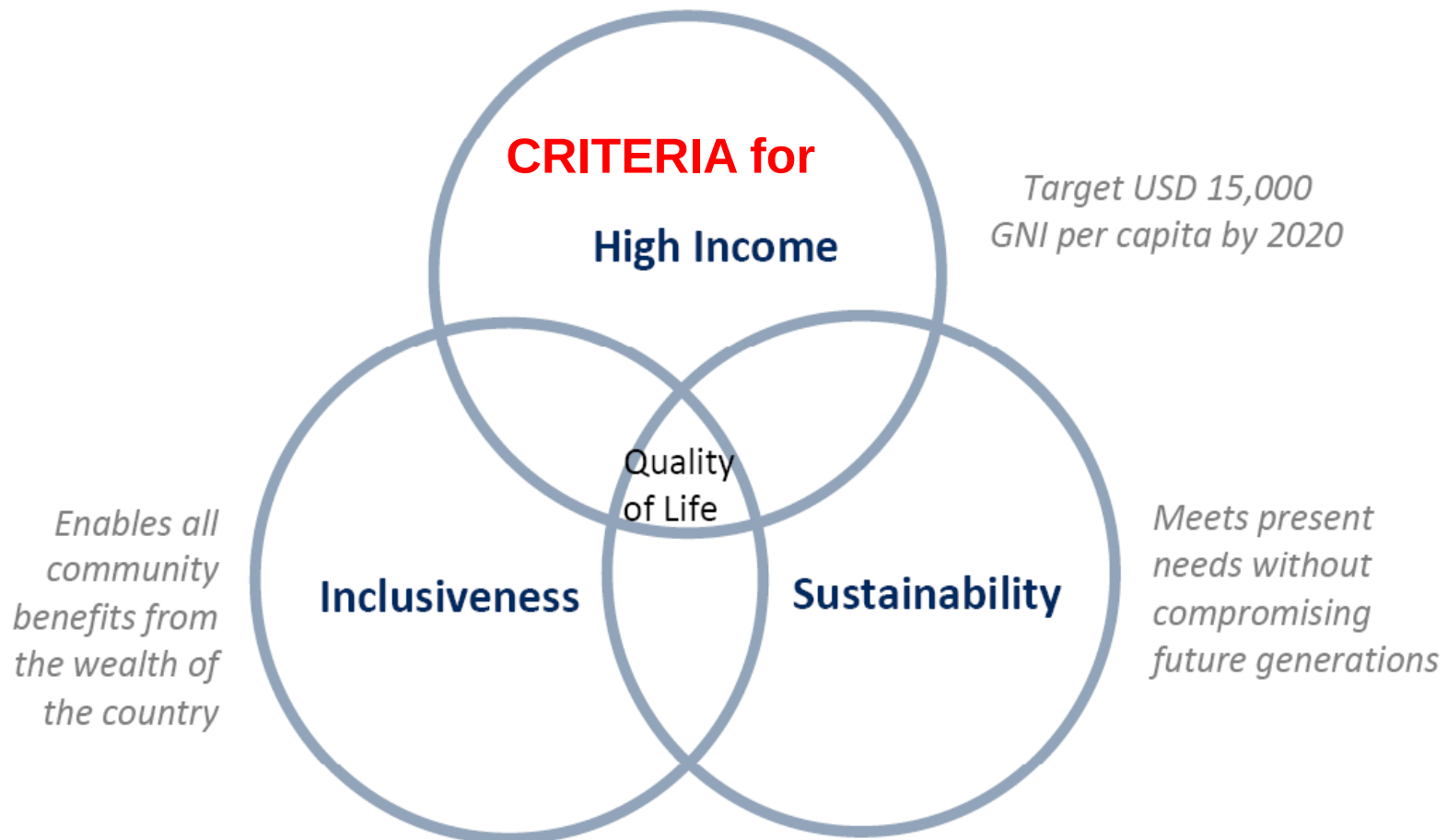


Where are we now?

No	Country	Skilled Workers
1.	Singapore	52.8 %
2.	Finland	44.5 %
3.	New Zealand	43.1 %
4.	Malaysia	28.0 %

Current Status	Min. Target	HIGH Income
28%	33-40%	2020

NEW ECONOMIC MODEL (NEM) – Making us ...a rich country, ...for everyone & ...for a long time



What are the criteria for a country to be considered as “developed”?



- ☐ Per capita income should be high
- ☐ Natural resources exploited to maximum extent
- ☐ Having a favourable Balance of Trade
- ☐ Human development index should be high
- ☐ The real National Income should be growing

More importantly...!

≈ 40% total workforce are skilled workers

.. To achieve a developed country and high income nation

Promote human capital development through skills training

Raising skills to increase employability

Mainstreaming and broadening access to quality TEVT to increase the skilled workforce base

Implement successfully projects and programmes to develop skilled workforce

**Developed dynamic and flexible occupational standards (NOSS)
≈ 40% total workforce are skilled workers**

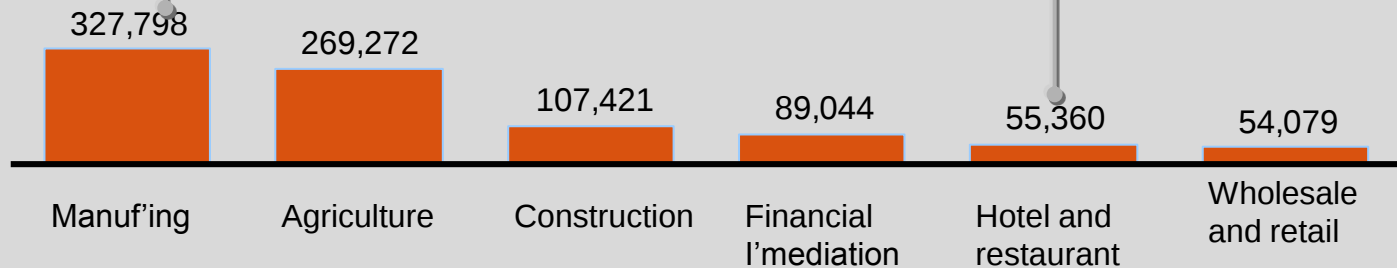
The demand for semi-skilled and skilled workers across multiple industries

Labour shortage today

Job vacancies 2008

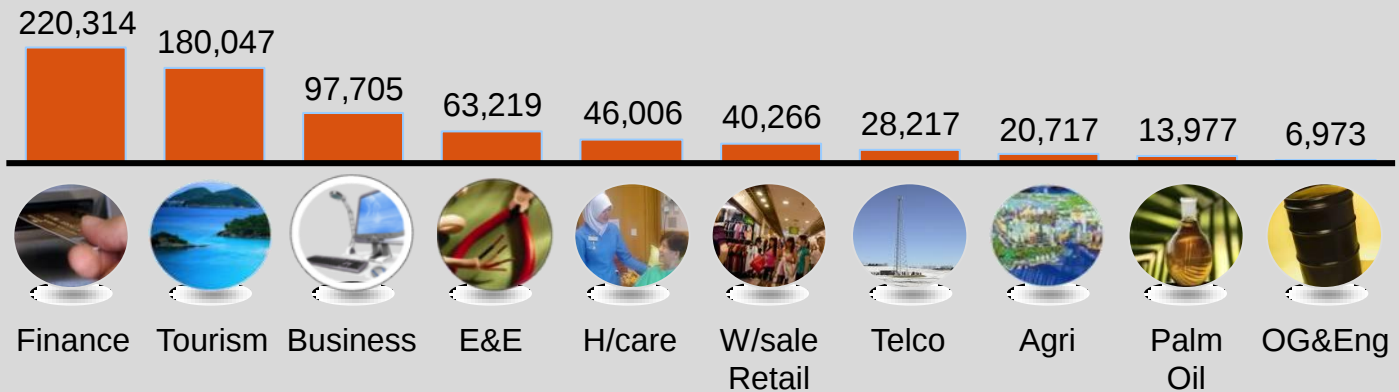
Textile labour shortage of 70k
Plastic manufactures labour shortage of 30k

Hospitality labour shortage of 150k



Demand in the future¹

Number of high income jobs² required, 2020

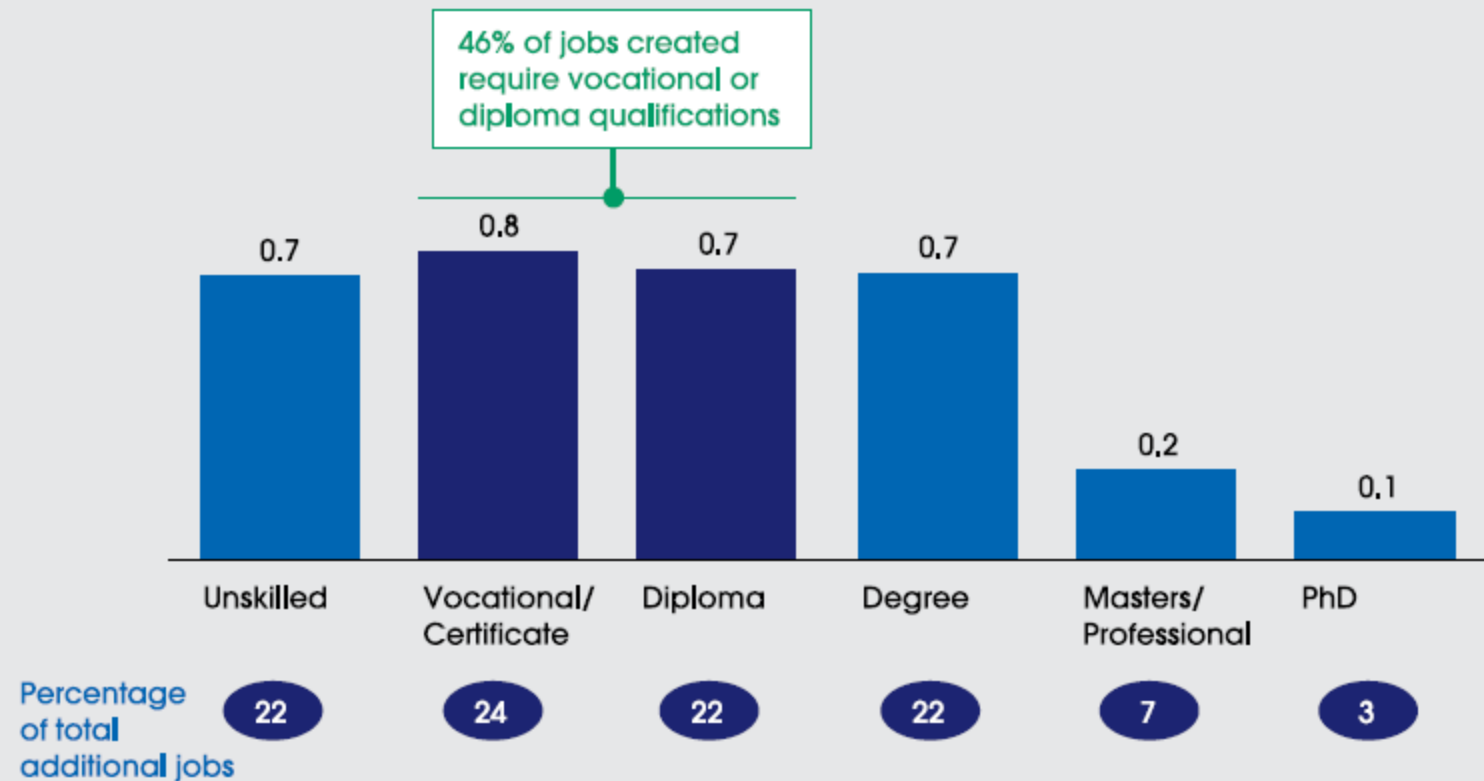


1 Preliminary labour estimates from NKEA labs
2 Jobs commanding RM 4k/month and above

SOURCE: MOHR Labour and Human Resources Statistics 2008, interviews conducted with industry association representatives

Of 3.3 million new jobs, ~46% require vocational certification or diplomas

Number of qualifications needed in 2020 for new jobs, millions





DSD Achievement Todate (Ogos 2014)



- 1,199 Accredited Centres
- 6,451 NOSS program accredited
- 1,353,180 MSC issued todate
MSC (including 96,148 For RPA)
- 39,062 PC issued



- 2,456 NOSS developed (1,553 active)
- 29 industry sectors



- 59,643 apprentice
- 4,261 NDTs companies
- 2,291 NDTs Training Institutes

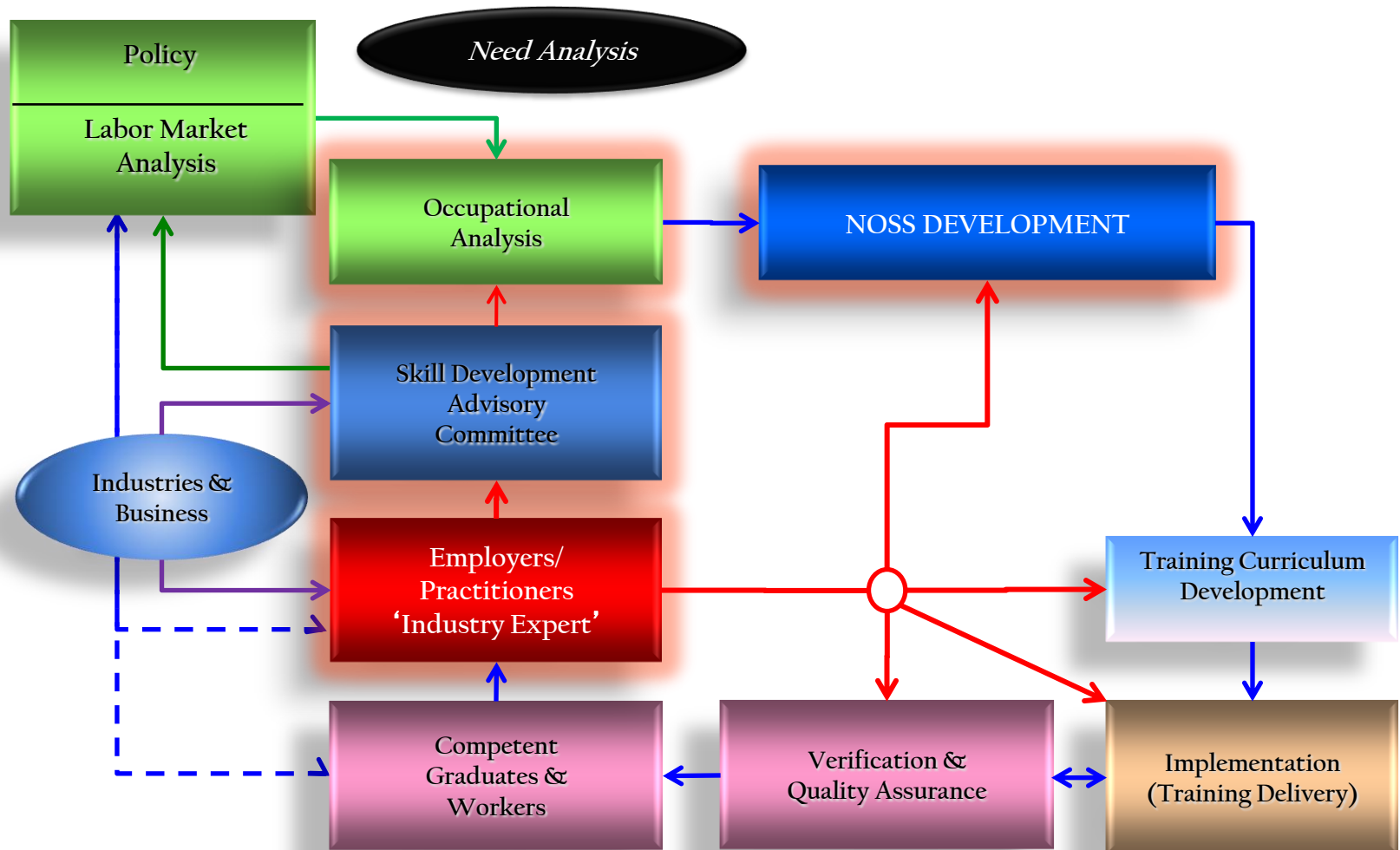
**rujuk Q-fact terkini JPK sehingga ogos 2014*

..and the skill sectors covered...



- 1) **E&E, Telecommunications & Broadcasting (126)**
 - 2) Information Communication & Technology (70)
 - 3) Machinery & Equipment (93)
 - 4) Mechanical & Electrical Service Maintenance (24)
 - 5) **Transportation (213)**
 - 6) Materials – Metal & Non-Metal (15)
 - 7) Packaging (3)
 - 8) Printing (30)
 - 9) Chemical (19)
 - 10) Medical & Pharmaceuticals (56)
 - 11) **Hospitality & Tourism (115)**
 - 12) Souvenir & Small Enterprise (49)
 - 13) **Building & Construction (181)**
 - 14) Landscaping & Environmental (25)
 - 15) Interior Décor (15)
 - 16) Business Management (77)
 - 17) Textiles & Apparel (23)
 - 18) Agriculture & Agro-based (88)
 - 19) Resource-based (72)
 - 20) Biotechnology (37)
 - 21) Education & Training Services (18)
 - 22) Oil & Gas (36)
 - 23) *Halal* Industry (3)
 - 24) Integrated Logistics Services (18)
 - 25) Distributive Trades (13)
 - 26) Defence & Security Services 34)
 - 27) Care & Community Services (24)
 - 28) Arts & Culture (30)
 - 29) Mining (0)
- TOTAL NOSS Package = 1503**

Skill Training System In Malaysia based on NOSS



NOSS TRAINING SYSTEM

- **Prime Movers / Driving Force**
- **Engine that drive the System**

W/out NOSS

- No accreditation of training programs at training centres can take place. National Skill Certification L1-L5 are based on NOSS.
- MSC thru RPA are based on NOSS
- NDTs implementation also are based on NOSS

WHAT IS NOSS?

Specification of competencies expected of a skilled worker, who is gainfully employed in Malaysia for an occupational area & level and pathway to achieve the competencies

Is a Standard and not a curriculum neither a training syllabus.

NOSS

Reflects the skill requirements needed for an occupational area and level for a particular industry

NOSS

- **Based on Occupational/Job Requirements,**
- **Directly related to Career Structure of an Occupation and**
- **Developed by industrial practitioners and skilled workers who are directly involve in the specified occupation.**



- **Standard is enacted in part iv under the National Skill Development Act 2006 (NASDA – Act 652)**

Why do we need SKILL STANDARDS @ NOSS ?

They are critical to improving the skills of employees, raising standards of living and improving the competitiveness of the economy.

Standards are defined by occupational areas and validated by representatives from the occupation.

Standards include the functions, tasks, and performance criteria for a job area; and identify the knowledge, skills and abilities needed to meet performance expectations.

Why do we care In Chemical Analysis?



Industry demand
for skill supporting
staff in chemical
analysis

NO NOSS on
chemical
analysis, yet,
in the country

Why NOSS in molecular biology?



Industry demand
for skill supporting
staff in molecular
biology analysis

NO NOSS on
molecular
biology
analysis,

Promoting
SCIENCE and
TECHNOLOGY

Skill standards (NOSS) answer two critical questions

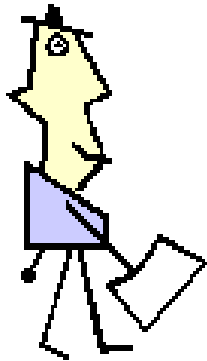
1. What do workers need to know and be able to do to succeed in today's workplace? OR
“ What Does A Professional in a certain trade need to know and able to carry out his work professionally “.
2. And how do we know when workers are performing well?
 - whom to hire or where to focus their limited training dollars
 - what are needed by employees to do to improve their performance;
 - how to prepare students for the challenges of the workplace.

SKILL STANDARDS – NOSS ?

Standard provide a solid foundation for *appropriate curriculum development* for various job areas in an industry sector and forge strong links among the various stakeholders and **provide benefits** for each stakeholders.

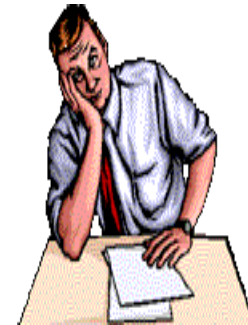
Standard provide a common language, common goals, and common reference point for employers, educators, workers and students.

The main purpose of NOSS is to close
the GAP!



Real World

GAP



**What is
Taught**

NOSS IMPLEMENTATION



workers

SMALL INDUSTRIES
MEDIUM INDUSTRIES
LARGE INDUSTRIES



SKILLS
workforce /
workers



TRAINING NATIONAL SKILL CERTIFICATION

- Accredited Centres
 - National DUAL Training System
 - Recognition Of Prior Learning
- AC NDTs RPL

KAEDAH PERSIJILAN



CERTIFICATION

MALAYSIAN QUALIFICATION FRAMEWORK: QUALIFICATION AND LEVELS

MQF	Sectors			Lifelong Learning
Levels	Skills	Vocational and Technical	Higher Education	
8			Doctoral Degree	Accreditation of Prior Experiential Learning (APEL)
7			Masters Degree	
			Postgraduate Certificate & Diploma	
6			Bachelors Degree	
			Graduate Certificate & Diploma	
5	Advanced Diploma	Advanced Diploma	Advanced Diploma	
4	Diploma	Diploma	Diploma	
3	Skills Certificate 3	Vocational & Technical Certificate	Certificate	
2	Skills Certificate 2			
1	Skills Certificate 1			

Recognition

- Industrial recognition & acceptance
- Malaysian Skills Qualification was embedded in Malaysian Qualification Framework (MQF) and was gazette in MQA
- Malaysian Skills Qualification was protected and also gazette in NASDA

BENEFITS OF NOSS

**WORKING
WORLD**

JOB SCOPE BASED ON COMPETENCIES

BASIS FOR PERFORMANCE APPRAISAL

FOR CAREER DEVELOPMENT

EMPLOYEES RECRUITMENT

BASIS FOR PRODUCTIVITY LINKED WAGES

BENEFITS OF NOSS

TRAINING WORLD

GUIDE FOR CURRICULUM DEVELOPMENT

INSTRUCTIONAL MATERIAL PREPARATION

TEACHING MATERIAL PREPARATION

KNOWLEDGE & PERFORMANCE ASSESSMENT

NATIONAL SKILL CERTIFICATION

NOSS STATISTIC YEAR 2014

List Of Industry Sectors

- 29 main industry sectors covering all job areas/titles

List Of NOSS developed till Jun 2014

- 2,456 NOSS by 25/06/2014
- Target 5,000 NOSS'ess by the year 2020

M'sian Skill Certificates issued

- Estimated 11 millions skill workforce in Malaysia
- 1.36 millions having skill certificates MSC/MSD/MSAD
- Ogos 2014

Definition of Levels (1-3)

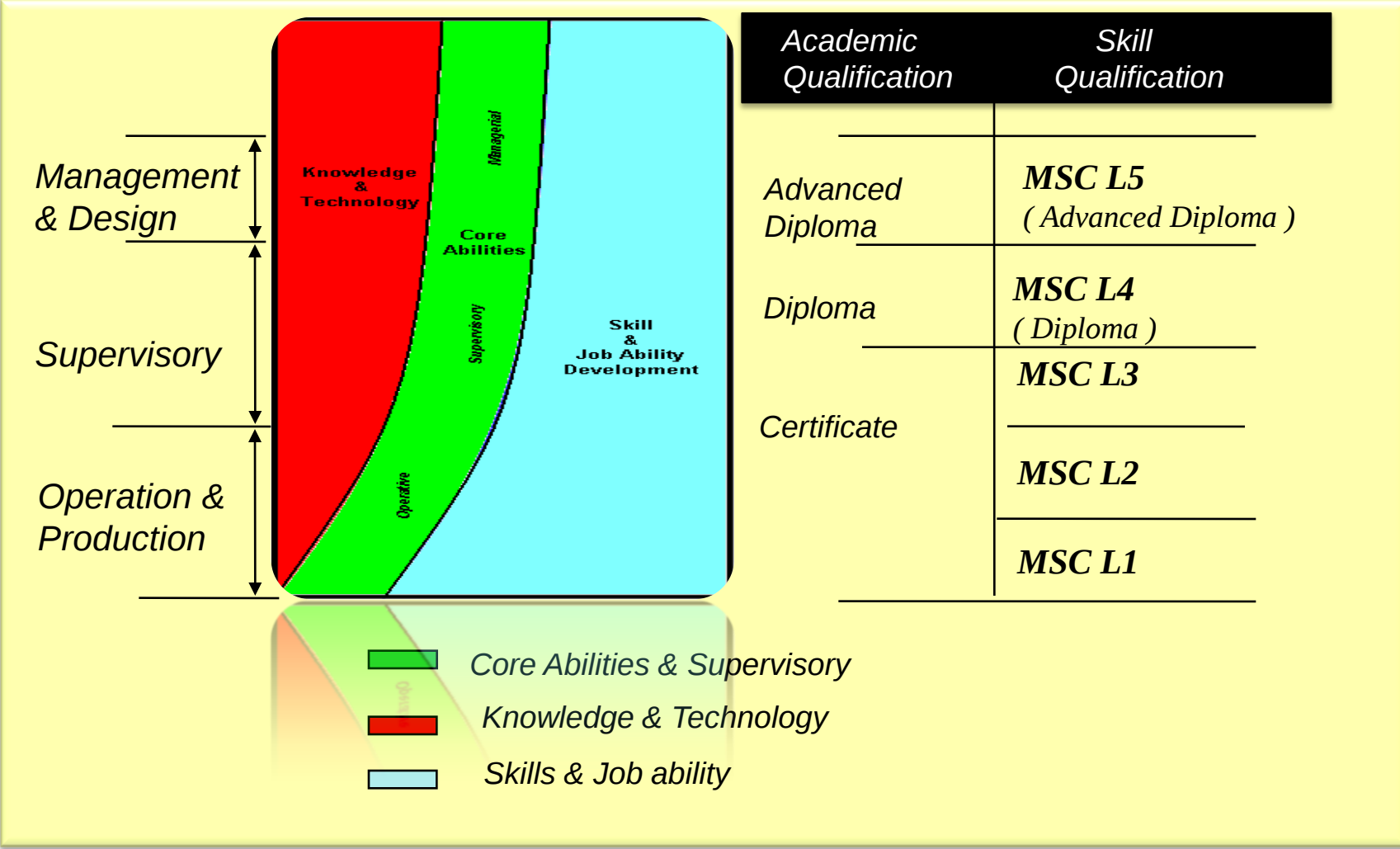
- Level 1 : 'Competent in performing a range of varied work activities, most of which are routine and predictable'
- Level 2 : 'Competent in performing a significant range of varied work activities, performed in a variety of context. Some of the activity are non-routine and required individual responsibility and autonomy'
- Level 3 : 'Competent in performing a broad range of varied work activities, performed in a variety of context, most of which are complex and non-routine. There is considerable responsibility and autonomy and control or guidance of others is often required'



Definition of Levels (4-5)

- Level 4 : 'Competent in performing a broad range of **complex technical or professional** work activities performed in a wide variety of context and with a substantial degree of personnel responsibility and autonomy. Responsibility for the work of others and allocation of resources is often present'
- Level 5 : 'Competent in applying a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of context. Very substantial personal autonomy and often significant **responsibility for the work of others** and for the allocation of substantial resources feature strongly, as do personal accountabilities for analysis and diagnosis, design, planning, execution and evaluation'

MALAYSIAN SKILLS QUALIFICATIONS FRAMEWORK (MSQF)

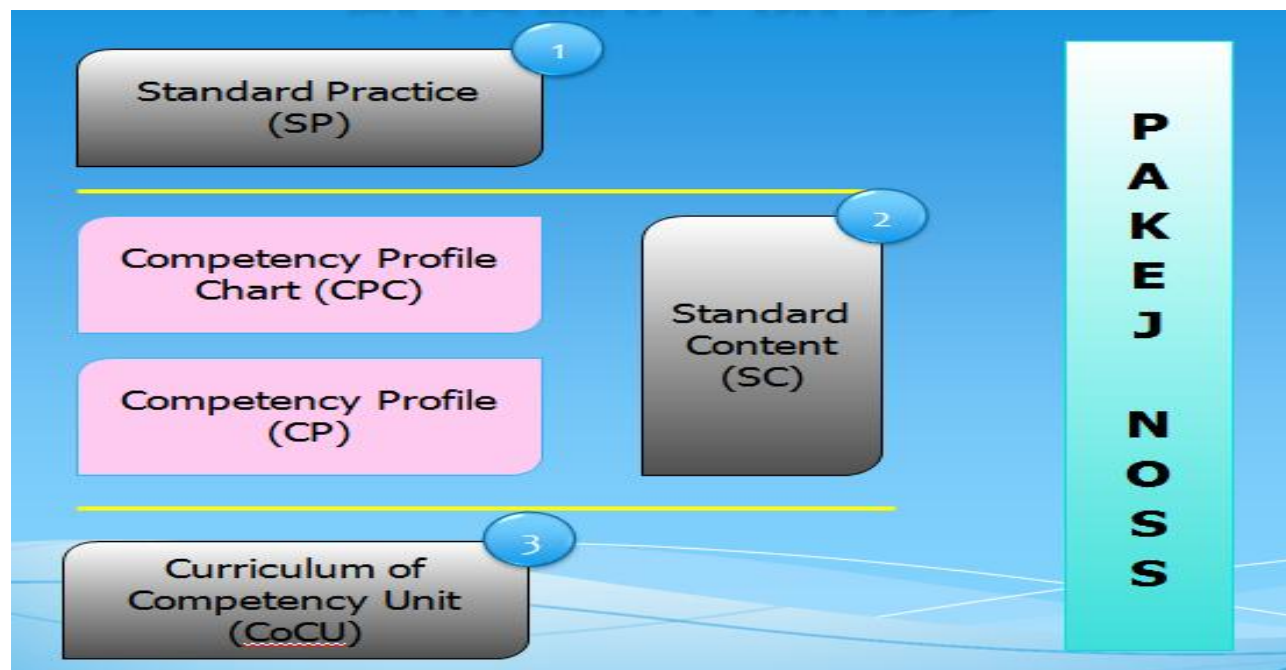
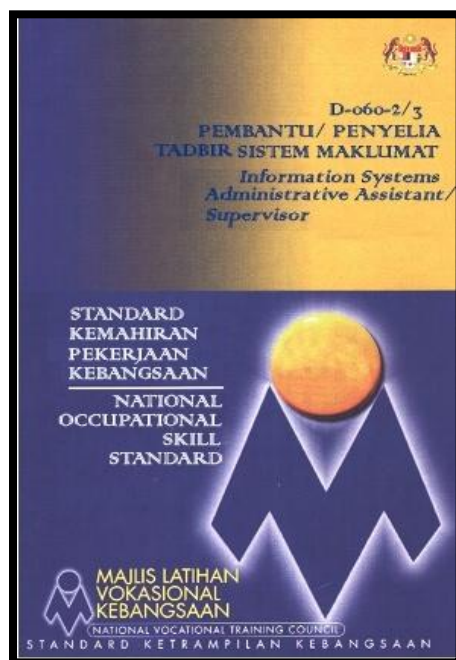




NOSS CONTENT



NOSS DOCUMENT COMPRISE OF STANDARD PRACTICE (SP), STANDARD CONTENT (SC) AND CURRICULUM OF COMPETENCY UNIT (CoCU).



1. WHAT IS IN THE STANDARD PRACTICE (SP)

- ☐ Introduction
- ☐ Occupational Structure
- ☐ Occupational Area Structure
- ☐ Definition of Competencies Level
- ☐ Award of Certificate
- ☐ Occupational Competencies *(core competencies)*
- ☐ Working Condition *(lab environment and safety)*
- ☐ Employment Prospect *(variety of lab-based industries and disciplines)*
- ☐ Career Advancement *(chance to enhance career-move to next level)*
- ☐ Sources Additional Information
- ☐ Acknowledgement
- ☐ NOSS Development Committee Members

OCCUPATIONAL STRUCTURES

OCCUPATIONAL STRUCTURE (OS)

SECTOR	CHEMICAL		BIOTECHNOLOGY
SUB SECTOR	CHEMICAL ANALYSIS	FORENSIC SCIENCE	BIOLOGY
AREA LEVEL	Analytical Chemistry	Document Examination	Molecular Biology
LEVEL 5	Chemical Laboratory Executive	Document Examination Executive	Molecular Biology Laboratory Executive
LEVEL 4	Chemical Laboratory Assistant Executive	Document Examination Assistant Executive	Molecular Biology Laboratory Assistant Executive
LEVEL 3	Chemical Laboratory Senior Assistant	Document Examination Senior Laboratory Assistant	Molecular Biology Senior Laboratory Technician
LEVEL 2	Chemical Laboratory Assistant	Document Examination Laboratory Assistant	Molecular Biology Laboratory Technician
LEVEL 1	NIL	NIL	NIL

Sector: Chemical

**Sub sector:
Forensic Science**

**Job Area:
Document
Examination**

**Level 2: Forensic
Document
Examination
Laboratory
Assistant**

OCCUPATIONAL AREA STRUCTURES

SECTOR	CHEMICAL		BIOTECHNOLOGY
SUB SECTOR	CHEMICAL ANALYSIS	FORENSIC SCIENCE	BIOLOGY
AREA LEVEL	Analytical Chemistry	Document Examination	Molecular Biology
LEVEL 5	Chemical Laboratory Management	Document Examination Laboratory Management	Molecular Biology Laboratory Management
LEVEL 4	Chemical Laboratory Supervision	Document Examination Laboratory Supervision	Molecular Biology Laboratory Supervision
LEVEL 3	Chemical Laboratory Operation	Document Examination Laboratory Operation	Molecular Biology Laboratory Operation
LEVEL 2	Chemical Laboratory Operation	Document Examination Laboratory Operation	Molecular Biology Laboratory Operation
LEVEL 1	NIL	NIL	NIL

OCCUPATIONAL AREA STRUCTURE (OAS)

Sector: Chemical

Sub sector: Forensic Science

Job Area: Document Examination

Level 2: Forensic Document Examination Laboratory Assistant

2. WHAT IS IN STANDARD CONTENT (SC)

COMPETENCY PROFILE CHART (CPC)

SECTOR	CHEMICAL		
SUB SECTOR	FORENSIC SCIENCE		
JOB AREA	DOCUMENT EXAMINATION		
NOSS TITLE	DOCUMENT EXAMINATION LABORATORY OPERATION		
JOB LEVEL	TWO (2)	JOB AREA CODE	CM-XXX-02:2014

← COMPETENCY → ← COMPETENCY UNIT →

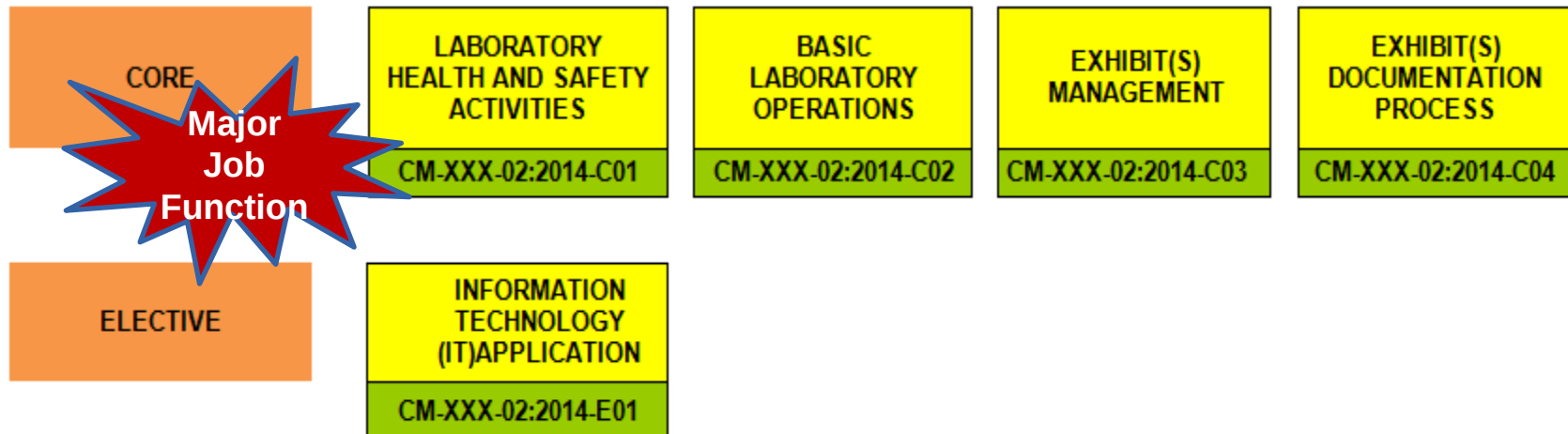


Figure 2.2: Competency profile chart for Forensic Document Examination Laboratory Assistant Level 2.

COMPETENCY PROFILE (CP)

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Indicators
1. LABORATORY HEALTH AND SAFETY ACTIVITIES	CM-XXX-02:2014-C01	The Health and Safety Activities describes the requirement to maintain and ensure the safety of laboratory personnel and equipment. The serviceability of the equipment and lab personnel are vital to ensure laboratory safety and health of the personnel. The person who is competent in the Basic Laboratory Analysis shall be able to handle chemical materials, implement OSHA rules and regulations and handle electrical, mechanical and scientific instrument, handle radioactive instrument and bio-hazard exhibits. The person who is competent in this CU shall be able to handle all laboratory equipment and chemical materials in accordance with the standards and recommended practices.	1. Handle Chemical Materials 2. Implement OSHA rules and regulations. 3. Handle electrical instrument	1.1 Common chemical material is distinguished based on classes according to Material Safety Data Sheet (MSDS). 1.2 Common chemical materials are categorized based on the application. 1.3 Types of chemical are used according to analytical SOP. 1.4 Amount of chemical is measured and used according to analytical SOP. 2.1 Chemical materials are clearly labelled and stored according to standard guideline. 2.2 Hazardous chemicals classes are identified according to standard guideline. 2.3 Permissible exposure limits of chemical materials is determined according to MSDS. 2.4 Laboratory waste is disposed according to Department of Environmental (DOE) specification. 2.5 Proper laboratory environment condition is monitored and maintained according to standard guideline. 2.6 Laboratory risk management system is implemented, reviewed and improved according to standard guideline. 3.1 Potential risk from electrical instruments are identified. 3.2 Electrical instruments are operated

SECTOR	CHEMICAL						
SUB SECTOR	FORENSIC SCIENCE						
JOB AREA	DOCUMENT EXAMINATION						
NOSS AREA	FORENSIC DOCUMENT EXAMINATION LABORATORY OPERATION						
COMPETENCY UNIT TITLE	LABORATORY HEALTH AND SAFETY ACTIVITIES						
LEARNING OUTCOME	The person who is competent in this CU shall be able to handle all laboratory equipment and chemical materials in accordance with the standards and recommended practices. Upon completion of this competency unit trainees will be able to:- • Handle Chemical Materials • Implement OSHA rules and regulations. • Handle mechanical instrument. • Handle scientific instrument. • Handle radiated instrument. • Handle biohazard exhibit(s)/ sample(s) • Handle electrical instrument.						
PRE-REQUISITE (If applicable)							
COMPETENCY UNIT ID	CM-xxx-04:2013-C01	Level	2	Training Duration	280	Credit Hours	28
Work Activities	Related Knowledge	Related Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria	
1. Handle Chemical Materials	i. Usage of PPE. ii. Types, function, usage and category of chemical material. iii. Handling procedure and techniques of chemical materials iv. Chemical solution estimation. v. Solution mixing process. vi. Safety usage of chemical.	i. Identify PPE needed. ii. Identify chemical materials. iii. Apply correct types of chemical. iv. Measure correct amount of solution. v. Prepare working solution.	<u>Attitude</u> i. Meticulous in handling. ii. Honest in chemical usage. iii. Accountable and calm in doing task. iv. Particular in checking chemical	<u>Related Knowledge</u> 12 <u>Related Skills</u> 28	<u>Related Knowledge</u> • Lecture • Group discussion <u>Related Skills</u> • Demonstration • Practical	i) Types, function, usage and category of chemical material are explained. ii) Handling procedure and techniques of chemical materials are described. iii) Estimation of	

2.3.2 EMPLOYABILITY SKILLS



Core Abilities	Social Skill and Social Values
01.01 Identify and gather information 01.02 Document information, procedures or processes 02.01 Interpret and follow manuals, instructions and SOP's 02.04 Prepare brief reports and checklists using standard forms 03.01 Apply cultural requirements to the workplace 03.02 Demonstrate integrity and apply ethical practices 03.03 Accept responsibility for own work and work area 03.05 Demonstrate safety skills 06.03 Identify and highlight problems 04.01 Organize own work activities 04.02 Set and revise own objectives and goals 04.03 Organize and maintain own workplace 04.04 Apply problem solving strategies	1. Communication skills 2. Conceptual skills 3. Interpersonal skills 4. Learning skills 5. Leadership skills 6. Multitasking and prioritizing 7. Self-discipline 8. Teamwork

2.3.3 TOOLS, EQUIPMENT AND MATERIALS (TEM)

ITEMS	RATIO (TEM:Trainees)
1. Chemical materials	1:1
2. Digital weighing scale	1:10
3. Computer	1:15
4. Printer	1:15
5. Glassware	1:1
6. Pipette	1:1
7. Microscope	1:15
8. Imaging system	1:15
9. Ink apparatus	1:15
10. Indentation apparatus	1:15
11. Shredder	1:30
12. Photocopier	1:30
13. Scanner	1:30
14. Fax machine	1:30
15. Biochemical waste bin	1:30
16. Equipment manual	1:1
17. Rules and regulation board	1:15
18. Personal Protective Equipment	1:1

REFERENCES

1. Ordway Hilton. (2006). Scientific examination of questioned documents. CRC Press. ISBN: 0-8493-9510-0
2. David Ellen. (2005). The Scientific Examination of Documents (Method & Technique). Academic Press. ISBN: 0748405801
3. Katherine Koppenhaver. (2007). Forensic Document Examination: Principles and Practice. Humana Press.
4. Jane Lewis. (2014). Forensic Document Examination: Fundamental and Current Trends. Academic Press. ISBN: 978-0-12-416693-6
5. KS Madhavan, 5S Pocket book, KarurMadhavan. ISBN 978-8-19-067150-7
6. Rob Ptacek & Jaideep Motwani. Using 5S to Organize and Standardize Areas and Files, MCS Media. ISBN 978-1-45-076632-6
7. Denise M. Harmening. (2007). Laboratory management: Principles and Processes. DH Pub & Consulting. ISBN: 978-08-03615991
8. Tapping, Don, Harper-Frank, Kathy and Williams, Jody. (2008). The 5S for the Office User's Guide. Kindle Edition. MCS Media.
9. Michael Speegle. (2012). Safety, Health and Environment Concepts for the Process Industry. Cengage Learning. ISBN: 978-1133013471
10. Joel M Cohen & Robert D Peterson. The Complete Guide to OSHA Compliance. CRC Press. ISBN: 978-0873716819
11. OECD Organisation for Economic Co-operation and Development. (2006). Good Laboratory Practice: OECD Principles and Guidance for Compliance Monitoring. OECD Publishing. ISBN: 978-9264012820
12. Nuria Roca & Rosa M Curto. (2007). The Three R's: Reuse, Reduce, Recycle (What Do You Know About? Books). Barron's Educational Series. ISBN: 978-0764135811

SUMMARY OF TRAINING DURATION FOR FORENSIC DOCUMENT EXAMINATION LABORATORY ASSISTANT (LEVEL 2)

NO. ID	COMPETENCY UNIT TITLE	WORK ACTIVITIES	RELATED KNOWLEDGE (A)	RELATED SKILLS (B)	HOURS (A)+(B)	TOTAL (HRS)
CM-xxx- 04:2013- C01	LABORATORY HEALTH AND SAFETY ACTIVITIES	Handle Chemical Materials	12	28	40	280
		Implement OSHA rules and regulations	12	28	40	
		Handle mechanical instrument	12	28	40	
		Handle scientific instrument	12	28	40	
		Handle radiated instrument	12	28	40	
		Handle biohazard exhibit(s)/ sample(s)	12	28	40	
		Handle electrical instrument	12	28	40	
CM-XXX- 02:2014- C02	BASIC LABORATORY OPERATIONS	Handle common laboratory apparatus and equipment.	27	63	90	270
		Handle general laboratory sample(s).	27	63	90	
		Prepare standard solution	27	63	90	
CM-XXX- 02:2014- C03	EXHIBIT/ SAMPLE(S) MANAGEMENT	Handle exhibit(s)/ sample(s)	12	28	40	120
		Record exhibit(s)/ sample(s) movement	12	28	40	
		Preserve exhibit(s)/ sample(s).	12	28	40	

CM-XXX-02:2014-C04	EXHIBIT(S) DOCUMENTATION PROCESS	Perform exhibit(s) description	18	42	60	240
		Prepare comparison chart	18	42	60	
		Capture exhibit(s) photograph	18	42	60	
		Capture exhibit(s) photograph	18	42	60	
TOTAL HOURS (Core Competencies)			273	637	910	910
CM-XXX-02:2014-E01	INFORMATION TECHNOLOGY (IT) APPLICATION	Perform Data Analysis and Visualization	9	21	30	90
		Prepare Report Analysis	9	21	30	
		Prepare presentation slides.	9	21	30	
TOTAL HOURS (+ Elective Competency)			27	63	90	90



Mengarusperdana Latihan Kemahiran

SkillsMalaysia



THANK YOU