

SESI “HANDS-ON”

BENGKEL PEMBANGUNAN DOKUMENTASI PERANCANGAN DAN REKABENTUK KURIKULUM KURSUS WBL ANJURAN CAES

19 JULAI 2022 @ DEWAN UTEM 1

Ts. MOHD SUFFIAN BIN AB RAZAK

PROFIL PENCERAMAH

10 Pendidikan

10 B.Eng (Mechanical), Kobe University, Japan.

10 M.Eng (Mechanical), Universiti Malaya

10 Pengalaman kerja

10 Jurutera Pengeluaran, PROTON

10 Jurutera Pengajar Kanan, UTeM

10 Penyelaras WBL FTKMP

10 JK Pembangunan Program Sarjana Muda Teknologi
MTUN (2018-2019)

10 Panel Penilai TTAC MBOT(6 FA, 1 CA)

10 Pemeriksa Luar / Penasihat Akademik (3)



TS. MOHD SUFFIAN
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MODEL WBL DI FTKMP UTEM

| Model | Typical Attributes |
|------------------------------|---|
| In-work training / education | Short courses influenced by industry / professional standards |



REKABENTUK KURIKULUM WBL

Ciri – ciri Kurikulum WBL.

1. Mematuhi Penjajaran Konstruktif

Kaedah PdP dan kaedah penilaian harus sejajar dengan CLO, PLO dan tahap taksonomi.

2. Memudah cara, bukan menyekat.

Tugasan perlu boleh disesuaikan dengan persekitaran kerja WBL

3. Mempunyai jawatan kuasa kurikulum.

Jawatankuasa WBL yang terdiri dari pensyarah WBL dan wakil industri dalam mereka bentuk kurikulum

Rujukan: Guidelines to Good Practices WBL (MQA)

REKABENTUK KURIKULUM WBL

Pengiraan Student Learning Time (SLT) – GGP WBL 2017

1. Theory and Work

Masa dikira untuk teori dibahagikan kepada 2 komponen.

1) Dependent Learning (DL) 2) Independent Learning (IL)

Teori dipelajari sama ada waktu kerja/ luar waktu kerja/ online.

2. Industrial Guidance (IG).

Merujuk kepada jumlah jam diperuntukkan kursus untuk dilatih, diselia dan dinilai oleh Jurulatih Industri. Jumlah IG diperlukan utk 4 WBL kursus per semester = Kursus A (200 jam) + Kursus B (200 jam) + Kursus C (200 jam) + Kursus D (200 jam) = 800 jam.

Rujukan: Guidelines to Good Practices WBL (MQA)

REKABENTUK KURIKULUM WBL

Effective Learning Time (ELT) – GGP WBL 2017

1. $ELT = 80 \% \times SLT$

Mengambil kira realiti suasana kerja, dianggarkan 20% dari masa bekerja sehari digunakan untuk rehat, solat, makan, perjalanan, dsb. Oleh itu hanya 80% dari kiraan SLT sahaja dikira efektif dalam masa pembelajaran berasaskan kerja.

2. $Credit = ELT / 40^*$

*Malaysia Notional Hour yang ditetapkan MQA.

Rujukan: Guidelines to Good Practices WBL (MQA)

SYARAT TAMBAHAN ETAC

SLT credit calculation for WBL courses

- Work Based Learning (WBL): The total student learning hours allocated at the workplace is inclusive of the DL, IL, IG and assessment hours. The concept of ELT shall be given consideration in calculating the SLT and credits for WBL. It is estimated that about 80% of the time at work can be determined as ELT. Due to those considerations, SLT for WBL is calculated as described below:
 - Effective Learning Time (ELT):
 - i. Theory (Dependent Learning (DL) and Independent Learning (IL))
 - ii. Industrial Guidance (IG)
 - iii. Assessment (during work and outside work)
$$\text{ELT} = (\text{Theory} + \text{Industrial Guidance} + \text{Assessment}) \times 80\%$$

$$= (\text{DL} + \text{IL} + \text{IG} + \text{Assessment}) \times 80\%$$

$$\text{Credits} = \frac{\text{Effective Learning Time (ELT)}}{40 \text{ Malaysian Notional Hour}}$$

$$= \frac{\text{ELT}}{40}$$
 - FYP and design projects are encouraged to be implemented as WBL courses incorporated inside the industry placement period/s.
 - The SLT credits may be accumulated in more than one industry placement period.
- For final year project, the following guideline shall be followed:
- A final year project is subjected to a minimum of eight SLT credit units and a maximum of twelve SLT credit units.

SYARAT TAMBAHAN KPT 2u2i

2.2.1 Peruntukan Jam Kredit Komponen Industri

Peruntukan jam kredit bagi komponen industri adalah seperti Jadual 2.2.

Jadual 2.2: Peruntukan jam kredit komponen industri bagi Mod Pengajian 2u2i.

| Komponen Industri | Peruntukan jam kredit komponen industri | | | |
|-------------------|---|----------|----------|----------|
| | Unit kredit | | % kredit | |
| | Minimum | Maksimum | Minimum | Maksimum |
| 2i | 48 | 60 | 40 | 50 |
| 1i | 24 | 40 | 20 | 30 |

Nota:

- Berdasarkan 120 jam kredit bergraduat.
- Bagi program yang melebihi 120 jam kredit bergraduat, penggunaan peratusan jam kredit disarankan.
- Pengiraan jam kredit berasaskan Jam Pembelajaran Efektif (*Effective Learning Time - ELT*) di industri, Jam Pembelajaran Pelajar (*Student Learning Time - SLT*) di IPT atau mengikut standard program.

$$20\% \times 140 \text{ jam kredit} = 28$$

Bergraduat
= Bergred?



BAGAIMANA MERANCANG KURIKULUM WBL?



PEMBANGUNAN DOKUMENTASI PERANCANGAN LANGKAH PERTAMA

1. Kenal pasti kursus yang ingin dijalankan di industri.
2. Rancang perjalanan kursus di industri → **Takwim WBL**
3. Rujuk kalendar akademik untuk kesesuaian takwim.

TAKWIM WBL BMMI (Kohort 1)

| Tarikh | Kursus | Jumlah Hari | Sem |
|---------------------------------------|---|--|--------------|
| 7 Mac 2022 – 8 April 2022 W01-W05 | BMMI 3254 <small>Special Meeting Committee on Examination/Examination Result Meeting 2021/2022 Special Semester Examination Industrial Training for Bachelor of Engineering Industrial Training for Diploma in Information Technology 2022/2023 Initial Special Semester Examination WBL for First Year Student Bachelor of Technology</small> | 11 October 2022 (Wednesday) | |
| 11 April 2022 – 13 Mei 2022 W06-W10 | BMMI 3234 Ma Lawatan ke-2 WBL. Evaluate PSM1 dan perbincangan untuk PSM2 (1-12/8/22) | 25 (5 minggu) | 6 |
| 16 Mei 2022 – 17 Jun 2022 W11-W15 | BMMI 3234 Project Management and Supervision | Mesy. Kep. Peperiksaan Senat untuk WBL/LI/Sem Khas: 19/10/22 | 6 |
| 7 Mac 2022 – 22 Julai 2022 W16-W20 | BMMU 3134 Final Year Project 1 | Hanya sahkan keputusan 3 kursus WBL dan PSM1 | 6 |
| 25 Julai 2022 – 16 Sept 2022 | BMMU 3186 Final Year Project 2 | | 6 (SEM KHAS) |
| 19 Sept 2022 – 3 Mac 2023 | BMMU 3212 Industrial Training | 6 Bulan (24 Minggu) | 7 |

TAKWIM WBL BMMK (Kohort 1)

| Work-Based Learning (WBL) Industrial Training for Final Year Students Bachelor of Technology Program (24 Weeks) | | 11 October 2022 (Tuesday) - 24 March 2023 (Friday) | |
|---|--|--|--------------|
| SPECIAL SEMESTER (8 Weeks) | | 18 July 2022 (Monday) - 09 September 2022 (Friday) | |
| Instructional Session & Examination (8 Weeks) | | 18 July 2022 (Monday) - 09 September 2022 (Friday) | |
| | Reclamation in welding | | |
| 11 April 2022 – 6 Mei 2022 W06-W09 | BMMK 3193 Cy Latihan Industri dalam kalendar akademik: 11/10/22-24/3/23 | 20 (4 minggu) | 6 |
| 16 Mei 2022 – 10 Jun 2022 W11-W14 | BMMK 3193 Management and Supervision | Semester khas dalam kalendar akademik: 18 Julai – 9 September 2022 | 6 |
| 7 Mac 2022 – 22 Julai 2022 W01-W20 | BMMU 3134 Final Year Project 1 | 30 (6 minggu) | 6 |
| 25 Julai 2022 – 16 Sept 2022 | BMMU 3186 Final Year Project 2 | 38 (8 minggu) | 6 (SEM KHAS) |
| 19 Sept 2022 – 3 Mac 2023 | BMMU 3212 Industrial Training | 6 Bulan (24 Minggu) | 7 |

TAKWIM WBL PROGRAM BMMI (KOHORT 2)

| WBL For Third Year Students Bachelor of Technology Program (20 Weeks) | | | 13 March 2023 (Monday) - 28 Julai 2023 (Friday) | |
|---|--|------------------------|--|-------------------------------|
| Tarikh | Kursus | Jumlah Hari | Sem | |
| 13 Mac 2023 – 14 April 2023 | Senate Standing Committee on Examination/Examination Result Meeting - Semester II 2022/2023 Special Examination - Semester II 2022/2023 Mobility Outbound Industrial Training For Bachelor of Technology Management & Technopreneurship Industrial Training For Bachelor of Engineering Technology WBL For Third Year Students Bachelor of Technology | | | 30 September 2023 (Wednesday) |
| WBL For Third Year Students Bachelor of Technology Program (8 Weeks) | | | 31 July 2023 (Monday) - 22 September 2023 (Friday) | |
| 17 April 2023 – 19 Mei 2023 | BMMI 3234 Machine Maintenance | 25 (5 minggu) | 6 | KURSUS WBL |
| 22 Mei 2023 – 23 Jun 2023 | BMMI 3244 Project Management and Supervision | 25 (5 minggu) | | |
| 13 Mac 2023 – 28 Julai 2023 | BMMU 3134 Final Year Project 1 | 100 (20 minggu) | SEM KHAS | 2 PROJEK SARJANA MUDA |
| 31 Julai 2023 – 22 Sept 2023 | BMMU 3186 Final Year Project 2 | 40 (8 minggu) | | |
| 25 Sept 2023 – 8 Mac 2024 | BMMU 3212 Industrial Training | 6 Bulan (24 Minggu) | 7 | 3 LATIHAN INDUSTRI |

TAKWIM WBL PROGRAM BMMK (KOHORT 2)

| Tarikh | Kursus | Jumlah Hari | Sem | |
|------------------------------|--|------------------------|----------|--------------------------|
| 13 Mac 2023 – 14 April 2023 | BMMK 3204 Reclamation in Welding | 25 (5 minggu) | 6 | 1 KURSUS WBL |
| 17 April 2023 – 12 Mei 2023 | BMMK 3193 Cyber Physical Systems in Welding | 20 (4 minggu) | | |
| 15 Mei 2023 – 16 Jun 2023 | BMMK 3214 Managing Production and Supervision | 25 (5 minggu) | | |
| 13 Mac 2023 – 28 Julai 2023 | BMMU 3134 Final Year Project 1 | 100 (20 minggu) | SEM KHAS | 2 PROJEK SARJANA MUDA |
| 31 Julai 2023 – 22 Sept 2023 | BMMU 3186 Final Year Project 2 | 40 (8 minggu) | | |
| 25 Sept 2023 – 8 Mac 2024 | BMMU 3212 Industrial Training | 6 Bulan (24 minggu) | 7 | 3 LATIHAN INDUSTRI |

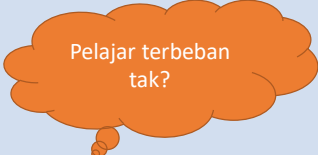
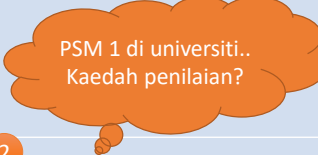
TAKWIM WBL PROGRAM BMMF (KOHORT 1)

| Tarikh | Kursus | Jumlah Hari | Sem | |
|--------------------------------|---|------------------------|-------------|-------------------------------------|
| 13 Mac 2023 – 7 April 2023 | BMMF 3243 Asset and Inventory Management | 20 (4 minggu) | 6 | 1 KURSUS WBL |
| 10 April 2023 – 26 Mei 2023 | BMMF 3256 Quality Management | 35 (7 minggu) | | |
| 29 Mei 2023 – 23 Jun 2023 | BMMF 3263 Risk Assessment | 20 (4 minggu) | | |
| 13 Mac 2023– 28 Julai 2023 | BMMU 3134 Final Year Project 1 | 100 (20 minggu) | SEM KHAS | 2 PROJEK SARJANA MUDA |
| 31 Julai 2023– 22 Sept 2023 | BMMU 3186 Final Year Project 2 | 40 (8 minggu) | | |
| 25 Sept 2023 – 8 Mac 2024 | BMMU 3212 Industrial Training | 6 Bulan (24 minggu) | 7 | 3 LATIHAN INDUSTRI |

TAKWIM WBL PROGRAM BMMS (KOHORT 1)

| Tarikh | Kursus | Jumlah Hari | Sem | |
|--------------------------------|---|------------------------|-------------|-------------------------------------|
| 13 Mac 2023 – 28 April 2023 | BMMS 3146 HVAC Project Planning and Development | 35 (7 minggu) | 6 | 1 KURSUS WBL |
| 1 Mei 2023 – 16 Jun 2023 | BMMS 3156 Testing & Commissioning Commercial HVAC | 35 (7 minggu) | | |
| 13 Mac 2023– 28 Julai 2023 | BMMU 3134 Final Year Project 1 | 100 (20 minggu) | | 2 PROJEK SARJANA MUDA |
| 31 Julai 2023– 22 Sept 2023 | BMMU 3186 Final Year Project 2 | 40 (8 minggu) | SEM KHAS | |
| 25 Sept 2023 – 8 Mac 2024 | BMMU 3212 Industrial Training | 6 Bulan (24 minggu) | 7 | 3 LATIHAN INDUSTRI |

TAKWIM WBL PROGRAM BMMH (3u1i) KOHORT 1

| Tarikh | Kursus | Jumlah Hari | Sem | |
|--------------------------|---|------------------------|-----|--|
| 9 Okt 2023 – 23 Okt 2023 | Choose any THREE (3) Courses BMMH 4633 (Lean Manufacturing) | 15 (3 minggu) | 7 |  1 KURSUS WBL |
| 23 Okt 2023 – 6 Nov 2023 | BMMH 4663 (Engineering Financial, Costing & Economics) | 15 (3 minggu) | | |
| 6 Nov 2023 – 20 Nov 2023 | BMMH 3543 (Maintenance of HVAC System) | 15 (3 minggu) | | |
| 20 Nov 2023 – 4 Dis 2023 | BMMH 4623 (Project Management) | 15 (3 minggu) | | |
| 4 Dis 2023 – 18 Dis 2023 | BMMU 4053 (Engineering Ethics and OSHE) | 15 (3 minggu) | | |
| 9 Okt 2023- 22 Jan 2024 | BMMH 3523 (Classification of Air Conditioning System) | 15 (3 minggu) | 8 |  2 PROJEK SARJANA MUDA |
| 9 Okt 2023 – 23 Okt 2023 | BMMU 4774 (Bachelor Degree Project 2) | 80 (16 minggu) | | |
| 9 Okt 2023 – 23 Okt 2023 | BMMU 3212 Industrial Training | 6 Bulan (24 minggu) | 8 | 3 INDUSTRIAL TRAINING |

PEMBANGUNAN DOKUMENTASI PERANCANGAN

LANGKAH KEDUA

1. Pemurnian *Teaching Plan* untuk kursus mod industri.
2. Tentukan topik-topik penting untuk mencapai *Learning Outcome* kursus. (14 minggu kuliah → 4 /5 /6 /7 minggu mengikut takwim)
3. Tukar topik – topik tersebut kepada tugas mingguan.
→ **Weekly Summary Student Guideline**
(tugas adalah bersesuaian dengan tahap taksonomi kursus)

PEMBANGUNAN DOKUMENTASI PERANCANGAN

LANGKAH KEDUA (samb.)

Case Study perlu formal report? Atau presentation slide sahaja mencukupi?

4. Fikirkan satu case study yang merangkumi tugas-tugas yang diberikan. (Tugas minggu 1 + 2 + 3 = *Case study*)
5. Minggu terakhir adalah merupakan minggu penyediaan Case Study

PEMBANGUNAN DOKUMENTASI PERANCANGAN

01 WEEKLY SUMMARY STUDENT GUIDELINE

| Course Content Outline | |
|---|--|
| Introduction to Quality: a. Concept & Definition b. Quality and Profitability c. Traditional and Total Quality Management | |
| Total Quality Management (TQM) a. Principles of TQM b. Implementation of TQM in Organizations c. Barriers to TQM | |
| Continuous & Full-time Model Effect Analysis (FMEA) | |
| Quality Tools and Techniques Seven Basic QC Tools | |
| Managing Total Quality in Organizations (part 1) a. Leadership & Strategic Planning b. Leadership for Quality c. PDCA Cycle | |
| Managing Total Quality in Organizations (part 2) a. Quality Control Circle (QCC) b. Quality Improvement Initiatives c. Benchmarking d. Six Sigma | |
| Statistical Process Control (SPC) a. Control Chart for variables (i.e. bar chart, R-chart) b. Control Chart for Attributes (p-chart, np-chart) | |
| Process Capability a. Process Capability Ratio, Cp, b. Process Capability Index, Cpk | |
| Problem Solving and Decision Making a. General procedure for Problem Solving b. Root Cause Analysis c. Decision Making Process | |
| Quality Management Systems, Audit and Awards (part 1) a. ISO 9000:2015 b. Process Based Quality Management System c. ISO 14001 d. TS 16949 | |
| Quality Management Systems, Audit and Awards (part 2) a. Internal Quality Audit b. Customer Towards ISO 9001 Implementation in Malaysia | |
| Quality of Design a. Quality Function Deployment b. Concurrent Design c. Role of Supplier Related to Design Quality | |
| Quality of Conformance a. Inspection Teaming b. The Cost of Quality c. Product Liability d. Calibration Cycle | |
| Quality of Performance a. Reliability and Measurement System Analysis b. Six Sigma Study | |

| WEEKLY SUMMARY STUDENT GUIDELINE | |
|---|--|
| WEEK 1: INTRODUCTION TO QUALITY | |
| Course Learning Outcomes | <ul style="list-style-type: none"> Explain the basic quality principles and practices, quality solving techniques and product reliability related to manufacturing process (C2, P4, A2) Identify the manufacturing process quality problem using appropriate problem solving techniques (P4, P4, A2) Perform the ability to apply the quality control tools (P4, P4, A2) |
| Week 1: Introduction to Quality | <ul style="list-style-type: none"> Find the company's profile or Quality Organization Chart. Explain the function and roles of quality department. Find the company's Key Performance Index (KPI) in terms of quality quality management system (e.g. ISO 9001:2015, TS 16949, IATF 16949). |
| Week 2: Quality Tools | <ul style="list-style-type: none"> Identify process included in the control plan (e.g. assembly parts quality, tool location, assembly condition). Identify production process characteristics (e.g. normal distribution, part number, quantity, test, tools). Identify production process specification (e.g. target, range, visual inspection, gap, trend, no test, no test). Evaluation measurement techniques (e.g. visual inspection, gage, product code, no test). |
| Week 3: Quality Tools and Techniques | <ul style="list-style-type: none"> Find example of quality tools used at your place (e.g. histogram, check sheet, cause and effect diagram, fishbone diagram), graph, chart, scatter diagram and control chart). |
| Week 4: Managing Total Quality in Organizations | <ul style="list-style-type: none"> Identify a problem at your workplace. Implement a PDCA (plan, do, check, action). |
| Week 5: Problem Solving | <ul style="list-style-type: none"> Define one quality problem in the company. Identify root cause of the problem. Analyze the problem. |

Sesuai dengan tahap taksonomi (E.g. C2, P4, A2)

PEMBANGUNAN DOKUMENTASI PERANCANGAN

LANGKAH KETIGA

1. Penetapan **kaedah penilaian dan pentaksiran** (kursus WBL, PSM)
2. Pembangunan rubrik penilaian dan pentaksiran.

REKABENTUK PENILAIAN KURSUS WBL

Hasil benchmarking PSAS (Kursus WBL)

| CLO | Domain | Assessment Method | Marks |
|-------|-------------|--|-------|
| CLO 1 | Cognitive | Case Study Presentation (case study report 20%, presentation skills 10%) | 30% |
| CLO 2 | Psychomotor | Weekly report | 40% |
| | | Student Performance Evaluation (Practical) – Weekly report – 60% out of 30% | 30% |
| CLO3 | Affective | Student Performance Evaluation Form (Generic Skill) – 40% out of 30% | |

Rujukan: GP Pelaksanaan WBL POLISAS

REKABENTUK PENILAIAN KURSUS WBL

Hasil benchmarking UTHM (Kursus WBL & PSM)

| | | |
|------------|---|---|
| Delivery | INDUSTRY ✓ T&L Practical ✓ T&L according to study guide prepared by lecturer | FPTV / LECTURER ✓ T & L Theory ✓ T & L theory implement in F2F mode and online session |
| Monitoring | 3 times monitoring base on no of course taken ✓ Presentation case study ✓ Performance evaluation according to subject ✓ Proposal evaluation ✓ Proposal presentation | |
| Assessment | INDUSTRY COURSES SUBJECT ✓ Performance Evaluation: 60% (Practical task 40% & generic skill 20%) FYP 1 & 2 ✓ Logbook : 10 % ✓ Performance evaluation: 30% (Practical task 20% & generic skill 10%) | FPTV / LECTURER COURSES SUBJECT ✓ Presentation : 15% ✓ Case Study : 15% ✓ Weekly Summary : 10% FYP 1 & 2 ✓ Thesis Proposal 40% ✓ Presentation : 20% |
| Grading | INDUSTRY ✓ Practical task 30% ✓ Generic skills 18% | FPTV / LECTURER ✓ Presentation : 20% ✓ Case study : 30% ✓ Weekly summary : 10% |

Rujukan: Module Creating Rubric FPTV UTHM

REKABENTUK PENILAIAN KURSUS WBL

Hasil bengkel WBL Siri 1 2022 Semakan semula WBL Siri 2 2022

| CLO | Domain | Assessment Method | Marks | |
|-------|-------------|---|--------------------|------------------|
| CLO 1 | Cognitive | Presentation | 20% 10% | Lecturer |
| | | Case Study Report | 40% 30% | |
| CLO 2 | Psychomotor | Student Performance Evaluation (Practical) Weekly Report Assessment | 20% 40% | Industrial Coach |
| CLO3 | Affective | Student Performance Evaluation (Soft Skill) Soft Skill Rubric | 20% | |

REKABENTUK PENILAIAN KURSUS WBL

4 – POINTS SCALE RUBRIC

There is no specific number for the rating scales for a rubric. The more rating scales, the more difficult to distinguish between one scale to another. In addition, it also becomes a burden to the rater. Too little scale will cause a lack of variation between elements (Schaefer 2008).

Most rubrics use a four-rating scale from 1 to 4. It is recommended to use a 4-point scale to avoid users use middle scale.

| Rating Scale | Standard Description |
|--------------|----------------------|
| 0 | Absent |
| 1 | Poor |
| 2 | Satisfactory |
| 3 | Good |
| 4 | Excellent |

Rujukan: Module Creating Rubric FPTV UTHM

REKABENTUK PENILAIAN KURSUS WBL

02 WEEKLY ASSESSMENT (PSYCHOMOTOR)

INDUSTRIAL
COACH

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MEKANIKA DAN PEMBUATAN
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

WEEKLY ASSESSMENT
ENMF036 – QUALITY MANAGEMENT (photo)

CLO-2: Solve the manufacturing process quality problem using appropriate problem solving techniques (PS, PLC)

Name: _____ Student ID: _____
Industrial Coach: _____ Company: _____

Week 1 Task: Introduction to Quality

- Find the company's profile or Quality Organization Chart
- Explain the function and roles of quality department
- Find the company's key performance index (KPI) in terms of quality/ quality management system (e.g. ISO 9001:2015, TS 16949, ISO 14001)

Evidence should be in logbook record or any document and verified by industrial coach

Instructions:
Mark (1) for following points on a scale of 1 – 4 (1: Absent, 2: Satisfactory, 3: Good, 4: Excellent)

| Task | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1.0 Find the company's profile or Quality Organization Chart | | | | |
| 2.0 Explain the function and roles of quality department | | | | |
| 3.0 Find the company's key performance index (KPI) in terms of quality/ quality management system (e.g. ISO 9001:2015, TS 16949, ISO 14001) | | | | |
| Total marks | | | | |

Cap Rujukan (Company's Stamp)

Tandatangan Industri
(Industrial Coach Signature)
Date: _____

Uthm FAKULTI TEKNOLOGI KEJURUTERAAN
MEKANIKA DAN PEMBUATAN
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

WEEKLY ASSESSMENT
ENMF036 – QUALITY MANAGEMENT (photo)

CLO-2: Solve the manufacturing process quality problem using appropriate problem solving techniques (PS, PLC)

Name: _____ Student ID: _____
Industrial Coach: _____ Company: _____

Week 2 Task: Control Plan

- Identify process included in the control plan (e.g. Incoming parts quality, sort inspection, assembly condition)
- Identify production process characteristic (e.g. torque tightening, part number, quantity, leak, noise)
- Identify production process specification (e.g. torque range, visual inspection, part count, no leak, no noise)
- Explain measurement technique (e.g. visual inspection, part count, no leak, no noise)

Evidence should be in logbook record or any document and verified by industrial coach

Instructions:
Mark (1) for following points on a scale of 1 – 4 (1: Absent, 2: Satisfactory, 3: Good, 4: Excellent)

| Task | 1 | 2 | 3 | 4 |
|--|---|---|---|---|
| 1.0 Identify process included in the control plan (e.g. Incoming parts quality, sort inspection, assembly condition) | | | | |
| 2.0 Identify production process characteristic (e.g. torque tightening, part number, quantity, leak, noise) | | | | |
| 3.0 Identify production process specification (e.g. torque range, visual inspection, part count, no leak, no noise) | | | | |
| 4.0 Explain measurement technique (e.g. visual inspection, part count, no leak, no noise) | | | | |
| Total marks | | | | |

Cap Rujukan (Company's Stamp)

Tandatangan Industri
(Industrial Coach Signature)
Date: _____

Weekly report?
Weekly summary?
Weekly assessment?

REKABENTUK PENILAIAN KURSUS WBL

LECTURER

03 CASE STUDY REPORT RUBRIC (COGNITIVE)

UTeM FAKULTI TEKNOLOGI KEJURUTERAAN
MEKANIKA DAN PEMBUATAN
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

CASE STUDY
ENMF1256 - QUALITY MANAGEMENT

CLO 1: Explain the basic quality principles and practices, quality solving techniques and product reliability related to manufacturing processes (GC, PLD1)

Name: _____ Student ID: _____
Industrial Coach: _____ Company: _____

Week 7 Task: Opportunity for Improvement

- Choose one of the quality issues
- Prepare cards (a5)
- Collect data using quality tools
- Compare the data with the specification standard
- Prepare problem solving report

Report to power contribute

Example: Mock-up sample (case study)

DETAILS FOR CASE STUDY ASSESSMENT RUBRICS

| No. | Aspek | Fail (Mark 1) | Less (2) | Partial (Mark 12) | Not Mark (13) | Pass (1) | Score (Mark) |
|-----|---|---|---|---|---|----------|--------------|
| 1 | Project introduction and/or background | Project introduction and/or background (based on facts) with clear definition of key terms and concepts | Facts well described introduction and/or background (but not with clear definition of key terms and concepts) | Project introduction and/or background is not well constructed and little or no definition of key terms and concepts | Lacks a project introduction and/or background | 18 | |
| 2 | Identify the problem statement and objective involved in this project using appropriate methods | Very clearly identify the problem statement and objective involved by using appropriate methods | Clearly well identify the problem statement and objective involved by using appropriate methods | The presentation of problem statement and objective involved by using appropriate methods is not clearly stated | Lacks/No statement of problem statement and objective involved by using appropriate methods | 28 | |
| 3 | Usage of QC Problem solving tools | Correct use of tool (1) or more QC tools | Partly use of tool (2) or more QC tools | Not use tool (1) | Partly use of QC tools | 18 | |
| 4 | Implementation of PDCA (Plan-Do-Check-Act) | Excellent implementation of PDCA | Good implementation of PDCA | Moderate implementation of PDCA | Poor implementation of PDCA | 25 | |
| 5 | Root cause analysis in problem solving (fishbone Diagram & 5-whys analysis) | Excellent analysis in problem solving (fishbone Diagram & 5-whys analysis) | Good analysis in problem solving (fishbone Diagram & 5-whys analysis) | Moderate analysis in problem solving (fishbone Diagram & 5-whys analysis) | Poor analysis in problem solving (fishbone Diagram & 5-whys analysis) | 25 | |
| 6 | Presentation Style (Format, clarity, and organization) | The presentation style is well developed and organized. Sentences and paragraphs are grammatically correct. Format is good. Font size is readability of paper | The presentation style is well developed and organized. Sentences and paragraphs are grammatically correct. Format is good. | The presentation style is well developed and organized. Sentences and paragraphs are grammatically correct. Format is good. | The presentation style is well developed and organized. Sentences and paragraphs are grammatically correct. Format is good. | 18 | |

/100

Tandatangan Pensyarah
(Lecturer's Signature)
Date: _____

REKABENTUK PENILAIAN KURSUS WBL

LECTURER

04 PRESENTATION RUBRIC (COGNITIVE)

UTeM FAKULTI TEKNOLOGI KEJURUTERAAN
MEKANIKA DAN PEMBUATAN
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

PRESENTATION RUBRIC

ENMF1256 - QUALITY MANAGEMENT

CLO 1: Explain the basic quality principles and practices, quality solving techniques and product reliability related to manufacturing processes (GC, PLD1)

Name: _____ Student ID: _____
Industrial Coach: _____ Company: _____

| No. | Aspek | Fail (Mark 1) | Less (2) | Partial (Mark 12) | Not Mark (13) | Pass (1) | Score (Mark) |
|-----|----------------------------------|---|---|---|---|----------|--------------|
| 1 | Original case study introduction | The presentation is not well organized, and the presentation is not clear and easy to follow | The presentation is not well organized, and the presentation is not clear and easy to follow | The presentation is not well organized, and the presentation is not clear and easy to follow | The presentation is not well organized, and the presentation is not clear and easy to follow | 18 | |
| 2 | Problem Solving | Background (problem, data and existing strong and weak decision based on gathered information, ideas and current situation) | Background (problem, data and existing strong and weak decision based on gathered information, ideas and current situation) | Background (problem, data and existing strong and weak decision based on gathered information, ideas and current situation) | Background (problem, data and existing strong and weak decision based on gathered information, ideas and current situation) | 18 | |
| 3 | Analysis of data | Excellent ability to interpret and interpret the process (analysis, graphs, tables, and other information with clear and concise) | Excellent ability to interpret and interpret the process (analysis, graphs, tables, and other information with clear and concise) | Excellent ability to interpret and interpret the process (analysis, graphs, tables, and other information with clear and concise) | Excellent ability to interpret and interpret the process (analysis, graphs, tables, and other information with clear and concise) | 18 | |

| | | | | | | | |
|-------|-------------------------------|---|---|---|---|-----|--|
| 4 | Conclusion and recommendation | Conclusion is not supported by evidence and is not clear and easy to follow | Conclusion is not supported by evidence and is not clear and easy to follow | Conclusion is not supported by evidence and is not clear and easy to follow | Conclusion is not supported by evidence and is not clear and easy to follow | 18 | |
| 5 | Summary | Summary is not clear and easy to follow | Summary is not clear and easy to follow | Summary is not clear and easy to follow | Summary is not clear and easy to follow | 18 | |
| TOTAL | | | | | | 120 | |

Tandatangan Pensyarah
(Lecturer's Signature)
Date: _____

REKABENTUK PENILAIAN KURSUS WBL

INDUSTRIAL
COACH

05_SOFT SKILL RUBRIC (AFFECTIVE)

UNIVERSITI TEKNOLOGI KUALA LUMPUR
FACULTY OF TECHNOLOGY, KUALA LUMPUR
UNIVERSITY TEKNOLOGI MALAYSIA SELANGOR

SOFT SKILL RUBRIC

COMP 1234 - QUALITY MANAGEMENT
(ILO 3: Perform the daily to apply the quality control plan (ILO 3.1.1))

Name: _____ (Student ID: _____)

Industrial Coach: _____ (Company: _____)

| COMPETENCE | CRITERIA | LEVEL | INDICATORS | SCORE | REMARKS |
|---------------|---|---|---|---|---|
| 1. Knowledge | 1.1. Understands the concept of quality management and its importance in the organization. | 1.2. Understands the concept of quality management and its importance in the organization. | 1.3. Understands the concept of quality management and its importance in the organization. | 1.4. Understands the concept of quality management and its importance in the organization. | 1.5. Understands the concept of quality management and its importance in the organization. |
| 2. Skills | 2.1. Applies the concept of quality management in the organization. | 2.2. Applies the concept of quality management in the organization. | 2.3. Applies the concept of quality management in the organization. | 2.4. Applies the concept of quality management in the organization. | 2.5. Applies the concept of quality management in the organization. |
| 3. Attitudes | 3.1. Shows a positive attitude towards quality management. | 3.2. Shows a positive attitude towards quality management. | 3.3. Shows a positive attitude towards quality management. | 3.4. Shows a positive attitude towards quality management. | 3.5. Shows a positive attitude towards quality management. |
| 4. Competence | 4.1. Demonstrates the ability to apply the concept of quality management in the organization. | 4.2. Demonstrates the ability to apply the concept of quality management in the organization. | 4.3. Demonstrates the ability to apply the concept of quality management in the organization. | 4.4. Demonstrates the ability to apply the concept of quality management in the organization. | 4.5. Demonstrates the ability to apply the concept of quality management in the organization. |

Signature of Industrial Coach: _____
(Date: _____)

| | | | | | |
|---------------|--|--|--|--|--|
| 1. Knowledge | Understand the concept of quality management and its importance in the organization. | Understand the concept of quality management and its importance in the organization. | Understand the concept of quality management and its importance in the organization. | Understand the concept of quality management and its importance in the organization. | Understand the concept of quality management and its importance in the organization. |
| 2. Skills | Apply the concept of quality management in the organization. | Apply the concept of quality management in the organization. | Apply the concept of quality management in the organization. | Apply the concept of quality management in the organization. | Apply the concept of quality management in the organization. |
| 3. Attitudes | Shows a positive attitude towards quality management. | Shows a positive attitude towards quality management. | Shows a positive attitude towards quality management. | Shows a positive attitude towards quality management. | Shows a positive attitude towards quality management. |
| 4. Competence | Demonstrates the ability to apply the concept of quality management in the organization. | Demonstrates the ability to apply the concept of quality management in the organization. | Demonstrates the ability to apply the concept of quality management in the organization. | Demonstrates the ability to apply the concept of quality management in the organization. | Demonstrates the ability to apply the concept of quality management in the organization. |

Signature of Industrial Coach
(Company's Stamp)

Signature of Industrial Coach
(Date)

PEMBANGUNAN DOKUMENTASI PERANCANGAN LANGKAH KEEMPAT

1. Kemaskini *Teaching Plan*. Sesuaikan SLT untuk DL / IL / IG
 - DL – Sesi pensyarah facilitate pelajar terhadap tugas mingguan yang diberi (1 – 2 jam seminggu *LECTURE*)
 - IL – Masa pelajar berusaha menyelesaikan tugas diberikan. Buat temuramah, pemerhatian kerja, analisa kerja, dsbnya. *PRACTICAL*
 - IG - Sesi *coaching* bersama *Industrial Coach* (1 – 2 jam seminggu *GUIDED LEARNING* (NF2F))

PEMBANGUNAN DOKUMENTASI PERANCANGAN

LANGKAH KEEMPAT (samb.)

2. Formulasikan SLT *Teaching & Learning vs Assessment*
contoh: 75% T&L, 25% Assessment

Untuk kursus 6 kredit: SLT= 240, ELT= SLT/80% = 300
75% T&L = 225 jam, 25% Assessment = 75 jam.

3. Selaraskan *Independent Learning* (NF2F) dalam T&L dan *Continuous Assessment* F2F (penilaian bersemuka) dan NF2F (proses dokumentasi, kemaskini *logbook*, persediaan *case study report* dan pembentangan).

PEMBANGUNAN DOKUMENTASI PERANCANGAN

06_ TEACHING PLAN

Information regarding Student Learning Time (SLT) based on the following: yang dipaparkan dalam PLO adalah berdasarkan kepada Effective Learning Time (ELT) i.e. effective independent question assessment = 80%

| QUALITY MANAGEMENT (SEM 2) | | | | |
|--------------------------------|---|------------------|--------------------|------|
| Course Name | QUALITY MANAGEMENT (SEM 2) | | | |
| Course Code | QMT2024 | | | |
| Prerequisite | The course provides a useful insight into concepts, theories and application of quality management in an organization. Student will be introduced to tools and techniques of quality that are useful for practice, projects and process improvement. This also includes approaches for planning, controlling and improving the quality management function of a system. Quality is a universal concept. Its application and management encompasses a wide variety of field. Therefore, this course is suitable for individuals who aspire to be managers in their organizations in future regardless of their area of specialization. | | | |
| Names of Academic Staff | Mohd Sultan bin Ali Kocak, Anwar bin Ridwan, Dr. Luqman Hakim bin Harizah, Mohd Hafiz bin Abdul Kader, Ahmed Zai Hassan bin Che Mahal, et | | | |
| Credit Value | 6 | | | |
| Course Learning Outcomes (CLO) | <p>CLO1 Explain the basic quality principles and practices, quality solving techniques and product reliability related to manufacturing process (C2, P, C1)</p> <p>CLO2 Solve the manufacturing process quality problem using appropriate product solving techniques (P4, P1, C2)</p> <p>CLO3 Perform the ability to apply the quality control plans (A2, P1, C4)</p> | | | |
| Course Learning Outcomes (CLO) | Program Learning Outcomes (PLO) | Teaching Methods | Assessment Methods | |
| CLO1 | PLO1 | PLO2 | PLO3 | PLO4 |
| CLO2 | PLO1 | PLO2 | PLO3 | PLO4 |
| CLO3 | PLO1 | PLO2 | PLO3 | PLO4 |

PEMBANGUNAN DOKUMENTASI PERANCANGAN

LANGKAH KELIMA

1. Pembentangan dengan wakil industri berkenaan kesesuaian tugas kursus yang diberikan.
2. Pembentangan dan latihan kepada jurulatih industri berkenaan program WBL yang akan dijalankan kepada industri tersebut.

BAGAIMANA MENJALANKAN PSM 1 & 2?

PEMBANGUNAN DOKUMENTASI PERANCANGAN

PROJEK SARJANA MUDA

1. Memastikan PSM ialah *real industry case study*.
2. Sekurang-kurangnya 2 penyelia fakulti dan 2 pelajar (untuk *cross examiner technical report/ thesis* pelajar)
3. PSM 1 lebih kepada penyediaan FYP Proposal dan dimasukkan dalam format thesis. *Chapter 1 - 3*
(Amalan di FTKMP: laporan thesis berformatkan *technical report*)
4. PSM 2 menilai *Chapter 3 – 5* berserta format.

REKABENTUK PENILAIAN PSM1&2

Hasil bengkel SRR Siri 1 2022
Semakan semula WBL Siri 2 2022

| CLO | Domain | Assessment Method | Marks | |
|-------|-------------|--|--------------------|------------------|
| CLO 1 | Cognitive | Project Proposal | 10% | SV Fakulti |
| | | Thesis | 40% 30% | |
| CLO 2 | Psychomotor | Student Performance Evaluation (Practical) | 30% | Industrial Coach |
| CLO3 | Affective | Presentation | 20% | Examiner Fakulti |
| | | | 0% 10% | |

REKABENTUK PENILAIAN PSM

DOKUMEN PROJEK SARJANA MUDA

1. *Project Proposal Template*
2. *Thesis Technical Report Template*
3. *Checklist for PSM Technical Report*
4. *PSM 1 & 2 Rubric*

PEMBANGUNAN DOKUMENTASI PERANCANGAN

LATIHAN INDUSTRI

1. Latihan Industri mengguna pakai format penilaian Latihan Industri mod perdana.(buku log, laporan latihan industri, pembentangan)
2. Laporan LI adalah *focused case study report*.
 - i. Projek industri baru yang diberikan oleh jurulatih industri.
 - ii. Sambungan/ kesinambungan projek PSM.

