



*This is to certify that  
Chris FitzGerald  
has completed the course  
Beyond 3G (B3G) - 219522\_eng  
on  
12/28/07*



Association for  
Computing Machinery

*Advancing Computing as a Science & Profession*



## **Beyond 3G (B3G)**

### **About This Course**

#### **Overview/Description**

To describe B3G technologies.

#### **Target Audience:**

Technical professionals; IT and business managers who need to learn about emerging broadband wireless technologies; students studying or researching broadband wireless communications and technologies.

Requires an understanding of the basic concepts of cellular, mobile, and fixed wireless technology and the fundamental principles underpinning their operation.

#### **Certification:**

No Certifications for this Course.

#### **Expected Duration:**

2 Hours 35 Minutes

#### **First publication date:**

This course was released June 22, 2005.

#### **Last revision:**

This course was last updated June 22, 2005.

#### **Course Number:**

219522\_eng

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## Beyond 3G (B3G)

### Course Objectives

Topic Name	When you have completed this topic, you should be able to
The evolution of cellular systems	recognize the evolution of cellular systems.
Competing wireless technologies	recognize the technologies involved in future wireless convergence.
Current 3G technologies	recognize the features of current 3G technologies.
Identifying wireless technologies	distinguish between wireless technologies and their features.
Enabling 3.5G	recognize the features of the emerging technologies that will enable 3.5G.
HSDPA	recognize the role of HSDPA in 3G technology.
FLASH-OFDM	recognize the advantages of FLASH-OFDM.
UMTS-TDD	recognize the features of the UMTS-TDD specification.
Comparing 3.5G technologies	compare 3.5G technologies.

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# Beyond 3G (B3G)

## References

### Articles / White Papers

### Books

#### **Future Mobile Networks: 3G and Beyond**

2001, Alan Clapton, Institution of Electrical Engineers, 085296983x

#### **Going Wi-Fi: A Practical Guide to Planning and Building an 802.11 Network**

2003, Janice Reynolds, CMP Books, 1578203015

#### **IP for 3G: Networking Technologies for Mobile Communications**

2002, Dave Wisely, Philip Eardley, and Louise Burness, John Wiley & Sons, 0471486973

#### **W-CDMA and cdma2000 for 3G Mobile Networks**

2002, M.R. Karim and Mohsen Sarraf, McGraw-Hill, 0071385134

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*This is to certify that  
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has completed the course  
4G Communication Systems - 219523\_eng  
on  
12/30/07*



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# 4G Communication Systems

## About This Course

### Overview/Description

To explain the elements of 4G communication systems.

### Target Audience:

Technical professionals; IT and business managers who need to learn about emerging broadband wireless technologies; students studying or researching broadband wireless communications and technologies.

Requires an understanding of the basic concepts of cellular, mobile, and fixed wireless technology and the fundamental principles underpinning their operation.

### Certification:

No Certifications for this Course.

### Expected Duration:

2 Hours 20 Minutes

### First publication date:

This course was released June 15, 2005.

### Last revision:

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### Course Number:

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## 4G Communication Systems

### Course Objectives

Topic Name	When you have completed this topic, you should be able to
The evolving wireless environment	recognize potential future developments in wireless services.
The elements of 4G	identify the characteristics and benefits of the principal and enabling technologies of 4G.
4G applications and services	identify the system and service architecture issues for 4G networks and their solutions.
Recognizing the properties of 4G	recognize the properties and technologies of 4G.
CDMA and 4G	recognize the role of CDMA in 4G communication.
OFDM and 4G	recognize the role of OFDM in 4G communication.
Smart antennas and MIMO	recognize the role of smart antennas in future wireless systems.
Identifying 4G technologies	identify the technologies involved in 4G.

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# 4G Communication Systems References

## Articles / White Papers

## Books

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2001, Alan Clapton, Institution of Electrical Engineers, 085296983x

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*This is to certify that  
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4G Implementations - 221229\_eng  
on  
12/30/07*



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## 4G Implementations

### About This Course

#### Overview/Description

To outline 4G wireless networks and applications.

#### Target Audience:

Technical professionals; IT and business managers who need to learn about emerging broadband wireless technologies; students studying or researching broadband wireless communications and technologies.

Requires an understanding of the basic concepts of cellular, mobile, and fixed wireless technology and the fundamental principles underpinning their operation.

#### Certification:

No Certifications for this Course.

#### Expected Duration:

2 Hours 10 Minutes

#### First publication date:

This course was released June 16, 2005.

#### Last revision:

This course was last updated June 16, 2005.

#### Course Number:

221229\_eng

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## 4G Implementations

### Course Objectives

Topic Name	When you have completed this topic, you should be able to
4G migration	recognize the challenges to 4G migration and identify possible solutions.
Future network architectures	recognize the principles and functions of future network architectures.
Implementing future networks	recognize the requirements for implementing future networks.
Identifying network architectures	recognize the features of future network architectures.
Providing user services in 4G	recognize how vertical handoff will benefit 4G users.
Providing I-centric services	recognize the role of I-centric services in future wireless communication.
4G service deployment	recognize the factors involved in 4G deployment.
User services in 4G	recognize the strategies for providing user services in 4G.

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# 4G Implementations References

## Articles / White Papers

## Books

### **Future Mobile Networks: 3G and Beyond**

2001, Alan Clapton, Institution of Electrical Engineers, 085296983x

### **Going Wi-Fi: A Practical Guide to Planning and Building an 802.11 Network**

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*This is to certify that  
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Non-Cellular Wireless Technology - 219524\_eng  
on  
12/30/07*



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# Non-Cellular Wireless Technology

## About This Course

### Overview/Description

To explain non-cellular wireless technology.

### Target Audience:

Technical professionals; IT and business managers who need to learn about emerging broadband wireless technologies; students studying or researching broadband wireless communications and technologies.

Requires an understanding of the basic concepts of cellular, mobile, and fixed wireless technology and the fundamental principles underpinning their operation.

### Certification:

No Certifications for this Course.

### Expected Duration:

2 Hours 30 Minutes

### First publication date:

This course was released June 17, 2005.

### Last revision:

This course was last updated December 06, 2006.

### Course Number:

219524\_eng

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## Non-Cellular Wireless Technology Course Objectives

Topic Name	When you have completed this topic, you should be able to
Wireless LAN technology	compare the standards and solutions in place for wireless LANs.
IEEE 802.11	recognize the features of current and future IEEE 802.11 standards.
UWB and IEEE standards	compare IEEE 802.11 and UWB technologies.
Understanding wireless standards	distinguish between the various wireless standards.
IEEE 802.16	recognize how WiMax will achieve wireless broadband.
IEEE 802.16-2004	recognize the role of IEEE 802.16-2004 in wireless broadband access.
IEEE 802.20	recognize the advantages of IEEE 802.20 for users.
Comparing 802.16e and 802.20	compare the IEEE standards 802.16e and 802.20 as competitive technologies.
Understanding WMAN and WWAN technologies	compare IEEE standards 802.16e and 802.20 as competitive technologies.

# Non-Cellular Wireless Technology References

## Articles / White Papers

## Books

### **Future Mobile Networks: 3G and Beyond**

2001, Alan Clapton, Institution of Electrical Engineers, 085296983x

### **Going Wi-Fi: A Practical Guide to Planning and Building an 802.11 Network**

2003, Janice Reynolds, CMP Books, 1578203015

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