THE UNIVERSITY OF Bolton

Online postgraduate courses for the electronics industry

E-learning modules available as short courses for Continuing Professional Development (CPD)

Custom IC Design
- Microelectronic Design
- Microelectronic Technologies and Applications
- Advanced Electronic Design Automation
- Digital Integrated Circuit Design
- Analogue and Mixed Signal IC Design
- Analogue Design using Analogue HDLs

Embedded Applications
- Microcontrollers
- Digital Signal Processing
- DSP in Speech Technology

Microsystems
- Microsystems Technologies

Signal Integrity and EMC
- Signal Integrity and EMC
- Design for Signal Integrity
- Design for EMC and LVD

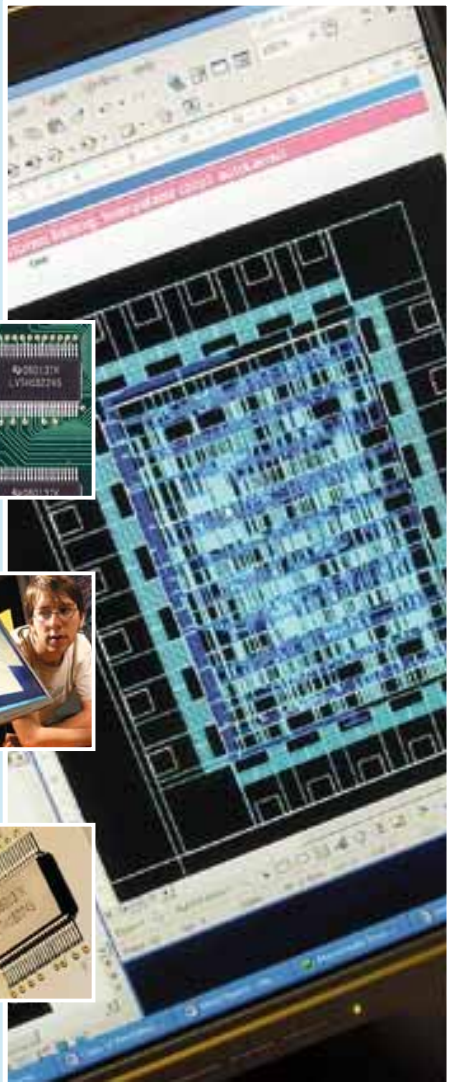
PCB Design
- Concepts of PCB Design
- PCB Design

Manufacture and Design
- Design for Product Build
- Test Strategies
- Engineering Design
- Design for Thermal Issues

Technical Management
- Industrial Management
- Project Management for Microelectronics
- Business Issues of Microelectronics
- Lead-free Implementation

Part-time study
over the internet leading to
Master of Science or Postgraduate Diploma
qualifications in

- Advanced Microelectronics
- Electronic Product Development



Take charge of your learning

- **Choose modules relevant to your requirements**
- **Study at times that suit you – courseware and design tools available online 24/7**
- **Minimal disruption to the working day**
- **Paced learning, with time to absorb and consolidate new concepts**
- **No travel necessary**

Support, direction and guidance

- **Expert tutor and IT support**
- **Access to university libraries and professional online resources**
- **Interact with a community of learners online**
- **Available modules cover custom IC design, embedded applications, microsystems, signal integrity, EMC, PCB design, manufacture, and relevant technical management topics.**

Online access to industry standard tools

- **Direct access arranged through thin client technology**
- **Develop competence in the use of industry standard EDA design tools**
- **Usage and techniques demonstrated by practical examples**
- **Tool suites include: Altera, Cadence (ASIC and PCB), Femlab, Flomerics, Matlab, Synopsys, Cliosoft and Microsoft**

MSc or Postgraduate Diploma

Modules are rated at 10, 15 or 20 credits. Qualifying for the award of Postgraduate Diploma needs 120 credits, normally achieved by studying eight modules. The table indicates the essential and optional modules within each programme.

Qualifying for the award of Master of Science has the same 120 credit requirement but additionally involves completing and writing up a substantial investigative project rated at 60 credits.

Advanced Microelectronics

The focus of the programme is the design of application-specific integrated circuits. The complete range of technologies is included, from programmable devices through to full custom; in addition there is a wide choice of technical and business/management modules. The formal requirements are detailed in the key at the bottom of the blue column in the table.

Electronic Product Development

The programme covers the technologies, materials and processes associated with the design and manufacture of products incorporating electronics. Options can be selected from a wide range of technical and business or management modules. The formal requirements are detailed in the key at the foot of the pink column in the table.

Short Courses for CPD

Modules can be studied on their own for Continuing Professional Development (CPD), as shown in the yellow column in the table.

Code	Module Title	Credits	CPD	Advanced Microelectronics	Electronic Product Development
Custom IC Design					
AMI4202	Microelectronic Design	15	O	A	O
AMI4233	Microelectronic Technologies & Applications	15	O	A	O
AMI4441	Advanced Electronic Design Automation	20	O	E	O
AMI4407	Digital Integrated Circuit Design	15	O	A	X
AMI4409	Analogue and Mixed Signal IC Design	15	O	A	X
AMI4428	Analogue Design using Analogue HDLs	15	O	A	X
Embedded Applications					
AMI4655	Microcontrollers	20	O	O	O
AMI4622	Digital Signal Processing	15	O	O	O
AMI4634	DSP in Speech Technology	15	O	O	O
Microsystems					
AMI4225	Microsystems Technologies	15	O	O	O
Signal Integrity and EMC					
AMI4814	Signal Integrity and EMC	15	O	O	S
AMI4822	Design for Signal Integrity	15	O	O	S
AMI4966	Design for EMC and LVD	15	O	O	S
PCB Design					
AMI4809	Concepts of PCB Design	15	O	O	O
AMI4931	PCB Design	15	O	O	O
Manufacture and Design					
AMI4945	Design for Product Build	20	O	O	E
AMI4957	Test Strategies	15	O	O	O
AMI4900	Engineering Design	20	O	O	E
AMI4817	Design for Thermal Issues	15	O	O	O
Technical Management					
AMI4088	Industrial Management	10	O	B	B
AMI4040	Project Management for Microelectonics	10	O	B	B
AMI4019	Business Issues of Microelectronics	10	O	B	B
AMI4982	Lead-free Implementation	10	O	B	B
MSc Project					
AMI5001	MSc Project	60	X	E (MSc only)	E (MSc only)

ESSENTIAL REQUIREMENTS

Credits required

Postgraduate Diploma (PgDip): 120 credits
Master of Science (MSc): 180 credits, incl. MSc Project

It is also possible to finish early with a Postgraduate Certificate (PgCert) at 60 credits

Key
O = Optional
X = Not available

Key
E = Essential
A = Study 3 or more
B = Study 1 or more
O = Optional

Key
E = Essential
S = Study 1 or more
B = Study 1 or more
O = Optional
X = Not available

Syllabuses of all courses are included in the module specifications at: www.ami.ac.uk/courses/

Online postgraduate courses for the electronics industry

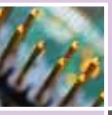
Subject Area	Concepts Level	Practitioner Level	Specialist Level	MSc
Custom IC Design	Microelectronic Design AMI4202 15 credits Microelectronic Technologies & Applications AMI4233 15 credits	Advanced Electronic Design Automation AMI4441 20 credits Ct	Digital IC Design AMI4407 15 credits Ct Analogue & Mixed Signal IC Design AMI4409 15 credits Ct Analogue Design using Analogue HDLs AMI4428 15 credits Ct	AMI5001 60 Credits MSc Project
Embedded Applications		Microcontrollers AMI4655 20 credits Ct Digital Signal Processing AMI4622 15 credits Ct	DSP in Speech Technology AMI4634 15 credits Ct	
Microsystems		Microsystems Technologies AMI4225 15 credits Ct		
Signal Integrity and EMC		Signal Integrity & EMC AMI4814 15 credits	Design for EMC & LVD AMI4966 15 credits Design for Signal Integrity AMI4822 15 credits	
PCB Design	Concepts of PCB Design AMI4809 15 credits	PCB Design AMI4931 15 credits		
Manufacture and Design		Design for Product Build AMI4945 20 credits Test Strategies AMI4957 15 credits Engineering Design AMI4900 20 credits	Design for Thermal Issues AMI4817 15 credits	
Technical Management	Industrial Management AMI4088 10 credits Project Management for Microelectronics AMI4040 10 credits	Business Issues of Microelectronics AMI4019 10 credits Lead-free Implementation AMI4982 10 credits		

CEESI training for the Electronics Industry

Ct CEESI Modules

These modules are part of the CEESI scheme and attract bursaries for eligible applicants. Additional modules are to be introduced as an on-going part of the CEESI development programme.

www.ami.ac.uk



What our graduates say

Paul Malpass England
"The way you do the design walkthroughs is perfect."

Robert Quarry England
"I felt I got a lot out of the module. Support from the tutor was very good and the library provided an excellent service."

Manoj Phatak Spain
"I think the whole initiative is most commendable and just what the industry is crying out for."

Santokh Virdee Canada
"This has opened up a wonderful opportunity for students all over the world."

Daragh Smyth USA
"I have looked at several distance learning courses in Britain, Ireland, USA and Australia and I am convinced that this MSc is the most suitable and interesting course for me to follow."

Simon Tong USA
"The news from this side of the world is my MSc has allowed me to get a job with Panasonic's American automotive operation."

Companies who have already sponsored employees include:

Agilent Technologies, Altera, ARM, BAE Systems, Cadence, Coretec, Cypress Semiconductor, Fujitsu, Infineon Technologies, Intel, Motorola, National Semiconductor, Philips, QinetiQ, Raytheon, Siemens, Solectron, Sony SDE, STMicroelectronics, Wolfson Microelectronics, Xilinx, Xyratex.

Visit our website:
www.ami.ac.uk

Availability

Modules start three times a year (towards the end of February, June and October) and last for 14 weeks. To check when a module is next scheduled to run, please refer to the availability chart at www.ami.ac.uk/courses/availability. The modules can be studied from home or work. It is not necessary to travel to Bolton or to any other centre.

Entry requirements

The normal entry qualification for an MSc degree is an honours degree in a related science or engineering subject. Other qualifications (such as HND or HNC) in a technical subject coupled with relevant experience can be accepted for enrolment for a Postgraduate Diploma. (It becomes possible to transfer to the MSc once 60 credits have been gained). Modules can also be studied as part of an applicant's Continuing Professional Development by enrolling as an associate student. There are no specific academic requirements for associate students but a level of relevant knowledge and understanding equivalent to a first degree will be assumed.

Wider study choices (CEESI)

Leading UK universities are working together to widen the choice of training modules in electronics. The CEESI programme allows you to 'mix and match' modules from different institutions and still obtain a qualification. For details, please refer to www.ceesi.ac.uk

Bursaries for CEESI modules

Bursaries of £300 per module are available to residents of the European Union for CEESI modules only. These modules are indicated **Ct** in the chart overleaf.

CEESI training for the Electronics Industry

To apply, click on bursaries at www.ceesi.ac.uk

Fees

We do not expect you to pay for a year's study in advance. Fees are invoiced three times a year and reflect the choice of module(s) being studied for the current term. The fees are £350 for a 10 credit module, £480 for a 15 or 20 credit module and £1,500 for the MSc project (60 credits). Value added tax (VAT) is not charged. The total cost of an MSc depends slightly on the choice of modules but is typically £5,210. Fees are reviewed annually, the figures quoted are valid at least until August 2006.

How to apply

Complete the online application at www.ami.ac.uk/courses/apply. Alternatively, post us the paper form included with the information pack.

Further information

For module syllabuses and samples of the courseware, refer to www.ami.ac.uk. For an informal discussion about how these modules and qualifications can help address your career aspirations or meet your company's training requirements, contact:

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