



BEng (Hons) in Computer Networks and Distributed Systems

BEng (Hons) in Mobile Computing



BEng (Hons) in Computer Security and Digital Forensics


## Prof. Bill Buchanan


Leader, Centre for Dist. Computing and Security

Member of: Computer Systems and Networks Teaching Group

[Leader: Dr Alistair Armitage]

 **Contact:** w.buchanan@napier.ac.uk

 **Room:** C.63

 **Telephone:** X2759

 **MSN Messenger:** w\_j\_buchanan@hotmail.com

 **WWW:** <http://www.dcs.napier.ac.uk/~bill>

<http://buchananweb.co.uk>

EDINBURGH



## BEng (Hons) in Computer Networks and Distributed Systems

**Aim:** Coverage of a wide range of networks and distributed systems. This includes distributed processes, systems, data, and so on.

**Themes:** Networks, Mobile Systems and Security

## BEng (Hons) in Mobile Computing



**Aim:** Coverage of a wide range of mobile systems, from hardware up to mobile application development.

**Themes:** Embedded Systems, Mobile Systems and Internet Systems Development (.NET).



## BEng (Hons) in Computer Security and Digital Forensics

**Aim:** Coverage of security and digital forensics in as wide a scope as possible ... complete coverage.

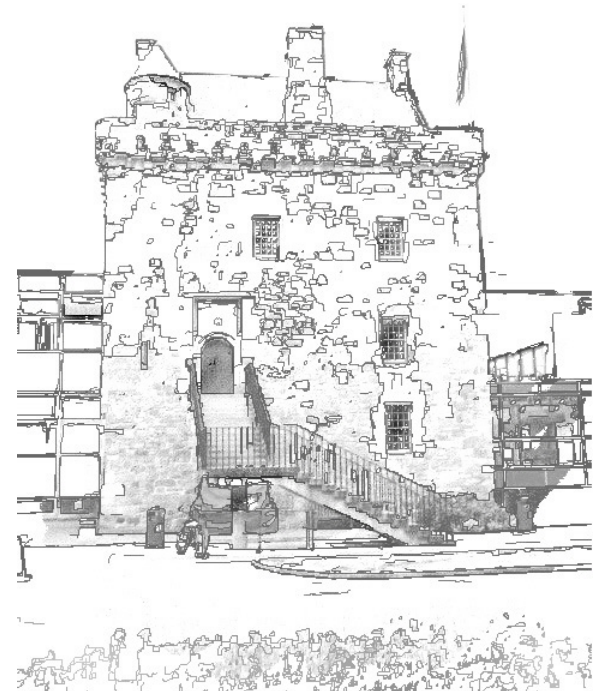
**Themes:** Security, Networks and Internet Systems Development (.NET).





**CNDS, CSFC and Mobile Computing**  
Prof W Buchanan - Computer Systems and Networks

Why? ...



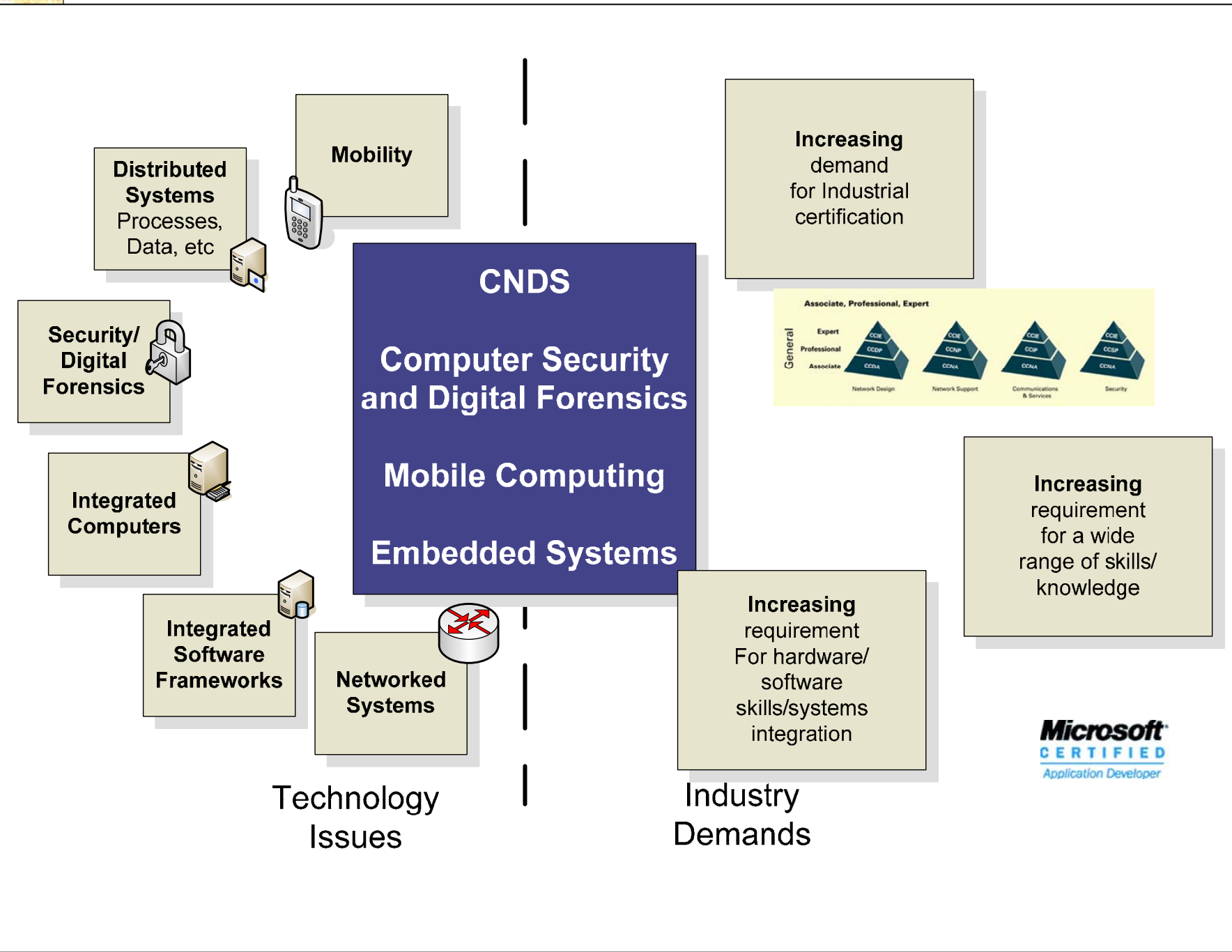
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Author: Bill Buchanan



# CNDS, CSFC and Mobile Computing





# CNDS, CSFC and Mobile Computing

Prof W Buchanan - Computer Systems and Networks

NU	Dr Neil Urquart
JJ	Jim Jackson
AA	Dr Alistair Armitage
FG	Frank Greig
GR	Dr Gordon Russell
BB	Prof Bill Buchanan
IR	Dr Imed Romdhani
AA-D	Dr Ahmed Al-Dubai

AL Alistair Lawson



## Security/ Digital For.



**Adv. Sec. and  
Digital Forensics**  
(ADFS S2)  
CSN10102 BB



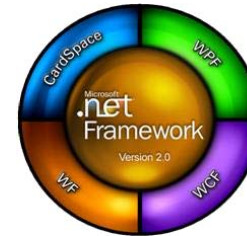
**Security and  
Forensic Comp.**  
(SFC S1)  
CSN09105 BB

## Internet Sys Development

**Applied .NET  
Development**  
(ADFS S2)  
SET09104 AL



**.NET XML  
Web Services**  
(SFC S1)  
SET10104 AL



**Emb. RT-Systems  
and Sensor Net.**  
EPS4  
CSN10103 AA



**Emb. Systems- Ap.  
Dev.**  
EPS 3  
CSN09103 FG



### Embedded Systems

**Distributed  
Systems**  
(DSYS S1)  
CSN10101 NU



**Systems**  
(SYS S1)  
CSN09101 GR



**CCNP Routing  
(CROU)**  
CSN09102 IR



### Networks

**Mobile Systems**  
(MSYS S1)  
CSN10104 AA-D



**Wireless LANs**  
(WLAN S1)  
CSN09104 IR



### Mobile Systems

# Mobile Systems

**Mobile Systems**  
(MSYS S1)  
CSN10104 AA-D

**Wireless LANs**  
(WLAN S1)  
CSN09104 IR

**Mobile Systems**

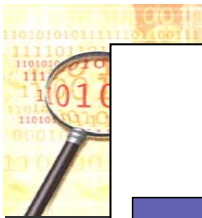
**Syllabus:**  
Mobile Protocols  
Multicast Communications  
Mesh Networks  
Wireless ATM  
Wireless Infrastructure

**Syllabus:**  
Aironets  
SSID  
Security  
Modelling

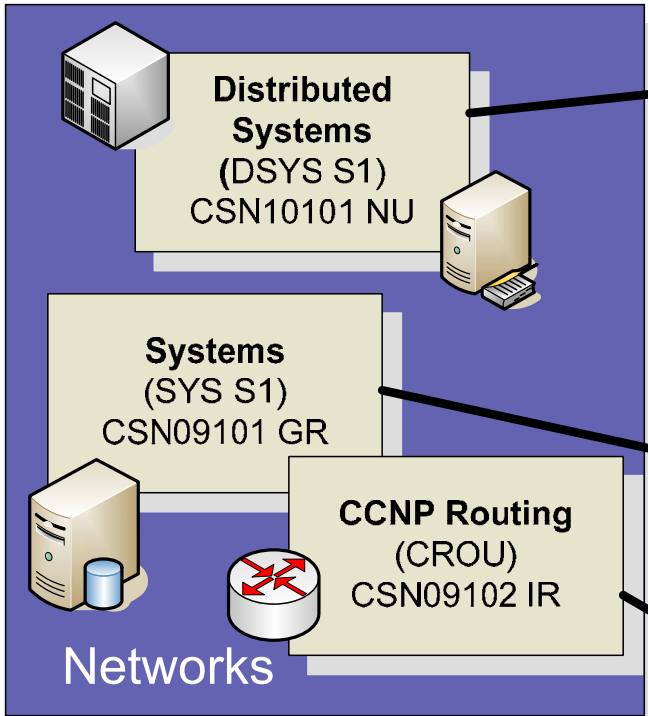
**Certification:**  
Cisco Adv Wireless Systems



**Dr Imed Romdani**  
<http://www.dcs.napier.ac.uk/~cs247>  
**Dr Ahmed Al-Dubai**  
<http://www.dcs.napier.ac.uk/~cs244>



# Networks



**Syllabus:**  
 Architectures for Distributed Systems  
 Inter Process Communication.  
 Middleware  
 Time and state  
 Concurrency control  
 Naming, Replication and fault tolerance  
 Grid Computing  
 Distributed Problem solving

**Syllabus:**  
 CCNP Routing

**Certification:**  
 CCNP BSCI

**Syllabus:**  
 Linux filesystem  
 User administration  
 Account management  
 Linux architecture  
 Server network management  
 Server security  
 Gateway security  
 Web server configuration  
 DNS  
 Administration troubleshooting



**Gordon Russell, C49, Ext. 2754**

**Neil Urquhart, C66, 2655**

<http://grussell.org/>

<http://www.dcs.napier.ac.uk/~neilu>

### Internet Sys Development

**.NET XML Web Services**  
(SFC S1)  
SET10104 AL

**Applied .NET Development**  
(ADFS S2)  
SET09104 AL



**Alistair Lawson, C62, Ext. 2730**

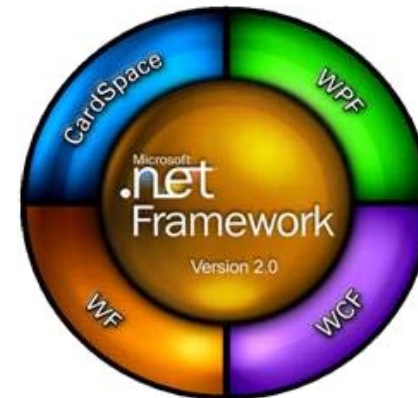
<http://www.dcs.napier.ac.uk/~alawson/>

### Internet Systems Dev.

**Syllabus:**  
XML  
.NET Remoting  
Advanced Web Services  
Security  
Deployment

**Certification:**  
Microsoft .NET XML  
Web Services (70-320)

**Syllabus:**  
.NET Applications:  
Windows.  
Web.  
Mobile.  
Library.  
Etc.



### Security/ Digital For.



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(ADFS S2)  
CSN10102 BB



**Security and  
Forensic Comp.**  
(SFC S1)  
CSN09105 BB



**Prof Bill Buchanan, C63, Ext. 2759**

<http://www.dcs.napier.ac.uk/~bill>



**Syllabus:**  
Fundamentals  
Encryption  
Authentication  
Intrusion Detect. Sys.  
Secure Protocols  
PKI  
Intra. Security (IPSec)  
Forensic Computing

**Certification:**  
Cisco CCSP (SNPA)



### Syllabus:

Encryption/Key Management  
Authentication infrastructures.  
Security Evaluation.  
Software Security (.NET 3.0)  
Web Security (Cardspace,  
electronic transactions)  
Data Hiding  
Digital Forensics.

### Certification:

Cisco CCNP ISCW [Encryption  
Tunnels, IPSec, IDS, etc]



Security/Dig Forensics

# Embedded Systems

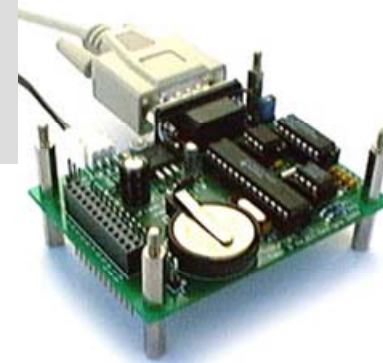
**Emb. RT-Systems and Sensor Net.**  
EPS4  
CSN10103 AA

**Emb. Systems- Ap. Dev.**  
EPS 3  
CSN09103 FG

**Embedded Systems**

**Syllabus:**  
Embedded Internet  
Wireless Sensor Networks  
Real Time Operating Systems (RTOS)

**Syllabus:**  
Embedded Systems Architecture.  
Embedded Systems Hardware.  
Embedded Systems Development.



**Frank Greig, D58, Ext 2755**

<http://www.dcs.napier.ac.uk/~frank>

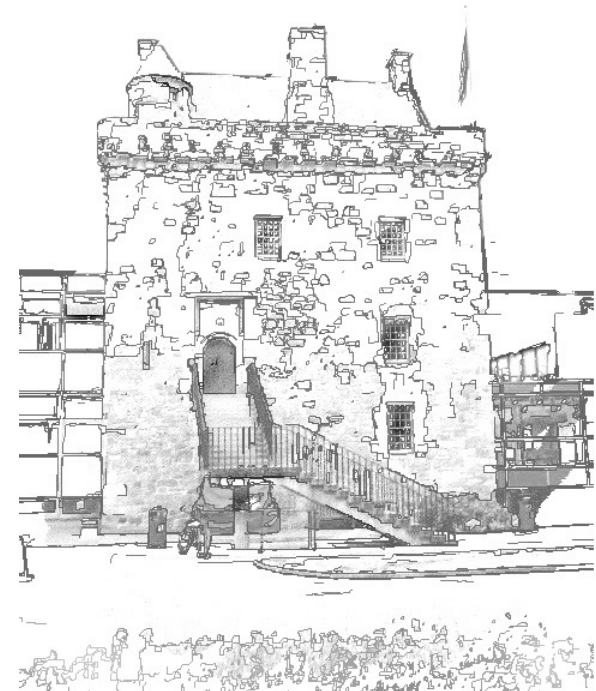
**Dr Alistair Armitage, D53, Ext 2784**

<http://www.dcs.napier.ac.uk/~alistair>



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# The programmes ...



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# BEng (Hons) in Computer Networks and Distributed Systems


**Hons-project**  
(40 credits)


**Mobile Systems**  
(MSYS S1)  
CSN10104 AA-D 

**Wireless LANs**  
(WLAN S1)  
CSN09104 IR 

**Mobile Systems**


**Distributed Systems**  
(DSYS S1)  
CSN10101 NU  


**Systems**  
(SYS S1)  
CSN09101 GR 

**CCNP Routing**  
(CROU)  
CSN09102 IR 

**Networks**

**Security/  
Digital For.**

**Adv. Sec. and  
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(ADFS S2)  
CSN10102 BB 

**Security and  
Forensic Comp.**  
(SFC S1)  
CSN09105 BB 





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**Embedded Systems**

**Internet Sys Development**

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CSN10101 NU

**Systems**  
(SYS S1)  
CSN09101 GR

**Networks**

**Security/  
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CSN10102 BB

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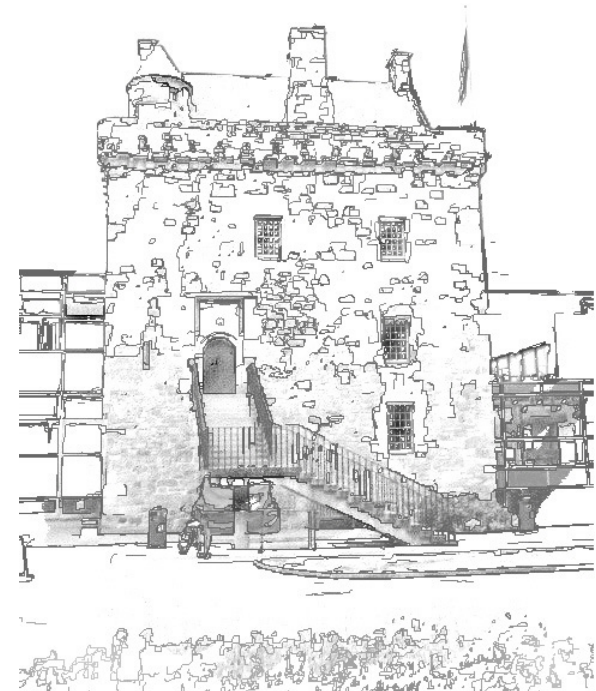
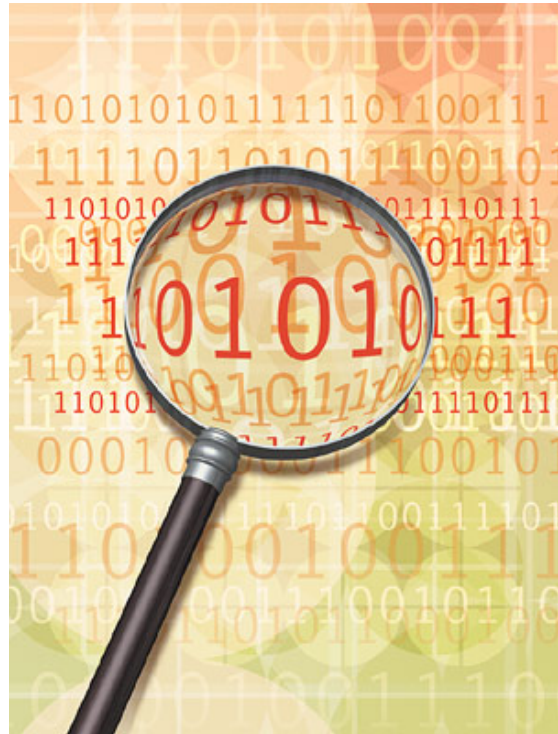
**Applied .NET  
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SET09104 AL





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# Further contacts ...



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**NAPIER UNIVERSITY**  
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Author: Bill Buchanan



**Frank Greig, D58, Ext 2755**

<http://www.dcs.napier.ac.uk/~frank>

**Dr Alistair Armitage, D53, Ext 2784**

<http://www.dcs.napier.ac.uk/~alistair>

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**Mobile Systems**

**Dr Imed Romdani, C64, Ext. 2726**

<http://www.dcs.napier.ac.uk/~cs247>

**Dr Ahmed Al-Dubai, Room: C67, Ext. 2796**

<http://www.dcs.napier.ac.uk/~cs244>



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**Mobile Computing**

**Embedded Systems**

**Internet Sys Development**

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**Alistair Lawson, C62, Ext. 2730**

<http://www.dcs.napier.ac.uk/~alawson/>

**Jim Jackson, D53, Ext. 2785**

<http://www.dcs.napier.ac.uk/~cs75/>



**Prof Bill Buchanan, C63, Ext. 2759**

<http://www.dcs.napier.ac.uk/~bill>

**Security/ Digital For.**

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CSN10102 BB

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**Networks**



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### **Why?**

- Extensive links with industry (Agilent, Seven Layer, Sun Microsystems, and so on).
- Extensive links with public sector (Scottish Police, NHS, and so on).
- Research underpinning for key areas.
- Cisco certification integration.
- Security certification integration.
- Microsoft .NET and ASP.NET used as a platform.
- Next generation technology: mobile, security, distributed ...

