

CSC3045 - Agile & Component Based Development using .NET
CSC3052 - .NET Web Development using Agile Methods

Introduction to the Modules

**School of Electronics, Electrical Engineering &
Computer Science**

Queen's University, Belfast

Dr Darryl Stewart

-
- ▶ *Welcome back!*

The questions you might want answered

- ▶ Who is he and what is he like?
- ▶ What is the purpose of this Module?
- ▶ What will I (hopefully) learn?
- ▶ What is the course format?
- ▶ How will I be assessed?
- ▶ What resources will I need?
- ▶ What can I expect of him and what will be expected of me?
- ▶ Is there a schedule of activities?
- ▶ Other things I want to know...



A bit about me

Dr Darryl Stewart

Research Area: Speech, Image & Video Processing.

Projects: Speech recognition, Speaker recognition, Automatic Lip reading/Lip biometrics (e.g. LIOPA – seeking volunteers...)

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**Room G2 (Rear of Ground floor), 6
Stranmillis Road (beside Conor's café)**

Locations: Tel: 028 90974733

(Also have an office in ECIT for research)
Tel: 028 90971883



Where I will be (usually) this semester

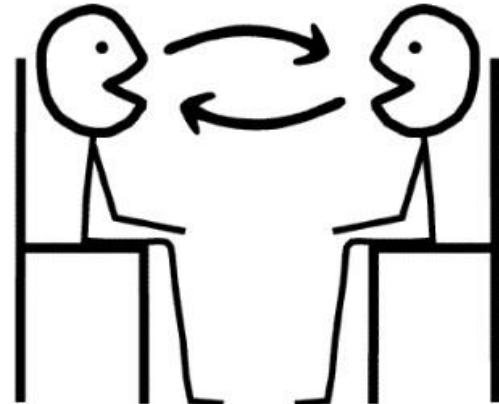
	Monday	Tuesday	Wednesday	Thursday	Friday
Morning	QUB	QUB	ECIT	QUB	ECIT
Afternoon	QUB	QUB	ECIT/QUB	ECIT	QUB

- When in QUB use 028 90974733
- When in ECIT use 028 90971883
- Either way, leave a voicemail with a contact phone number and I will be able to call you back

Ways to contact me

Small logistical questions about module

- ▶ Grab my attention before or after lectures.



If you have an **URGENT** query

- ▶ Give me a call - I like to talk! – it is very efficient - details on the previous slide



If it is **NOT URGENT**

- ▶ See me at the scheduled lab times
- ▶ Email – I will try hard to respond within a day or two – **please leave a contact telephone number in each email** as I might find it easier to phone you back than write a long email



Email Format

- ▶ For general email use the following **Subject Line**
 - ▶ “CSC30xx – Team Cxx – *What the message is about...*”
 - ▶ E.g. **“CSC3052 – Team CIT3 – SVN repository problem”**

- ▶ Please include your **full name, student number**
- ▶ I am old and forgetful and might not remember everyone's first names – I remember faces better than names – I have all your lovely pictures to look up who is who! 3045 3052



Objectives of the module

To provide you all with the opportunity to (in no particular order) :

- ▶ learn the principles and practices of agile development
- ▶ experience working in an agile development team using some eXtreme Programming practices
- ▶ experience the agile project planning and project tracking processes
- ▶ experience the role of “Scrum Master”
- ▶ develop new skills and valuable experience with .NET technologies



Module Learning Outcomes

If the module is doing its job correctly then a student who passes would be able to do the following (these are called the **threshold** learning outcomes):

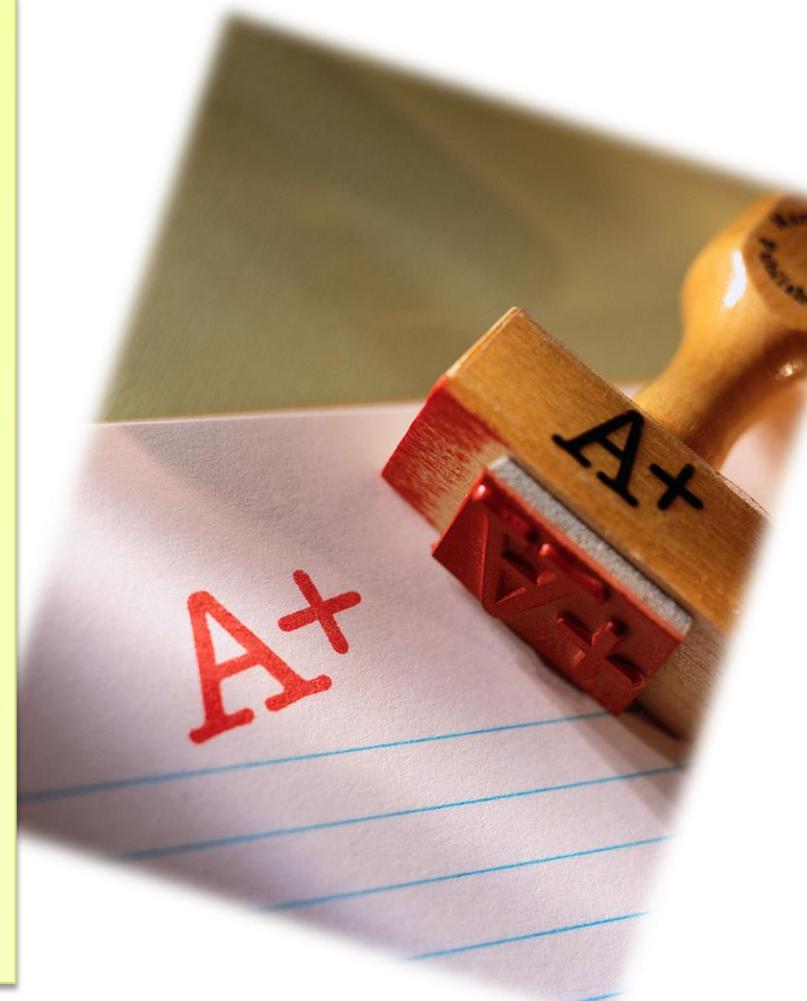
- ▶ Understand the principles of agile development
- ▶ Understand a range of practices that agile software development teams can apply
- ▶ Develop a large software artefact which meets a minimum satisfactory standard, using both agile project management and agile software engineering practices
- ▶ Demonstrate proficiency in using a range of contemporary software development tools and techniques



Module Learning Outcomes

And those students that pass the module will attain a final module mark which represents how well they have been able to do the following (these are the **modal** learning outcomes):

- ▶ Understand and explain the range of factors that can influence the success of an agile development project
- ▶ Develop a large software artefact as part of a team which demonstrates good software design skills, code refactoring skills, comprehensive software testing skills and good coding standards and code documentation skills.
- ▶ Demonstrate strong time management and agile project management skills and the ability to apply the principles and practices of agile development



Lecture details

- ▶ Present the theory and go through some examples
 - ▶ Do group exercises etc.
 - ▶ Slides will (when possible) be available to print beforehand or shortly after
-
- ▶ **You need to learn a lot for yourself outside the lectures**
 - ▶ Level 3 requires self directed learning – key professional transferrable skill
 - ▶ Readiness and ability to do this is paramount to success in this module and your future career



Lecture details

- ▶ The following are the timetabled lecture slots

- ▶ Monday 11 – 12 (weeks 1-**6**)
- ▶ Monday 1 – 2 (weeks 1-**6**)
- ▶ Tuesday 10 - 11 (weeks 1-12)
- ▶ Tuesday 2 - 3 (weeks 1-12)

All in **ECS2/0G/006** (here!)

- ▶ **YOU WILL NOT HAVE TO ATTEND ALL OF THE SLOTS SHOWN ABOVE**
 - ▶ The next slides show the specific times of lectures for each module code
- ▶ Slide 12



CSC3045 lecture times

	Monday 11-12	Monday 13-14	Tuesday 10-11	Tuesday 2-3
1	Attend	Attend	Attend	Attend
2	Attend	Attend	Attend	Attend
3	Attend		Attend	Attend
4	Attend	Attend	Attend	Attend
5	Optional	Optional	Optional	Optional
6	Optional	Optional	Optional	Optional
7				
8			Feedback and planning	Feedback and planning
9			Optional	Optional
10			Optional	Optional
11				
12			Feedback and revision	Feedback and revision

Optional: Attend only if you need to ask something, e.g. Client Questions/Agile Advice (in Lecture theatre)

CSC3052 lecture times

	Monday 11-12	Monday 13-14	Tuesday 10-11	Tuesday 2-3
1	Attend	Attend	Attend	Attend
2	Attend	Attend	Attend	Attend
3		Attend	Attend	Attend
4	Attend	Attend	Attend	Attend
5	Optional	Optional	Optional	Optional
6	Optional	Optional	Optional	Optional
7				
8			Feedback and planning	Feedback and planning
9			Optional	Optional
10			Optional	Optional
11				
12			Feedback and revision	Feedback and revision

Optional: Attend only if you need to ask something, e.g. Client Questions/Agile Advice (in Lecture theatre)

Lab Times – ECS2/01/002

- Attendance **not** monitored by me
- These are **NOT** structured practicals
- Computers are booked out for you at these times
- I will be in the lab until not needed during each session
- Keep these times free for sprint reviews in the relevant weeks
- **During sprints these are good times for all team members to work together**

CSC3052 -Thursday 11-1

CSC3045 – Friday 3-5
(Don't blame me for this time!)

Assessments

How are we assessed?

- ▶ **100% for team project and associated activities**
- ▶ You are assessed as a team and also individually
- ▶ Designed to cover learning outcomes
- ▶ There are various team and individual deliverables which allows an assessment of each individual
- ▶ Self and peer assessment will be a factor

Resources

Lecture Slides

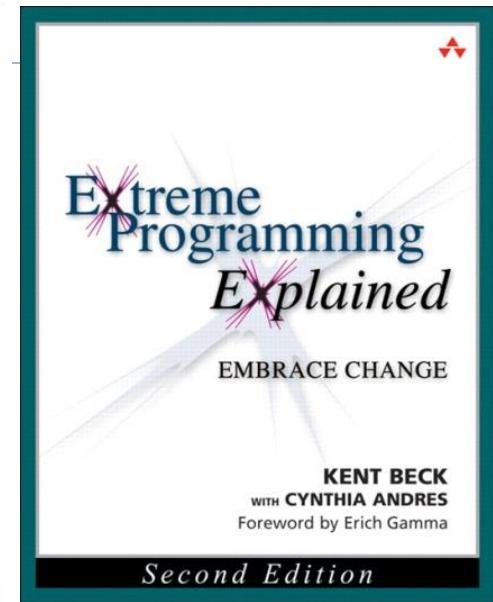
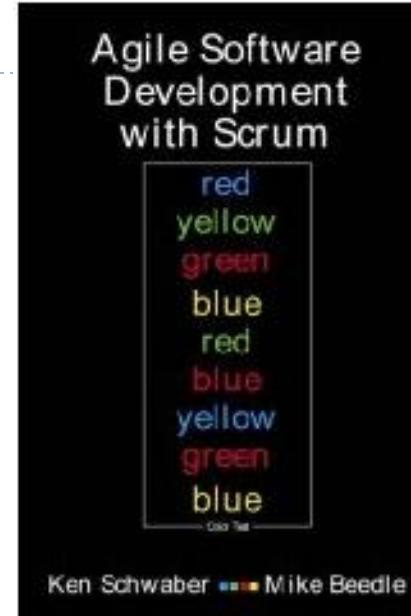
- ▶ These will be available – suggested reading will be given where appropriate

Books

- ▶ There are many books on **agile development** – the library has several

- ▶ These are some of the ones that I think are worth reading

...



.NET Study

- ▶ CIT students will be doing a project using ASP.NET (Webforms or MVC)
- ▶ CS/SE/SESE students will be doing a project using C# – it will **NOT** be an ASP.NET website. It will be a windows client application and a separate server application.
- ▶ Games students will be doing an Android project (I know it isn't .NET! Phil Hanna will explain!)

Browse for books/web resources that you think suit your current knowledge and ability - there are lots of books in the library



Important



- I will not be teaching people how to program
 - There is not enough time
 - This is Level 3
- I will not teach how to program in .NET
 - There is not enough time
 - Teams have been able to do this very well in the past
- I will not debug peoples programs/help with programming problems
 - I am the client
 - Teams should *swarm* around problems to find solutions



Important



If you want to:

- Do well
- Stay friends with your team mates
- Be able to deliver a good system
- Not be overly stressed out during the sprints

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Then:

- Begin working for around 12-15 hours a week on the module (including timetabled hours)
- Start programming with the language/framework you need to learn everyday from now on....really
- Work hard to actually produce software using the language before the sprints begin...I might ask you about this
- Work out how to implement the components that will be part of your system
- Work with your team mates on small projects before the sprints

Important topics to study - CIT

Learn how to create ASP.NET web applications using **C#** which involve the following:

- ▶ Login/user authentication
- ▶ Multiple types of access rights – different options for each user type
- ▶ Databases – data adding/editing/retrieval (experiment with what is possible in the labs and using the hosting services available in the school)
- ▶ Data visualisation - grids, details, charts...
- ▶ AJAX, make the UI responsive
- ▶ ***Important team decision – Webforms vs MVC***
 - ▶ ***I have no preference***

Important topics to study - Games

You should learn about :

- ▶ Java, OpenGL ES
- ▶ Android
- ▶ **Dr Phil Hanna will set requirements for this project**
- ▶ **He will point you towards specific things to investigate before the sprints**
- ▶ **Related to your Game Engine module**

Important topics to study –

Everyone else (CS, SE, SESE, Exchange students)

You should (at least) learn about :

- ▶ C#
- ▶ WPF
- ▶ Data visualisation (possibly using charts)
- ▶ Processing XML
- ▶ Databases
 - ▶ Test what is possible using the School hosting services or a local (.mdf) file
- ▶ WCF (web services REST, SOAP etc.)
 - ▶ Test what is possible in the labs and what is possible with the hosting options available in the school
- ▶ Design patterns – MVC, MVP, **MVVM**
- ▶ Testing frameworks, Unit tests, Mocking etc.

Things that you can expect of **me**:

- ▶ I'm here to help – and will very happily provide assistance and direction if requested (obviously within reason!)
- ▶ I will try to be as supportive as possible – everyone learns at a difference pace and making mistakes is often the best way to learn
- ▶ I will try to make the lectures as interesting and varied as possible
- ▶ I will be more than happy to answer questions within lectures - if something is unclear please say
- ▶ I will be fair and consistent when assessing projects



Things I will expect of **you**:

- ▶ You will attend lectures and participate in learning activities
- ▶ You will work with the other members of your team during (and before) your project according to the schedules and plans you make
- ▶ You will be honest and transparent and fair to your team mates when carrying out reviews of peer performance
- ▶ You will give me useful feedback to help improve the module



Things you should expect from your team mates:

- ▶ They attend meetings on time
- ▶ “On time” means a bit early!
- ▶ Work when they say they will work
- ▶ Give honest/realistic answers in scrum meetings, e.g. estimates of remaining work
- ▶ Attend the lectures/lab sessions
- ▶ **Get help when they need help**
- ▶ Be **cooperative** and helpful when possible
- ▶ Give you a fair peer appraisal at the end



Follow your team rules

*Planned **Rough*** Module Schedule

During lecture times	Outside lecture times
<p>Weeks 1, 2, 3, 4</p> <ul style="list-style-type: none">• Introduction to the module• Introduction to Agile Development• Project Overview & Team Organisation• Scrum• XP• Agile Requirements : User Stories• Source Code Management• Unit Testing/TDD• Planning Poker• Sprint planning• Scrum Meetings• Pair programming• Sprinting + Deliverables• Retrospectives	<ul style="list-style-type: none">• Self Study :<ul style="list-style-type: none">- .NET framework- C# / ASP.NET /Java- Agile topics covered in lectures• Prepare with your team for the start of the sprints

Module Schedule

During lecture times	Outside lecture times
Week 5 & 6 <ul style="list-style-type: none">• Go to the lecture theatre <u>only</u> if you need to ask something, e.g. Client Questions/Agile Advice (in Lecture theatre)• Otherwise do development work in labs	<ul style="list-style-type: none">• Development work• Scrum meetings• Be a Scrum Master• Etc.
Week 7 <ul style="list-style-type: none">• Sprint 1 - Sprint Reviews (including client feedback)	<ul style="list-style-type: none">• Prepare videos/deliverables• Sprint Reviews• Sprint retrospectives etc.• Research any new requirements• Sprint Planning• Bug fixes
Week 8 <ul style="list-style-type: none">• Planning	

Module Schedule

During lecture times	Outside lecture times
Week 9 & 10 <ul style="list-style-type: none">• Go to the lecture theatre <u>only</u> if you need to ask something, e.g. Client Questions/Agile Advice (in Lecture theatre)• Otherwise do development work in labs	<ul style="list-style-type: none">• Development work• Scrum meetings• Be a Scrum Master• Etc.
Week 11 <ul style="list-style-type: none">• Sprint 2 - Sprint Reviews (including feedback)	<ul style="list-style-type: none">• Prepare videos/deliverables• Sprint Reviews• Sprint retrospectives etc.
Week 12 <ul style="list-style-type: none">• Sprint 2 - Sprint Reviews (including feedback)• Review and revision lecture	<ul style="list-style-type: none">• Team report• Individual report• Peer assessment

Team formation

- ▶ Teams of **7** are ideal for this (**Games teams need to chat with Phil on Thursday about this**)
 - ▶ Friendship teams are also ideal **if compatible**
-
- ▶ Team members should have compatible 'lifestyles' – lab working hours are compatible
 - ▶ **CIT students must decide and indicate on their form if they will want to use MVC or Webforms or either so that likeminded people can be added to the team**
 - ▶ It is foolish and detrimental (for you and the team) to be in a team if you can't work at the same time as others in the team
 - ▶ Expected to work in the labs on the project for **minimum** of 6 hours a week – your times should overlap with the others in the team
 - ▶ **Expect to work much more than this minimum to do well**
 - ▶ Team members ideally will have reasonably compatible goals – aspirations and preparedness to work for similar grades - Pass/2.2/2.1/1st

Team formation

- ▶ Form clusters of *compatible* ‘friends’ with ≤ 7 people
 - ▶ Identify sub clusters of ≤ 4 people in each larger group (**essential**)
 - ▶ Physically return the forms to Brian Flemming by 3pm on Wednesday this week
 - ▶ One person should submit the form on behalf of all the individuals on it
 - ▶ **Please do not submit multiple copies of the same information!!!!!!**
 - ▶ I want to know your planned working times and unavailable times (times when it is **impossible** for you to attend – not just times when you don’t want to work)
 - ▶ Submit a form on your own if you have nobody to team up with yet (don’t worry there will be many people in this position)
-
- ▶ I will form the teams using this information and announce them asap

Any questions



Take home messages

- ▶ Agile experience is **very valuable** addition to your CV
- ▶ You **will** be asked about this module in job interviews
- ▶ **100%** of the module is the Project
- ▶ You will be working in teams
- ▶ You are expected to study .NET/Java on your own
 - ▶ Get the books and find other useful resources
 - ▶ Get Visual Studio/ Android IDE for your own use
 - ▶ Start learning now