



UNIVERSITI TEKNIKAL MALAYSIA MELAKA

FAKULTI KEJURUTERAAN MEKANIKAL

KERTAS KERJA

PROGRAM CERAMAH DAN PERSEMBAHAN POSTER

“Pengenalan kepada Metrologi dan Kaedah Analisis”

10 Mac 2010

Disediakan oleh :

Imran Syakir Mohamad

JABATAN TERMAL-BENDALIR, FKM

Tarikh : 13 Januari 2010

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

FAKULTI KEJURUTERAAN MEKANIKAL

**PERMOHONAN MENGADAKAN
PROGRAM CERAMAH & PERSEMBAHAN POSTER
“Pengenalan kepada Metrologi dan Kaedah Analisis”
FAKULTI KEJURUTERAAN MEKANIKAL**

TUJUAN

Kertas kerja ini adalah bertujuan untuk mengadakan Program Ceramah dan Persembahan Poster untuk pelajar-pelajar tahun satu yang mengambil subjek Kaedah Ujikaji BMCU 1022 (1BMCT2 dan 1BMCA2), yang akan diadakan pada 10 Mac 2010 (Rabu) bertempat di Dewan Seminar FTMK, Universiti Teknikal Malaysia Melaka.

LATARBELAKANG

Ceramah akan disampaikan oleh 2 orang penceramah. Penceramah pertama adalah seorang metrologist dari SIRIM manakala penceramah kedua seorang Pegawai penyelidik dari NANOCEN, UM. Biodata/CV penceramah dalam **Lampiran A-1 & Lampiran A-2**. Persembahan Poster pula berasaskan Tugas 2 (**Lampiran B**). Markah akan diberikan oleh panel penilai yang terdiri daripada 2 pensyarah dan 2 penceramah jemputan. Markah keseluruhan adalah 15 markah.

ASAS PERTIMBANGAN

Program ini wajar dilaksanakan bagi memberikan pendedahan kepada pelajar berkenaan dengan konsep metrologi dan analisis. Dengan adanya program ini, pelajar diharap memperolehi gambaran yang lebih jelas berkaitan metrologi dan kaedah analisis. Selain itu, persembahan poster dijangka dapat meningkatkan keupayaan berinteraksi dan komunikasi dua hala. Dengan penganjuran program ini juga, sebahagian daripada Sasaran Kerja Tahunan (SKT) Jabatan dan Fakulti untuk tahun 2010 akan dapat dipenuhi.

PENYERTAAN

- a) Semua pelajar yang mengambil subjek Kaedah Ujikaji BMCU 1022 Semester 2 Sesi 2009/2010. Jumlah keseluruhan pelajar ialah 130 orang.
- b) Beberapa staf Jabatan Termal-Bendalir juga akan dijemput untuk menghadiri program tersebut iaitu seramai 4 orang.
- c) Aturcara program adalah seperti di dalam **LAMPIRAN C**.

IMPLIKASI KEWANGAN

Anggaran jumlah kewangan yang diperlukan bagi menjalankan program ini adalah seperti dalam Jadual 1.

Jadual 1: Anggaran kos

i) Makanan untuk staf dan penceramah (RM 5.00 seorang) 6 orang x RM 5.00	RM 030.00
ii) Makanan pelajar (RM 3.00 seorang) 130 orang x RM 3.00	RM 390.00
iii) Bayaran Penceramah (RM 200.00 sejam) RM 200.00 x 1 jam x 2 orang	RM 400.00
JUMLAH	RM 820.00

SYOR

Dengan segala hormatnya saya memohon Yang Berbahagia Dekan mempertimbangkan program ini dan seterusnya meluluskan permohonan untuk mengadakan program ini.

LAMPIRAN A-1



Dr Ahmad Makinudin Dahlan works at the National Metrology Laboratory of SIRIM Berhad as Principal Metrologist. His main responsibility is the development and maintenance of the primary length standards and other length and dimensional related areas. His past activities include the establishment of the reference standards for length, high precision angle facilities and surface topography measurement in his institution. His current interests are in the field of laser application for high precision length and dimensional measurement and nanometrology.

Professional Qualification

Dr Ahmad Makinudin Dahlan obtained his BSc from University of Malaya Kuala Lumpur in 1983. He received his MSc in Physics from Tohoku University, Japan in 1993. In 2000, he graduated from University of Manchester Institute of Science and Technology to obtain his PhD.

Experience

Currently, Dr Ahmad Makinudin involves in the following activities:

- Technical assessor for the MS ISO/IEC 17025 under the Malaysian National Laboratory Accreditation Scheme,
- Drafting Member for the Technical Committee for ISO TC 229: Nanotechnology,
- Working group member for ISO TC 229 WG2: Measurement and Characterisation,
- Drafting member for ISO Technical Committee TC1: Screw thread and fasteners,
- Member for the Asia Pacific Metrology Programme (APMP) Technical Committee for Length (TCL),
- Member of Standards Malaysia Sectoral Committee for Calibration (STC1),
- Technical expert for Malaysian aerospace project – ANGKASA,
- Technical reviewer for APMP Technical Committee for Length.
- Malaysian Representative in South East Asian –European Union SEA-EU-NET Project since 2008.

Contact address:

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Lampiran A-2

EDUCATION

University of Malaya (2005)

- Bachelor Degree of Science with honour (Applied Chemistry)

WORKING EXPERIENCES

R&D Research Officer-Nano Technology Centre (NANOCEN), University of Malaya (October 2009 – Now)

- *Run BET operation of surface area and pore volume measurement*
- *Categorize tested catalyst samples for variety and suitable of end consumption and application*
- *Catalyst consultant*
- *Research testing promoter and consultant*
- *Developing activated carbon adsorbent for air and waste water treatment and filtration.*
- *Presenting and give talk regarding BET measurement and theories to incoming sample producers.*

Instructor-Sciencegates Sdn Bhd (Oct 2008 – Sept 2009)

- *BET Instructor and trainer at UTP, UiTM, AMREC SIRIM, USM Engineering Campus, UM and Unimap*
- *Categorize catalyst sample for adsorbent application (micro, meso and macro features)*
- *BET seminar at Boynton beach florida USA and NC Convention of BET measurement Liverpool March 2008*
- *Give talk to master student UMP regarding BET performance and influences to adsorbent nanomaterial characterization.*



ROSTAM BIN OMAR

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R&D Research Officer-NanoC Sdn Bhd (Dec 2006 – Sept 2008)

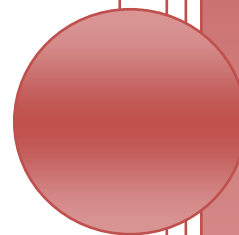
- *Run BET operation of surface area and pore volume measurement*
- *Categorize tested catalyst samples for variety and suitable of end consumption and application*
- *Catalyst consultant*
- *Research testing promoter and consultant*
- *Developing Activated Carbon adsorbent for air and waste water treatment and filtration.*
- *Presenting and give talk regarding BET measurement and theories to in coming sample producers.*
- *Marketing on those related to solid material testing*
- *Involved in R&D administration*

Science Officer-Combinatorial Catalysis Technology Centre (COMBICAT), University of Malaya (March 2005 – Dec 2005)

- *Run BET operation of surface area and pore volume measurement*
- *Categorize tested catalyst samples for variety and suitable of end consumption and application*
- *Catalyst consultant for BET measurement*

SKILLS

Characterize catalyst sample properties (activated carbon, surfactant, oleo & molecular sieve) based on surface area, porosity and other chemical elements



Lampiran B

BMCU 1022 EXPERIMENTAL METHODS

ASSIGNMENT 2

Instruction:

This is a group work. The maximum number of students per group is seven (will allocate by lecturer).

Select one physical quantity of an object which has a base unit. For example, the height of the students in your class/batch/course/university or the mass of the chocolates sold in the cafeteria. You have to collect data set of $30 \leq N \leq 60$. The data can be collected through a survey or by conducting an experiment. You should attach all the procedures prior to the data collection.

All the data should be type/written clearly on your report. Whenever necessary, you may use **Microsoft Excel** to construct diagrams and assist your analysis. All your finding should be demonstrate and summarize for the poster presentation. Marks will be given by selected panel. (**Technical Report: 10 marks, Poster Presentation: 5 marks, Best Poster: extra 2 marks**).

Task:

- A. Select any one quantitative data for your project.
- B. Conduct a survey or experiment to collect the data. All the procedures and equipment pertaining to data collection should be clearly recorded.
- C. From your quantitative data:
 - i. Present your data, i.e. any kind of presentation that will easily be understood or attract the readers.
 - ii. Analyze the trend of the data. This includes the mean, median and mode, and if possible the five – number summary (minimum, first quartile, median, third quartile, maximum).
 - iii. Calculate the variance and standard deviation for your data set.
 - iv. Briefly give your own comment to summarize your data set based on any calculations or any diagrams that you have done.
- D. Write a comprehensive technical report that describes your project. Show all related calculations or assumptions used to complete this project.
- E. Summarize your finding for the poster presentation (A1 size).
- F. Please cite the books, journals, magazines or websites that you have gained the information as references (at least 4 sources). **Hint:** A statistic reference book is a good source to start this project. However, please noted that you're in Experimental Method class, so more emphasizes is focused on the experimental procedure and techniques of reporting.

Technical Report & Poster guide:

No	Item
1	Group details
2	Abstract
3	Introduction
4	Experimental <ul style="list-style-type: none">- Quantitative data- Measuring device
5	Result & Discussion <ul style="list-style-type: none">- Data collection method and presentation style- Data calculation and analysis
6	Discussion and conclusion
7	References

Lampiran C

CADANGAN ATURCARA

PROGRAM CERAMAH DAN PERSEMBAHAN POSTER **“Pengenalan kepada Metrologi dan Kaedah Analisis”** **FAKULTI KEJURUTERAAN MEKANIKAL**

Tempat : Dewan Seminar FTMK

Tarikh : 10 Mac 2010

- | | | |
|-----------|---|---|
| 2.00 p.m. | - | Kedatangan staf dan pelajar FKM |
| 2.15 p.m. | - | Bacaan Doa |
| 2.20 p.m. | - | Ucapan/Taklimat Program |
| 2.30 p.m. | - | Ceramah 1
Dr Ahmad Makinudin – SIRIM BERHAD
Tajuk: Pengenalan kepada Metrologi (cadangan) |
| 3.00 p.m. | - | Ceramah 2
Rostam Omar – NANOCEN, UM
Tajuk: Kaedah Analisis (cadangan) |
| 3.30 p.m. | - | Forum Interaktif
Penceramah 1, Penceramah 2 dan Perantara
Tajuk: Keperluan dan Kepentingan Pengukuran dan Analisis di Malaysia (cadangan) |
| 4.30 p.m. | - | Sesi Soal-Jawab |
| 4.45 p.m. | - | Persembahan Poster |
| 5.30 p.m. | - | Jamuan ringan |
| 5.45 p.m. | - | Majlis Bersurai |