

MODELO DE PROGRAMA

FACULTAD DE CIENCIAS EXACTAS Y NATURALES

U.B.A.

- 1) Departamento/Instituto de.....
- 2) Carrera de: a) Licenciatura en.....  
  - × b) Doctorado y/o Post-Grado.....
  - c) Profesorado en.....
  - d) Cursos Técnicos en GEOLÓGIA .....
  - e) Cursos de Idiomas.....
- 3) 1er cuatrimestre/2do cuatrimestre Año.....
- 4) No de Código de carrera.....
- 5) Materia INTERPRETACION DE RELACIONES ENTRE LAS ESCALAS DE LA PETROFISICA Y PETROLOGIA MAGMÁTICA .....
- 6) Puntaje propuesto (en caso de tratarse de materias optativas para la licenciatura o de doctorado y/o post-grado) .....
- 7) Plan de estudios Año..... 1992 .....
- 8) Carácter de la materia (obligatoria ú optativa).....
- 9) Duración (anual/cuatrimstral/bimestral/u otra).....
- 10) Horas de clase semanal: a) Teóricas..... d) seminarios  
  - b) Problemas..... e) teóricos-prácticos....
  - c) Laboratorio... f) Total horas.....
- 11) Carga horaria Total.....
- 12) Asignaturas correlativas.....
- 13) Forma de evaluación... EXAMEN FINAL .....
- 14) Programa analítico (adjuntarlo)

  
 ARMANDO C. MASSABIE  
 Director  
 Departamento de Geología

## CURRICULUM VITAE

**Full Name:** David Alan Clark  
**Date of Birth:** 13.1.53  
**Nationality:** Australian  
**Position and Present Employer:** Principal Research Scientist (CSOF7M)  
CSIRO Exploration and Mining  
PO Box 136, North Ryde, NSW 2113

### Tertiary Education:

1971-74 University of Sydney  
B.Sc. (First Class Hons)  
Majoring in Physics

1980-83 University of Sydney  
M.Sc. (part time) in Geophysics.  
Thesis topic "Magnetic properties of pyrrhotite -

applications to geology and geophysics"

### Employment:

March 1975 - December 1976 Scientific Staff Consultant GK Bureau, London  
February 1976 - November 1978 Research Assistant Dept of Geology and Geophysics, University of Sydney  
November 1978 - June 1986 Experimental Scientist, CSIRO Division of Mineral Physics and Mineralogy  
July 1986 - June 1991, Senior Research Scientist CSIRO Division of Exploration and Mining  
July 1991 - present, Principal Research Scientist CSIRO Exploration and Mining

**Principal Research Interest:** Applications of rock magnetism to exploration

**Current Research Interests:**

1. Fundamental rock magnetic investigations
2. Potential field interpretation
3. Magnetic petrology
4. Development of a field technique for *in situ* determination of magnetic properties of magnetic anomaly sources

### REFEREED PAPERS

Emerson, D.W., Embleton, B.J.J. and Clark, D., 1979. Flemington intrusions, Fifield, N.S.W. - petrophysical and petrological notes. Austr. Soc. Explor. Geophys. Bull., 10, 99-100.

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Clark, D.A., D.H. French, M.A. Lackie and P.W.Schmidt, 1992. Magnetic petrology: application of integrated rock magnetic and petrological techniques to geological interpretation of magnetic surveys. *Explor. Geophys.*, 1992; 23:65-68.

Emerson, D.W., Reid, J.E., Clark, D.A., Hallett, M.S.C. and Manning, P.B., 1992. The geophysical responses of buried drums - field tests in weathered Hawkesbury Sandstone, Sydney Basin, NSW. *Explor. Geophys.*, 23, 589-617.

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Rajagopalan, S., Schmidt, P. W. and Clark, D., 1993. Rock magnetism and geophysical interpretation of the Black Hill Norite, South Australia. *Explor. Geophys.*, 24: 209-212.

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Worm, H. U., Clark, D. and Dekkers, M. J., 1993. Magnetic susceptibility of pyrrhotite: grain size, field and frequency dependence. *Geophys. J. Int.*, 114, 127-137.

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#### OTHER PAPERS

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Clark, D.A., 1983. Preliminary palaeomagnetic results from the Cuddapah Traps of Andhra Pradesh, Monograph 2 on the Evolution of the Intracratonic Cuddapah Basin, India Inst. Penin. Geol., Hyderabad, pp.47-51.

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- Clark, D.A., 1981. Variability of magnetic properties in the Cleveland tin mine, Tasmania. RIR 1230R, 24p.
- Clark, D.A., 1981. Relationship between magnetic fabric and geological structure in the Northern Leases area, Broken Hill. RIR 1237R, 37p.
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- Clark, D.A., 1988. Magnetic properties and magnetic signatures of the Trough Tank and Starra copper-gold deposits, Eastern Mt Isa Block. RIR 1745R, 50p.
- Clark, D.A., 1988. Catalogue of magnetic properties of Australasian rocks III. RIR 1746R, 93p.
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Clark, D.A., 1996. Palaeomagnetism of the Mount Leyshon Intrusive Complex, the Tuckers Igneous Complex and the Ravenswood Batholith. Exploration and Mining Report 318R, 141p.

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Clark, D.A., 1997. Theory of differential vector magnetometry - a new method for remote determination of *in situ* magnetic properties and improved drill targetting. Exploration and Mining Report 395R, 19p.

Clark, D.A. and Dickson, B.L., 1997. Physical properties, magnetic and radiometric signatures of the Kidston-Lochaber area: implications for exploration. Exploration and Mining Report 436R, 66p + floppy disc.

Dickson, B. L., Schmidt, P.W. and Clark, D. A., 1998. Processing and preliminary interpretation of magnetic and radiometric data from the Mineral Hill area, NSW. Exploration and Mining Report 483R, 9p (including 1 colour plate).

Clark, D.A. and Dickson, B.L., 1998. Physical properties, magnetic and radiometric signatures of the Goonumbla porphyry copper-gold district: implications for exploration. Exploration and Mining Report 438R, 59p + floppy disc.

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Buenos Aires, 31 de marzo de 1999

Sr. Director  
Depto. Cs. Geológicas  
Dr. Armando Massabie  
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Tengo el agrado de dirigirme a Ud. a fin de solicitar la autorización para el dictado del curso :


**Interpretación de Relevamientos Magnéticos: Aplicaciones de la Petrofísica y Petrología Magnéticas**

Por el Dr. David Clark

Este curso se realiza como parte del Proyecto Fomec 705 de mejoramiento de la oferta de posgrado del Depto. de Ciencias Geológicas.

Se adjunta el programa del curso y CV del Dr. Clark.

Sin más lo saludo muy atentamente

  
Dr. Augusto Rapalini  
Prof. Adjunto Ded. Exclusiva

  
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Curso de Posgrado  
Departamento de Ciencias Geológicas  
Proyecto Fomec 705

**Interpretación de Relevamientos Magnéticos: Aplicaciones de la Petrofísica y Petrología Magnéticas**

Por el Dr. David Clark  
CSIRO  
Australia

Curso: Lunes 12 a Lunes 19 de Abril de 9.00 a 13.30 Hs  
Departamento de Ciencias Geológicas (UBA)  
Aula Turner, Pabellón 2, Ciudad Universitaria  
1428, Buenos Aires, Argentina

Idioma Inglés

Contenidos del Curso

Día 1. Basic Rock Magnetism (with emphasis on exploration applications)

- \* Types of magnetic behaviour
- \* Induced, viscous and remanent magnetisation
- \* Measurement of susceptibility and remanence
- \* Domain structure
- \* Palaeomagnetic cleaning techniques
- \* Rock magnetic analysis of magnetic mineralogy

Día 2. Fundamentals of Potential Field Interpretation

- \* Geophysical anomalies
- \* The geomagnetic field
- \* Types of magnetic anomaly
- \* Non-uniqueness in potential field interpretation
- \* Acquisition of magnetic and gravity data
- \* Properties of potential fields in space and frequency domains
- \* Processing of potential field data

Día 3. Aspects of Magnetic Modelling (remanence, anisotropy, self-demagnetisation)


- \* Incorporating pre- and post-folding remanence, anisotropy and self-demagnetisation into magnetic modelling
- \* Case studies

Día 4. Magnetic Petrophysics and Magnetic Petrology

- \* Overview of magnetic properties of rocks
- \* Magnetic mineralogy and rock magnetisation
- \* Iron contents and oxidation states
- \* Oxygen fugacity
- \* Compositions of titanomagnetites in igneous rocks
- \* Geological factors controlling magnetisation of granitoids
- \* Effects of hydrothermal alteration
- \* Effects of metamorphism on magnetic properties of igneous and sedimentary protoliths

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\* Case studies

Dia 5. Magnetic Signatures of Ore Deposits and Ore Environments (case studies and syntheses)

- \* Geological models of porphyry copper, molybdenum and gold systems
- \* Petrophysical properties of intrusive-related ore deposits and mineralised environments
- \* Magnetic signatures of granitoid-related deposits and mineralised environments
- \* Magnetic signatures of layered mafic/ultramafic complexes and associated mineral deposits
- \* Magnetic signatures of VMS deposits
- \* Predictive magnetic models of metamorphosed or deformed orebodies

Dia 6. Examen Final

  
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