Key Information

<table>
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<tr>
<th>UCAS CODE</th>
<th>TYPICAL OFFER</th>
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<tr>
<td>J110</td>
<td>AAB: BBB; IB: 34.30</td>
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For further details on all our entry requirements, please see our Mining Engineering pages at [www.exeter.ac.uk/undergraduate/degrees/mining](http://www.exeter.ac.uk/undergraduate/degrees/mining)

Cornwall Campus, near Falmouth
Website: [www.exeter.ac.uk/mining-minerals-engineering](http://www.exeter.ac.uk/mining-minerals-engineering)
Email: cornwall@exeter.ac.uk
Phone: +44 (0)1326 371801

"Our graduate mining engineers are sought after the world over in the extractive industries as well as in exploration, tunnelling and civil engineering. We are one of the best equipped departments of our kind in Europe, with exceptional links with industry. Our students benefit from our leading edge research, extensive placement scheme and our global reputation in industry."

DR ANDY WETHERELT, MINING ENGINEERING PROGRAMME LEADER
Why study Mining Engineering at the University of Exeter?

The Mining Engineering degree is taught by the University’s Camborne School of Mines (CSM), which has over 120 years’ experience in training mining engineers and an excellent international reputation. Many extractive industry operations around the world will have a CSM mining engineer somewhere within their staff.

CSM is one of the best equipped departments of its kind in Europe. Our staff are actively involved in research and you will benefit from their cutting-edge knowledge and our research facilities. We are also the only university in the UK to have its own test mine for teaching and research.

Our degree programme is truly multi-disciplinary, including elements of civil and mechanical engineering, geology, metallurgy, economics, environmental management and health and safety. It’s also highly vocational, so in addition to lecture-based study, the programme includes field trips, tours, a summer industrial placement and practical classes in surveying and in our test mine. You will generally spend your second year summer vacation gaining work experience anywhere from Australia to the UK and will often be paid for doing so.

The Mining Engineering degree programme is professionally accredited by the Institute of Materials, Minerals and Mining (IOM3), providing the opportunity for you to work towards Chartered Engineer status after you graduate.

What is Mining Engineering?

The demand for minerals will continue to grow as the world’s population doubles over the next 40 years. Mineral development and production must be managed in a responsible manner if we are to obtain these minerals without great damage to our environment. Highly trained engineers and scientists are needed by the minerals industry now and in the future. Mining applies many different branches of science and engineering to understand how minerals can be extracted from the earth.

Mining engineers are primarily responsible for the safe and economic production of the Earth’s minerals. They work with metal ores, diamonds, coal, oil and industrial minerals such as clays, granites and limestone. Many mines involve deep underground excavations with high temperatures and very large stresses in the rock. Others involve surface working in quarries, open pits and strip mines. Mining engineers often manage teams of engineers and others from many different disciplines. Because of this, mining engineering degrees are very wide ranging and ideal for careers in engineering management.

Mining engineers must be able to understand the nature of the rocks with which they work. They apply sound engineering principles to design safe and economic methods of extraction. Knowledge of geology, engineering, rock mechanics, economics, surveying and management is necessary for anyone involved in the design and management of mines.

Recycling and reclamation are of growing international importance within the mining industry. Improvements in extraction technology now allow the treatment of secondary sources, such as the waste from previously mined deposits, industrial and domestic waste and contaminated land. In many cases it is possible to develop processes which allow a range of materials, including metals, plastics and glass, to be recovered from waste streams offering the potential for increased recycling.
**How your degree is structured**

Our programme is modular and you progress through your degree by studying modules and accumulating credits as you successfully complete them.

Individual modules are worth 10, 15 or 30 credits each. Full-time undergraduates need to take 120 credits in each year. Details of a few of the modules you’ll study are shown at the back of this brochure.

For up-to-date details of all our programmes and modules, please check [www.exeter.ac.uk/mining-minerals-information](http://www.exeter.ac.uk/mining-minerals-information)

**Single Honours**

**BEng Mining Engineering**

**Year 1:** The first year of the programme is mainly devoted to general engineering principles together with geology and surveying and an introduction to mining and minerals engineering. You will attend a one-week induction course at our test mine during the Easter vacation and learn to use mining equipment and explosives safely. At the end of the first year a three-week surface surveying field course is held on campus.

**Year 2:** In year two more emphasis is placed on mining subjects and management whilst the engineering and geology topics from the first year are further developed. In the summer vacation between the second and third years you will work in the extractive industry for at least eight weeks. Most students work overseas during this period. Although the onus is on you to find a placement, the department can help by providing contact details and suggesting companies which suit your interests. Companies with close ties to the department also provide placements for a number of students. Most students receive a wage during their placement and some companies provide other support such as accommodation and travel allowances.

Following the work placement and prior to the beginning of Year 3, we undertake a week long industrial tour (see opposite page).

**Year 3:** In the third year all subjects are very closely connected with mining. Mine design, geotechnical engineering, mining geology and minerals management are developed further. You will also carry out a mining feasibility study where you will work in small groups to design and cost a mining project.

Throughout the third year you will work on an individual research project in your area of interest, under the supervision of a member of academic staff. Previous research projects have included:

- Blast vibration analysis
- Gyrotheodolite surveys
- Orebody modelling
- Computer modelling of rock slope failure
- Health and safety in mines and quarries
- Mine and tunnel design
- Quarry product evaluation

**Opportunity to progress to MEng**

Graduates of the BEng Mining Engineering programme who achieve a degree classification of 2:1 or above may be eligible to transfer onto the EMC (European Mining Course) or the EGEC (European Geotechnical and Environmental Course). Students satisfactorily completing the EMC are awarded an MEng Mining Engineering degree while students satisfactorily completing the EGEC are awarded an MEng Geotechnics and Mining Engineering. EMC and EGEC are specialisations of the Erasmus Mundus Minerals and Environmental Programme (EMMEEP). For details visit [www.emmep.org](http://www.emmep.org)
Learning and teaching

Our teaching is carried out through a number of methods including lectures, tutorials, laboratory work, field courses, feasibility studies and projects. On average you will spend 20 hours per week in taught activities at the University and will be expected to carry out a further 20 hours per week in independent study.

During your degree you will undertake blasting trials, ventilation surveys, surface and underground surveying exercises, and operation of mining equipment. The CSM underground test mine works as a purpose-built testing facility where both teaching and research can be conducted in an authentic setting.

Other facilities include a sensor-based materials sorting and characterisation facility, mineral processing laboratory and a geomechanics rock and soil testing facility. You will have access to the research facilities in the department throughout your degree.

We’re actively engaged in introducing new methods of learning and teaching, including increasing use of interactive computer-based approaches to learning through our virtual learning environment, where the details of all modules are stored in an easily navigable website. You can access detailed information about modules and learning outcomes and interact through activities such as the discussion forums.

You do not have to travel to Exeter for any of your modules – they are all taught at the Cornwall Campus.

Research-led teaching

We believe every student benefits from being part of a research-led culture and being taught by experts – you will discuss the very latest ideas in seminars and tutorials and become actively involved in research yourself.

Across all our undergraduate programmes, teaching is strongly informed by the research expertise of academic staff who are internationally-recognised experts in their field.

Camborne School of Mines is recognised as a centre for research related to the formation, discovery, extraction and utilisation of the Earth’s natural resources, and subsequent remediation. The applied nature of much of the research is indicated by significant international industrial collaboration. Research within CSM is coordinated by three multidisciplinary groups. These draw upon the department’s research expertise in Mining and Minerals Engineering, Geology and Renewable Energy.

In Mining and Minerals Engineering we have very active research interests in blast vibration analysis, ore sorting, health and safety management, geotechnical analysis of slopes and excavations and resource modelling.

Facilities

The facilities on campus were built in 2004 and offer state-of-the-art equipment for teaching and research. Laboratory classes, using our extensive teaching equipment, enable students to fully appreciate the theoretical elements of the programme via practical examples.

CSM research facilities include world-class analytical laboratories complete with QEMSCAN®, a sophisticated scanning electron microscope-based mineralogical assessment system which is a unique facility amongst UK universities. In addition, our analytical suite comprises an electron microprobe, low vacuum scanning electron microscope, X-ray diffraction, X-ray fluorescence, atomic absorption spectroscopy and high quality microscope and imaging facilities. Other areas include a sensor-based materials sorting and characterisation facility, mineral processing laboratory and a geomechanics rock and soil testing facility. You will have access to the research facilities in the department throughout your degree, especially during project work.

Field work and tours

An industrial tour takes place during mid-September preceding the final year. Visits are made to mine sites both on the surface and underground, along with mill visits and visits to waste treatment/recycling plants. These visits develop additional learning skills and awareness of the minerals/extraction industry.

Academic support

The Cornwall Campus offers a friendly, supportive community, where staff and students get to know each other well. As a student you will have a Personal Tutor who is a member of academic staff with whom you can discuss personal and academic issues. There are also a number of services on campus where you can get additional advice and information. You can find further information about all these services in the University’s undergraduate prospectus or online at www.exeter.ac.uk/undergraduate

The CSM Students’ Association organises activities to help new undergraduates integrate into the department and offers a supportive environment for students throughout their studies.
The environment and sustainability

At the University of Exeter, we are committed to producing graduates who have an understanding of both the scientific and the human/social issues which are involved in the vital field of environment and sustainability.

At our Cornwall Campus, the new Environment and Sustainability Institute (ESI), due for completion in 2012, will be at the forefront of scientific and technological research in this field. We aim to develop further opportunities for Mining Engineering students to develop their knowledge, understanding and interest in sustainability.

Assessment

Assessment methods vary between modules, and may include essays, practical write-ups, surveying exercises, presentations and project work. You will have to pass the assessment in the first year, but the mark does not contribute to your degree classification. The overall mark for your degree is calculated from your second and third-year assessments. These draw on coursework, guided project work and exams.

Money matters

At the time of printing, major Government reforms to student finance are underway – these will allow universities to charge tuition fees of up to £9,000 a year from 2012/13. Universities that want to charge more than the new basic fee of £6,000 will have to meet additional conditions to promote access for disadvantaged students. We have not yet confirmed our tuition fees and support levels for the coming year, but, once we have done so, we will update our website as soon as possible. We therefore recommend you consult our website for this information before you submit your UCAS application for entry to university in autumn 2012. For further information, please see www.exeter.ac.uk/undergraduate/money

Scholarships

Through the generous support of The Camborne School of Mines Trust, industrial sponsors, and past students and staff we are able to offer scholarships each year to new students who register on degree programmes run by Camborne School of Mines.

The scholarships are awarded primarily on the basis of academic merit and are payable for the duration of your degree programme, subject to continued satisfactory academic performance. Further information can be found on our website at www.exeter.ac.uk/mining-minerals-engineering

Careers

A very high proportion of graduates of Mining Engineering enter employment directly related to their studies in the minerals industry, either in the UK or overseas. Other graduates move into areas such as tunnelling, civil engineering design or the oil and gas industry. However, recent graduates are working in fields as diverse as sales and marketing and operations management for major UK minerals providers. Alternatively, some graduates opt to continue their training by undertaking taught postgraduate (MSc) courses in geotechnical engineering or computing or undertake research degrees (MPhil/PhD). Below is a selection of destinations of recent graduates:

- Tunnel Engineer, Leighton Asia, Hong Kong
- Mining Engineer, Newport Goldmining, Western Australia
- Mining Engineer, MMD Sizers, Somercotes
- Chemical Engineer, Rimex Metals Ltd, Enfield
- Graduate Mining Engineer, Rio Tinto, Australia
- Trainee Mining Engineer, Grinaker Ltd, South Africa
- Graduate Mining Engineer, Xstrata, Australia
- Management Trainee in Mining Engineering, Sibelco, Sandbach
- Mine Ventilation Engineer, Anglo American, Thurles, County Tipperary, Ireland
- Graduate Mining Engineer, The Lisheen Mine, Ireland
- Engineer, Leighton Asia, Hong Kong
- MSc Mining Engineering, University of Exeter

Information about the careers entered by graduates can be found at www.exeter.ac.uk/employability/prospective
Entry requirements and applying

You can find a summary of our typical entry requirements on the inside front cover of this brochure.

The full and most up-to-date information about Mining Engineering is on the undergraduate website at www.exeter.ac.uk/undergraduate/degrees/mining and we strongly advise that you check this before attending an open day or making your application. Some programmes require prior study of specific subjects and may also have minimum grade requirements at GCSE or equivalent, particularly in English Language and/or Mathematics.

We make every effort to ensure that the entry requirements are as up-to-date as possible in our printed literature. However, since this is printed well in advance of the start of the admissions cycle, in some cases our entry requirements and offers will change.

If you are an international student you should consult our general and subject-specific entry requirements information for A levels and the International Baccalaureate but the University also recognises a wide range of international qualifications. You can find further information about academic and English language entry requirements at www.exeter.ac.uk/undergraduate/international

For information on the application, decision, offer and confirmation process, please visit www.exeter.ac.uk/undergraduate/applications
Module details

We are currently reviewing all our modules; for up-to-date details for 2012 entry, please check www.exeter.ac.uk/mining-minerals-engineering

Year 1:
- Chemistry for the Applied Sciences
- Geology
- Surveying
- Foundation Mathematics
- Mining and Minerals Engineering
- Engineering Mechanics
- Thermodynamics and Fluid Mechanics
- Mathematics 1
- Electrical and Electronic Principles
- Personal Development and IT

During the year you’ll undertake a five day Industrial Experience course where you’ll use mining equipment and explosives. You will also attend a three week Survey Field course between years 1 and 2.

Year 2:
- Fluid Mechanics
- Mathematics 2
- Environmental Management
- Project Management
- Mechanics of Materials
- Surface Mining and Mine Transport
- Electrical Energy Conversion and Transport
- Geotechnics
- Mining and Surveying

Between the second and third years you’ll spend your summer vacation working in the mining industry gaining suitable industrial experience.

Year 3:
- Minerals Engineering
- Surface Excavation Design
- Accounting and Management
- Health and Safety Risk Management
- Tunnelling and Underground Excavation Design
- Working Environment and Ventilation
- Feasibility Study
- Mining Project

Since graduating with a degree in Mining Engineering two years ago, I have moved out to Western Australia to experience the mining boom. I currently work for HWE Mining, a contracting company with a variety of mining operations.

Studying at CSM has given me not only the technical skills involved in Mining Engineering, but the all important inter-personal and project management skills required to actually make a mine site operate successfully. The degree and environment prepared me for the challenges in the workplace and the responsibilities of a mining engineer. This was especially useful when, after a year in industry, I took on the role of acting Senior Engineer at an iron-ore mine in the Pilbara.

The company recently awarded me the HWE Graduate of the Year award for how I approach the different aspects of mining, a direct result of my degree training and the excellent staff at CSM.

Mining Engineering is such a diverse area and I would highly recommend it. Be you a hands-on person who wants to get dirty underground or someone who enjoys the thrills of optimising projects, I think the mining industry has a little something for everyone.

My days spent at CSM were such fun and I now have the career and lifestyle I always dreamt about!

HOLLY MOULDING, MINING ENGINEERING GRADUATE
Mining Engineering modules

**Year 1**

**Chemistry for Applied Sciences**
Includes an overview of the structure of matter and chemical reactions, and the properties and behaviour of solutions and suspensions, reinforced by practical applications. Also develops a basic proficiency in laboratory work and safe working practice.

**Geology**
Provides an elementary training in the principal geological disciplines and their applied significance, plus an overview of the structure of the Earth and the processes by which it has evolved.

**Surveying**
Takes you through fundamental surveying techniques and associated computation. Examines other methods of survey control and detailed data capture along with the computational skills required for these methods.

**Foundation Mathematics**
An elementary course covering basic principles, methods and techniques in algebra, trigonometry, calculus and statistics.

**Mining and Minerals Engineering**
An overview of the minerals industry starting with an historical perspective and leading up to the current day implications of financial, political and energy constraints. A basic introduction to mining and minerals engineering then follows, as well as sustainability and the effects of mining on the environment. Blasting practicals are also undertaken during the term.

**Engineering Mechanics**
Ensures a full understanding of engineering mechanics for students with differing backgrounds in applied mathematics and mechanics. This module will enable you to understand later aspects of study and to make a first assessment of a mechanical or structural project.

**Thermodynamics and Fluid Mechanics**
Designed to develop your knowledge of fluid mechanics and of energy transfer and storage in thermal systems.

**Mathematics 1**
You will take two mathematics modules in the first year: both build on the work encountered in the Foundation module and introduce a range of new topics in mathematics and statistics. Additionally, the second module prepares you for statistical methods material encountered in Year 2.

**Electrical and Electronic Principles**
An introductory module covering the fundamental electrical principles including a complete range of semiconductor devices and electronic systems.

**Personal Development and IT**
An introduction to the planning and construction of technical and scientific reports. This module develops your skills in technical writing and giving verbal presentations and introduces the University’s Personal Development Planning system for recording and enhancing personal development.

**Year 2**

**Fluid Mechanics**
Extends the basic principles covered in the Thermodynamics and Fluid Mechanics module and their practical application to real engineering situations.

**Mathematics 2**
You will take two mathematics modules in the second year: one covering advanced algebra and calculus; and the other covering advanced mathematics for engineering.

**Environmental Management**
Covers the legal, social and administrative framework within which the industry operates. Provides a greater insight into the development control systems in place in the UK, together with an appreciation of the environmental aspects of mining and waste disposal.

**Project Management**
A detailed introduction to quantitative project management techniques. This module also provides you with experience of computer simulations used in project management.

**Mechanics of Materials**
Provides an appreciation of the strength and safety of the structural components you’ll find in industry. It also serves as an introduction to later work on the analysis of stress and non-elastic behaviour of materials.

**Surface Mining and Mine Transport**
Provides an overview of surface mining methods and the equipment used. Extends your understanding of engineering principles in relation to the handling and transport of bulk materials and people.

**Electrical Energy Conversion and Transport**
Covers the supply and utilisation of electrical energy on a large scale and the use of a wide range of electrical machines. Also covers the fundamentals of data transmission, the practical interfacing of microprocessors to working plant, and control engineering.

**Geotechnics**
A general introduction to rotary drilling, basic applied hydrology and rock engineering. Provides an insight into specific design applications of geotechnical engineering in civil and mining practice.

**Mineral and Surveying**
Provides a general introduction to the safe use of explosives, the selection of suitable drilling methods and underground excavation support, and an overview of mine development techniques and mine drainage. In the first semester, an underground survey is conducted at our test mine. During the last three weeks of term, you will take part in a major practical surface surveying exercise on campus.
Mining Engineering modules continued

### Year 3

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<th>Module</th>
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<tr>
<td><strong>Minerals Engineering</strong></td>
<td>Provides an overview of minerals engineering and includes both mineral processing and extractive metallurgy.</td>
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<tr>
<td><strong>Surface Excavation Design</strong></td>
<td>Provides design-based consideration of some major aspects of geotechnical engineering found in civil and mining engineering practice.</td>
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<tr>
<td><strong>Accounting and Management</strong></td>
<td>Gives you a background in industrial psychology and shows how management techniques are used in modern industry. Additionally, provides an introduction to the major quantitative management techniques used in the minerals industry.</td>
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<tr>
<td><strong>Health and Safety Risk Management</strong></td>
<td>Acquaints you with health and safety legislation relating to mining and quarrying, including aspects of risk management as pertaining to the minerals industry.</td>
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<tr>
<td><strong>Tunnel and Underground Excavation Design</strong></td>
<td>Provides design-based consideration of some major aspects of geotechnical engineering found in civil and mining engineering practice. Includes an introduction to tunnelling methods and machine TBM selection.</td>
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<tr>
<td><strong>Working Environment and Ventilation</strong></td>
<td>Extends your understanding of engineering principles in relation to the environmental conditions encountered in the workplace in relation to the ventilation of underground mines and surface buildings and plant.</td>
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<td><strong>Feasibility Study</strong></td>
<td>In the second term you’ll carry out a feasibility study of a mining project. You’ll work in a group and take a potential mining project from the initial geological information, through the mine and environmental planning stage, to an economic evaluation and request for capital.</td>
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<tr>
<td><strong>Mining Project</strong></td>
<td>Provides you with the opportunity to carry out an individual research project over the course of your third year. Project titles, involving any aspect of the course, are chosen from a list at the beginning of the academic year.</td>
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Please note that modules are subject to change and timetabling constraints and that not all modules are available every year.
Experience for life
Studying at the University of Exeter is about more than getting a degree – there’s a wealth of opportunities open to you to develop personally as well as professionally. We offer an exceptionally wide range of opportunities for you to gain the skills employers want – from management training to business placements, volunteering programmes and pre-teacher training, to a worldwide network of study abroad opportunities and careers advice from our own successful graduates.

Great reputation
The University of Exeter is a top UK university, according to the main higher education league tables. We were ranked 12th in the UK in The Times Good University Guide 2011, making it the highest ranked South West university. We have one of the highest National Student Survey rankings in the country, being in the top 10 since the survey began, and in 2010 we scored in the top 10 for teaching, academic support, personal development, and overall satisfaction.* We are also in The Times top 10 research-intensive universities: nearly 90 per cent of our research was rated as internationally recognised in the latest (2008) Research Assessment Exercise.

Contemporary campus with world-class facilities
Since opening in 2004, our £100 million Cornwall Campus has gone from strength to strength. We’ve built state-of-the-art facilities, developed innovative degree programmes and attracted leading academic staff. Our latest development, a £30 million Environment and Sustainability Institute will help put the University at the forefront of environmental and climate change research on a campus which already offers 21st century academic, research and residential facilities.

Exceptional location and great atmosphere
The Cornwall Campus offers a fantastic student lifestyle in a safe, friendly and energising environment, with plenty of opportunities for sports, including surfing, sailing and other outdoor activities. With around 4,000 students studying in the local area, nearby Falmouth has developed into a lively student town, with fantastic beaches and a wealth of live music, cafés and bars. You’ll be part of a lively student community where there are plenty of opportunities to live student life to the full but where you won’t get lost in the crowd.

Explore the possibilities
Open Days
Come and visit our beautiful campuses. We hold Open Days at our Cornwall Campus in June and October.

Campus Tours
Tours of the Cornwall Campus run on Wednesday and Friday afternoons. You’ll be shown round by a current student, who’ll give you a first-hand account of what it’s like to live and study here.

For full details and to book your place at an Open Day or campus tour, visit www.exeter.ac.uk/opendays

For enquiries contact:
Phone: +44 (0)1326 371801
Email: cornwall@exeter.ac.uk

Post-Offer Open Days
Once you receive confirmation of an offer we’ll contact you with an invitation to visit us on a Post-Offer Open Day, which will give you the chance to find out more about your programme and department and decide whether to accept our offer. While this opportunity to visit includes a campus tour and formal introduction to your subject of choice, much emphasis is placed on a more informal period for questions and answers. A number of our current students also take part on these days, leading tours and giving you the opportunity to ask them what studying here is really like! Post-Offer Open Days take place during the period January to April.

*based on average of positive responses for full service universities (ie, excluding specialist colleges)
The University’s undergraduate prospectus provides more information about the University and the full range of undergraduate degrees offered.

You can obtain a copy from www.exeter.ac.uk/prospectus

This document forms part of the University’s undergraduate prospectus. Every effort has been made to ensure that the information contained in the Prospectus is correct at the time of going to print. The University will endeavour to deliver programmes and other services in accordance with the descriptions provided on the website and in this prospectus. The University reserves the right to make variations to programme content, entry requirements and methods of delivery and to discontinue, merge or combine programmes, both before and after a student’s admission to the University. Full terms and conditions can be found at www.exeter.ac.uk/undergraduate/applications/disclaimer

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