3 ***University of the Witwatersrand, Johannesburg***

***School of Geosciences***

**Rocks and minerals revealed: An introductory course in geology**

The School of Geosciences at the University of the Witwatersrand will once again be presenting its highly-acclaimed introductory 20 week course on basic geology. If you have ever wondered about the scenery you see whilst walking in the bush, this is a great opportunity to find out more about how the Earth works. There is an economic focus to the course making it suitable for anyone involved in the minerals industry who would like to learn something about the terminology used. However it is suitable for all interested beginners. The course is presented by a range of well-qualified staff with many years of experience. During the course there will be hands-on practical work on mineral and rock identification together with a look at some geological maps. A certificate of participation will be given at the end of the course. No examination is involved, only a self-evaluation practical test in the last week. A minimum number of 15 participants is required to make the course viable. A maximum of 40 participants can be accommodated so register early to avoid disappointment.

Course cost: R5500

Retired participants: R4500

Couple: R8000

Course materials will include a book, printed handouts each week in black and white, course content in colour on a CD, and tea, coffee and sncks during the break. Participants are not expected to provide anything in addition, although a magnifying hand lens would be useful in many of the practical classes.

**Contributing staff include**:

Dr Grant Bybee

Prof. Grant Cawthorn

Dr. Zubair Jinnah

Prof. Roger Gibson

Prof. Judith Kinnaird

Prof. Paul Nex

Prof. Sue Webb

Dr Linda Iaccheri

If there is sufficient interest, staff will run one-day field trips. Potential trips are:-

Vredefort – the world’s greatest disaster.

Tswaing – results of a 15 megaton explosion.

Maropeng and Sterkfontein – the story of us all.

Walter Sisulu Gardens – a walk through time.

The geology of Johannesburg.

With the exception of the latter trip, these can be family outings although unsuitable for children under the age of 6. Field trips would incur a slight extra charge.

The course will begin on Wednesday February 12th at 6 pm in Room 101, School of Geosciences. Please register for the course with Lungelwa Ndevu <lungelwa.ndevu@wits.ac.za>. No invoice will be sent until the minimum number of people have registered for the course. A tentative course programme can be obtained from [Judith.Kinnaird@wits.ac.za](mailto:Judith.Kinnaird@wits.ac.za).

**Rocks and minerals revealed: An introductory course in geology**

Venue: School of Geosciences,

University of the Witwatersrand

**Registration form**

Title\_\_\_\_\_\_\_\_ Surname \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ First Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Postal address \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Code \_\_\_\_\_\_\_\_\_\_\_

Telephone \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mobile \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Email (Please print clearly) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**COST – 20 weeks from 6 pm to 9 pm each Wednesday**

R5500 per participant

R4500 for retired participants

R8000 for a couple

For any queries on the course contact:-

oJudith Kinnaird 011 717 6583 084 696 7228 [judith.kinnaird@wits.ac.za](mailto:judith.kinnaird@wits.ac.za)

Lungelwa Ndevu 011 717 6547 [lungelwa.ndevu@wits.ac.za](mailto:lungelwa.ndevu@wits.ac.za)

Please email this completed form to [lungelwa.ndevu@wits.ac.za](mailto:lungelwa.ndevu@wits.ac.za)

**An invoice will be issued to those who have submitted registration forms once the minimum number of 15 participants have applied for admission to the course**

**Banking Details:** University of the Witwatersrand – First National Bank Braamfontein

Branch code 255005, Account 62151059469

School of Geosciences, University of the Witwatersrand, Private Bag 3, Wits 2050.

Please email a proof of payment. For any queries on payment contact Lungelwa 011 717 6547

**A tentative course programme**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Wk | Lecture - ~ 50 minutes |  | Practical - ~ 2 hours | Staff | |
| 1 | Planet Earth – Why are we special?  The Earth in Space: formation of the Earth and solar system: structure of the Earth | JK | Mineral world: how to appreciate and identify minerals | | JK, PN |
| 2 | The Wonder of Minerals  Mineral Kingdom: abundance of elements; silicate structures, non-silicates | JK | Geological Lego: the building blocks of rocks.  Crystals and minerals | | JK |
| 3 | Probing the Inaccessible Earth: Geophysics, earthquakes | SW | Rock-forming minerals | | GByb |
| 4 | From mountain tops to the depth of the oceans:  Sedimentary rocks and their classification | ZJ | sedimentary rocks | | ZJ |
| 5 | Hot and sweaty: Metamorphic rocks | RG | metamorphic rocks | | RG |
| 6 | Earth and Time – a brief history of our planet | GB | What goes round comes around: the rock cycle - igneous, sedimentary, metamorphic rock relationships | |  |
| 7 | Magmas and minerals: A hot topic  Igneous rocks and their classification | RGC | How to tell a granite from a gabbro:  igneous rocks in hand specimen | | RGC |
| 8 | Plate Tectonics – The Unifying Theory | LI | Geological maps: a story in 4 dimensions | | RG |
| 9 | Under stress: Deforming the Earth; faults, folds, unconformities |  | Reading the rocks on maps | |  |
| 10 | The forces of Vulcan:  Igneous Processes- volcanic rocks | GBy | Looking inside rocks  Introduction to the microscope | | GByb |
| 11 | Igneous Processes- intrusions, fractionation | RGC | Igneous rocks in hand specimen and under the microscope | | RGC |
| 12 | The Bushveld Complex – the greatest ore repository on Earth | RGC | Bushveld prac | | RGC |
| 13 | Other important intrusions | RGC | Kimberlites, carbonatites, granites | | RGC |
| 14 | Igneous Ore-Forming Processes | JK | All that glisters is not gold:  Igneous ore minerals | | JAK |
| 15 | Sedimentary Processes - basins, placers and Richard’s Bay | ZJ | Sedimentary rocks in hand specimen and under the microscope including Wits hoist rocks to gold | | ZJ |
| 16 | Sedimentary Processes -coal, oil | ZJ | sedimentary rocks- porous sandstones, salt etc | | ZJ |
| 17 | Earth and Life | JK |  | |  |
| 18 | Critical Metals | JK | What Africa can contribute to Society’s needs | | JK |
| 19 | The Restless Planet: Earth through Time – Lessons from South Africa (lecture 1) |  | Lessons from South Africa (lecture 2) | |  |
| 20 | Earth: Where to now? |  | Self evaluation practical test | |  |
|  | A walk through time: A visit to the botanical gardens at Roodepoort | | | | RGC |