



# BULLETIN JSG

Jabatan Sains Gunaan  
UiTMKPP

Issue 3

<http://www.denang.uitm.edu.my>

June 2007

## Karnival Pendidikan

*Kembara Ilmu Tanpa Sempadan, UiTM Menjadi Pilihan, Dalam Merealisasi Impian....*



Antara AJK yang terlibat

### Persiapan Hari Karnival .....



### Menarik di dalam.....

Bengkel Pra Diploma (Sains) Siri 2.....

Lawatan Ilmu Kali Ke-2.....

Scientist & glossary???

Fun in Science!!!

Do you know something about chlorine???

### Editorial Board

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## FAMOUS LANDMARKS

### Vital Statistics:

Location: Kuala Lumpur, Malaysia

Completion Date: 1998

Cost: \$1.6 billion

Height: 1,483 feet

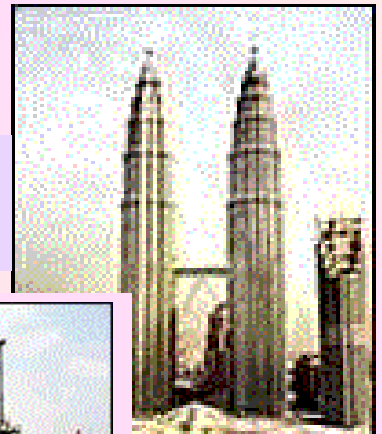
Stories: 88

Materials: Concrete, Steel

Facing Materials: Aluminum, Stainless Steel

Engineer(s): Thornton-Tomasetti and Ranhill Bersekutu

## Fun in Science



Until 1998, the world's tallest skyscraper had always been in the United States. But that year, Malaysia's Petronas Towers laid claim to this distinction. Squeaking past the Chicago [Sears Tower](#) by 33 feet, the [spires](#) atop the Petronas Towers peak at an impressive 1,483 feet. Yet there's a controversy. The highest occupied floor in the Sears Tower is actually 200 feet higher than the top floor of the Petronas Towers, and its antennae stretch higher still. So why are the Petronas Towers considered the world's tallest buildings? According to the Council on Tall Buildings and Urban Habitat, spires count, but antennae don't. Spires do not contain floors, but they are counted in the world's tallest building race for one architectural reason: they're nice to look at.

## Petronas Towers

### Fast Facts:

The Petronas Towers were featured in the blockbuster movie *Entrapment*, starring Sean Connery and Catherine Zeta-Jones. It took 36,910 tons of steel to build the Petronas Towers. That's heavier than 3,000 elephants! It takes 90 seconds to travel from the basement parking lot to the top of each tower. Together, the towers have 32,000 windows. It takes window washers an entire month to wash each tower just once!

Adapted from : <http://library.thinkquest.org/engineering4u>

## Engineering 4 U

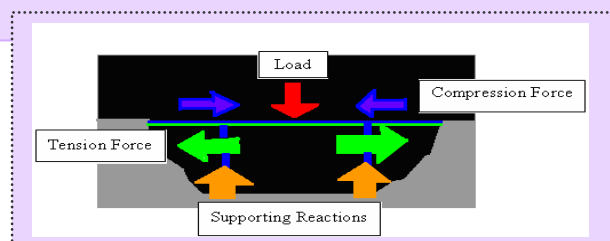
"The most fun thing about my job is seeing something you've designed being constructed or people using the facilities after construction. Seeing ... something on site that gets torn down and replaced with new construction is a very satisfying part of this job." ~Patricia Frayre

### How Engineering Relates to Math and Science

Engineering came from the Latin word *ingeniare*. *Ingeniare* means to design or create. Engineers try to design or create new products, structures, and machines by using already available resources, and resources they themselves created. Specialized engineering developed around 1750. Before then it used to be all buildings, roads, bridges, canals, or weapons! As more knowledge about science and math was gained, specialized branches of engineering were created. This happened around the 1700's and 1800's. Now that there are more branches, engineers work more closely together.

Engineering is a job that takes science to an everyday use. The science that is taken into engineering is the calculations of how something is going to react for everyday problems, such as winds, rain, lightning, traffic, the environment, and etc. Also, tension and compression are a major factor for math and science. This is so because tension and compression is science by being a force. Tension and compression relates to math by being something that has to be supported by exact measurements, and calculations. As you can see on the picture below, the tension is caused by the cars and the weight the bridge is supporting. The tension from the bridge shoots up on the wires in until it reaches the top. The compression is the force caused by the tension and gravity of the earth's atmosphere. The compression is guided by the vertical poles. Once this force reaches the surface of the bridge, it guided down another bar going into the land and/or water. You may think that engineering just requires construction workers well, building a structure or bridge can take 4-8 years and can take more than 600 people to finish a structure. Can you believe that there is a job just for measuring the math and science of tension and compression.

Engineering relates to math by taking the exact calculations of the problems, and putting that to use. Such as a bridge, you must calculate the measurements and strength needed to hold up its own weight. This is how engineering relates to math and science.



# LAWATAN ILMU KALI KE 2

## Projek Khidmat Masyarakat, Pusat Kecemerlangan Jabatan Sains Gunaan (ASDEC)



Pada 25 Mei 2007, Jabatan Sains Gunaan telah mengadakan program khidmat masyarakat di sekitar kawasan Seberang Perai Selatan. Lawatan ini bertujuan untuk membuka minda pelajar cemerlang peringkat menengah rendah. Program ini adalah kesinambungan daripada Lawatan Ilmu kali Pertama yang telah berjaya diadakan pada 26 Mei 2006.

Pada kali ini JSG hanya menumpukan Sekolah Menengah Sungai Aceh, Nibong Tebal. Program ini juga telah berjaya menanam semangat para pelajar sekeh tersebut untuk menjejaki ke menara gading. Seramai 30 orang pelajar tingkatan 2 yang berpotensi cemerlang dengan pendapatan isi rumah kurang dari RM1000 telah dipilih untuk menyertai program ini.

Di antara tempat-tempat yang dilawati adalah Falkulti Sains Gunaan UiTM Shah Alam, Petrosains KLCC, Pusat Sains Negara dan Planetarium. Seramai 10 ahli jawatan kuasa yang terdiri daripada staff JSG yang terlibat dalam menayakan program ini. Ahli jawatan kuasa juga ingin mengucapkan terima kasih kepada semua pihak yang terlibat secara langsung mahupun tidak langsung bagi menayakan program ini.

Semoga usaha murni semua kakitangan JSG UiTM Pulau Pinang ini dapat memupuk semangat anak luar Bandar sekitar Seberang Perai Selatan untuk terus cemerlang di masa hadapan. Program seperti ini akan terus menjadi agenda tahunan Jabatan Sains Gunaan.



## PROGRAM KECEMERLANGAN AKADEMIK SIRI 2 SESI JANUARI – APRIL 2007

Program Pra Sains diperkenalkan bagi memberi peluang kepada pelajar-pelajar yang mendapat keputusan akademik yang kurang memuaskan di peringkat SPM bagi memperbaiki kelemahan penguasaan subjek sains, matematik dan bahasa inggeris. Jesteru itu peluang ini perlu diberikan penumpuan serius dalam meningkatkan kemahiran pembelajaran yang berkesan selain meningkatkan motivasi pelajar.

Telah banyak usaha dijalankan oleh tenaga pengajar khususnya bagi membekalkan para pelajar dengan pengetahuan yang setanding dengan keperluan kursus dan kehendak semasa. Program ini adalah lanjutan dari Program Kecemerlangan Akademik Siri 1 dimana pelajar-pelajar Pra Diploma (Sains) di bantu untuk mendapat pendedahan tentang teknik-teknik pembelajaran yang berkesan.

Bagi pelajar, Program siri 2 ini diadakan untuk memberi pendedahan tentang teknik-teknik menjawab soalan-soalan peperiksaan akhir. Peserta bengkel akan didedahkan kepada beberapa perkara, antara lain, teknik menjawab, cara mengatur jawapan secara berkesan untuk kursus bagi mengelak kehilangan markah, mengenal kata kunci atau frasa yang penting dalam soalan, mengelak dari kecuaiian dalam menjawab, dan juga pengurusan masa. Di samping itu, program ini juga memberi panduan/galakan/ bantuan secara akademik dan motivasi kepada pelajar-pelajar yang akan menghadapi peperiksaan akhir.

Program ini telah dijalankan di Bilik Perdana, Tingkat 2, Blok Perdana UiTMPP. Ia melibatkan seramai 27 orang pelajar pra diploma. Seramai lima orang penceramah telah dijemput dan kesemuanya yang terdiri daripada mereka yang telah mengajar subject mata pelajaran bagi pra diploma.

Adalah diharapkan Program ini dapat melengkapkan pelajar dengan teknik-teknik yang perlu dan terkini untuk menghadapi peperiksaan akhir dengan lebih cemerlang. Dengan adanya program ini maka di harapkan bilangan pelajar semester satu yang layak ke Diploma selepas berakhir semester ini akan meningkat kepada 65 % peratus berbanding semester lepas 54 %. Ini, sekurang-kurangnya kesemua daripada mereka dapat mengubah kecekapan terhadap cara pembelajaran yang berkesan dan seterusnya berusaha mendapatkan gred yang lebih baik dalam peperiksaan akhir.

## KOLOKUIUM JSG 2007

Jabatan Sains Gunaan, UiTMPP telah mengadakan 2 siri kolokuium pada bulan Mac dan April 2007 yang lepas. Antara tujuan utama diadakan kolokuium tersebut adalah untuk meningkatkan keserjanaan dan kecemerlangan pengajaran dan pembelajaran serta penyelidikan dalam pengajaran sains dan penyelidikan dalam sains & teknologi. Ia juga bertujuan menyediakan tapak bagi perbincangan sesama warga Jabatan untuk mengembangkan intipati akademik disamping dapat mencetuskan ide2 baru kepada penyelidikan yang seterusnya.

Sebanyak 4 pembentangan dari para pensyarah telah diutarakan meliputi tajuk – tajuk: “Table: Simple & Effective Chemistry Education Tool”, “Moles, Molarity & Atoms: Can They See The Difference?”, “Kepentingan Astronomi dari Kacamata Islam” dan “Morfologi Fetus Ultrasound 3 Dimensi Dalam Kandungan”.

Memandangkan program ini sangat bermanfaat dalam meningkatkan “academic discourse” serta sambutan yang amat menggalakkan dari para staf Jabatan, kolokuium ini akan diteruskan sehingga penghujung tahun 2007.

## GLOSSARY

### achromatic

An optical system that will transmit light without breaking it down into its component colors.

### acoustics

The science of the production, transmission, and effect of sound waves.

### adiabatic

Pertaining to any activity that is not accompanied by a gain or loss of heat.

### Bohr theory

A commonly accepted concept of the atom introduced by Niels Bohr in 1913. It holds that each atom consists of a small, dense, positively charged nucleus surrounded by negatively charged electrons that move in fixed, defined orbits about the nucleus, the total number of electrons normally balancing the total positive charge of particles in the nucleus.

Adapted at <http://library.thinkquest.org/>

### TAHNIAH !!!

buat semua warga kampus  
UiTMKPP.

Di atas kecemerlangan yang di capai  
pada Sukan Staf 2007 di UiTM Arau,  
Perlis.

'Majulah Sukan untuk UiTMKPP'

# SCIENTIST

**Niels Bohr** - born Oct. 7, 1885, Copenhagen, Den. d. Nov. 18, 1962, Copenhagen. He was a physicist who was the first to **apply the quantum theory**, which restricts the energy of a system to certain discrete values, to the problem of atomic and molecular structure. For this work he received the **Nobel Prize for Physics in 1922**. He developed the so-called '**Bohr theory of the atom and liquid model of the atomic nucleus.**'

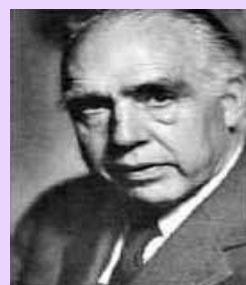
Bohr distinguished himself at the University of Copenhagen, winning a gold medal from the Royal Danish Academy of Sciences and Letters for his theoretical analysis of and precise experiments on the vibrations of water jets as a way of determining surface tension. In 1911 he received his doctorate for a thesis on the electron theory of metals that stressed the inadequacies of classical physics for treating the behavior of matter at the atomic level. He then went to England, intending to continue this work with Sir J.J. Thomson at Cambridge.

Through the early 1920s, Bohr concentrated his efforts tried to develop a consistent quantum theory that would replace classical mechanics and electrodynamics at the atomic level and be adequate for treating all aspects of the atomic world. He also tried to explain the structure and properties of the atoms of all the chemical elements, particularly the regularities expressed in the periodic table and the complex patterns observed in the spectra emitted by atoms. In this period of uncertain foundations, tentative theories, and doubtful models, Bohr's work was often guided by his correspondence principle.

In his **last years**, Bohr tried to point out ways in which the idea of complementarity could throw light on many aspects of human life and thought. He had a major influence on several generations of physicists, deepening their approach to their science and to their lives.

Bohr himself was always ready to learn, even from his youngest collaborators. He drew strength from his close personal ties with his coworkers and with his sons, his wife, and his brother. Profoundly international in spirit, Bohr was just as profoundly Danish, firmly rooted in his own culture. This was symbolized by his many public roles, particularly as president of the Royal Danish Academy from 1939 until his death in 1962. - Encyclopedia Britannica.

Adapted from <http://www.crystalinks.com/bohr.html>



**Niels Bohr**